

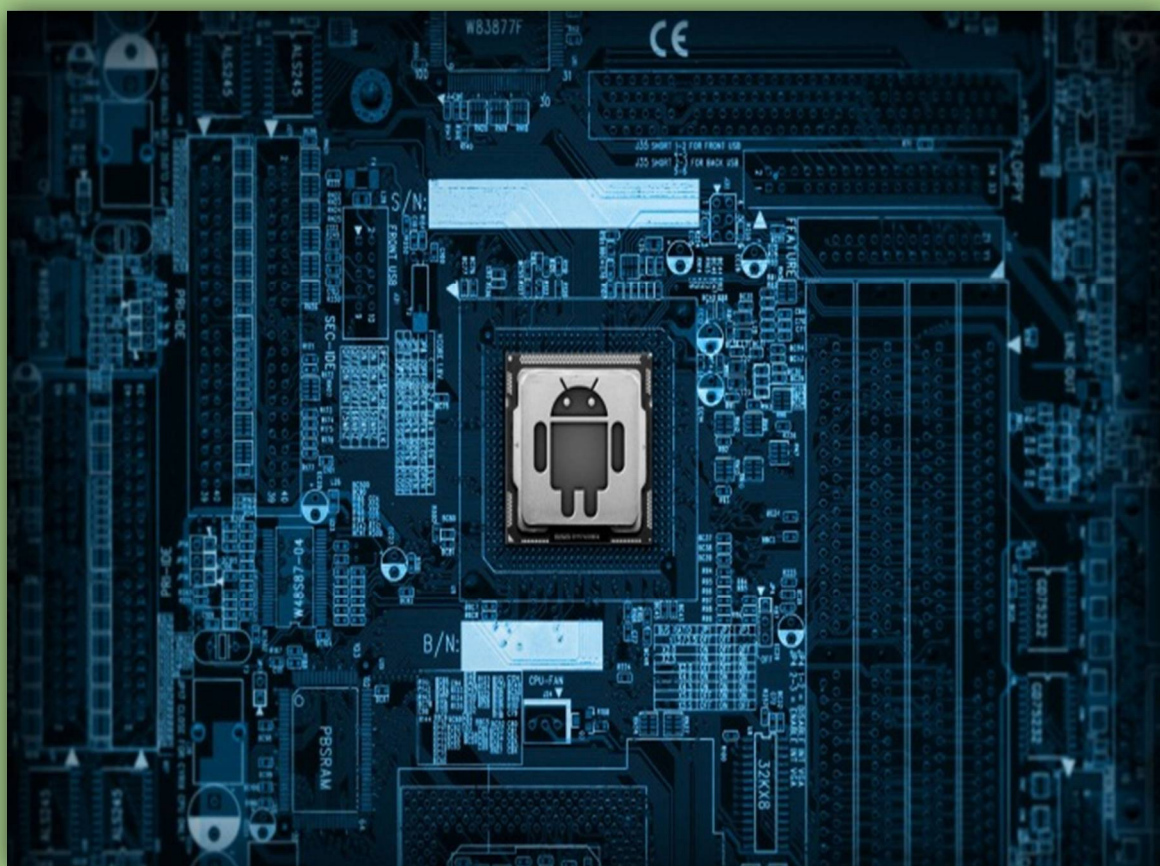


MINISTRY OF DEVELOPMENT OF INFORMATION  
TECHNOLOGIES AND COMMUNICATIONS OF THE  
REPUBLIC OF UZBEKISTAN  
TASHKENT UNIVERSITY OF INFORMATION  
TECHNOLOGIES

*INTELLECTUAL GENERATION OF UZBEKISTAN*

COLLECTION OF ARTICLES OF THE FIRST STUDENTS' SCIENTIFIC-PRACTICAL  
CONFERENCE

**April 6-11, Tashkent**



**Tashkent – 2015**

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## **ORGANIZING COMMISSION OF THE CONFERENCE:**

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**Jury:**                              **First pro-rector on educational work of TUIT:**

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**Professor of USUWL: M.T. Iriskulov**

**Organizers:**                      **Foreign Languages Department:**

**Head of Department: V.Kh. Gaziyeva**

**Teaching staff:                      M.A. Nazarova**

**G.S. Saidalieva**

**D.M. Alikulova**

**M.A. Sayfutdinova**

## PREFACE

On April 6, 2015 in Tashkent University of Information Technologies (TUIT) the First Students' Scientific Conference under the name of "Intelligent Generation of Uzbekistan (IGU)" was held.

The motivation of the Conference was taken under the Resolution of President of the Republic of Uzbekistan I.A. Karimov "On measures for further enhancement of the system of teaching of foreign languages" Decree № PQ-1875, December 10, 2012.

The aims of the conference are as followings:

- developing talents and skills of scientific researches in the field of technology and improving the students' English language skills;
- encouraging students in the academic world.

More than 100 students of TUIT and its branches participated in the conference with their innovations and projects, which were reflected in their articles in the following scientific journal. They had an opportunity to choose their own direction according to six sections:

- I. SECTION: Computer Engineering
- II. SECTION: Software Engineering
- III. SECTION: Television Technologies
- IV. SECTION: Telecommunication Technologies
- V. SECTION: Economics & Management
- VI. SECTION: Professional Education

The winners of the conference were awarded with valuable gifts.

The Conference left an indelible impression in the mind of not only students', but teachers' as well.



## **LOOK FORWARDS IN TIME**

As our world and technology is rapidly developing, we can observe the highest technological inventions, programs and equipment are designed by the most famous companies and inventors. The best android mobile phones, robots, 3D printers and other technological wonders make people amuse and astonish.

I would like to emphasize, that Tashkent University of Information Technologies has the highest status among the educational establishments of our Republic. Also many young talented students of our university have been creating and designing new highly developed programs. Most of the students are the Masters of Programming, who have already invented robots, teaching – learning software, web pages, e-books, e-dictionaries and computer games. The students of Tashkent University of Information Technologies, not only the best in their specialty sphere, but also are eager to learn foreign languages.

Moreover, teacher training and students exchange programs are running at the university. We have collaboration with many universities of the world, like Korean University in Tashkent INHA. Professional-academic staff of TUIT have retraining courses, also honored students have got a chance to study in Korean Universities. This is one of the motivational projects of our university. Much work has been done for the development of educational process of TUIT. Here we should mention Mr. Lee as a person, contributed much for the development of the university.

In this conference students demonstrated their theoretical knowledge through their researches, project presentations and scientific articles. Simultaneously they used their English to present their materials.

I'd like to express my deep appreciation to the Head of Foreign Languages Department V.Kh. Gaziyeva and her creative teachers for organizing such kind of conference and training students to acquire academic language.

**Rector of TUIT**  
**Mukhitdinov Khakim Asrorovich**

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## I SECTION– COMPUTER ENGINEERING

### SOCIAL NETWORKS: HARM AND BENEFITS

*A.Abdurahmonov, S.O. Ergasheva*

***Summary:** Using social network as a rule. Useful and useless aspects of social network and to solve it. There are a lot of social networks as in runet, and in the international segment and, exceptionally, in the English-speaking Internet. But more about any platform I can not tell, because it works only with the above examples. Social networks can bring many benefits: to help you find an old friend, learn about a new book or music album, organize meetings and events. But the abuse of public networks (internet, job, computer games) can lead to dependence, loss of focus, loss of time, alienation and dullness. Social networking is not a great evil, as many believe. This is both good and bad. In your power to take from them only the good and the bad weed.*

***Keywords:** Social network, useful and useless, odnoklassniki.ru, Facebook, twitter.*

I have already addressed the issue in passing about the dangers of social networking sites in other articles, but now decided to examine this issue in a separate article. Here I will talk about how social networking craze like Contact, Facebook, Friendster and Twitter may adversely affect the mental health of a person. I will give some tips on how to use social networks for the benefit, not harm. I also made a rating of social networks, which you can find at the end.

**Social networks** are a trend of Internet development in the direction of integration, combining features into a single, multi-user web-based platform. These platforms allow users to chat with friends, read news, watch movies, listen to music, share it with other members, take part in discussions,

combined with the same interests, create community and all these opportunities are concentrated on one site!

Undoubtedly, social networks - a great technological achievement that promises many opportunities. But with these opportunities come and trouble ... not to say that social networking is one continuous harm, as we cannot say the same thing, for example, about computer games. With proper, disciplined approach to this miracle of Internet technologies can get some benefit and make their lives easier. But there is always a risk that works with social networks affect the harmful effects on our psyche.

Social networks have greater addictive potential, i.e., a significant risk of dependence. There are several reasons. The first reason is that the work in social networks annoys the pleasure centers in the brain. We are experiencing positive emotions, every time we read a friendly comment under your photo, we "like" when someone leaves positive feedback, etc. The desire to re-obtain these emotions carries us back to the open spaces of social networks, forcing it to spend more and more time.

The second reason lies in the peculiarities of assimilation of information when working in multi-user web-based platforms. The man who sits, for example, in contact gets a lot of diverse information in small portions over a small period of time: read a short comment, responded immediately opened the news, there buried his eyes in an interesting position in the community about science, began to read, in parallel to include audio, not read as well as attention distracted message from a friend, and said come on this page to someone you know that there is new. Such a mode of operation the brain gets used as fast as his hands and mouth get used to "flipping" seeds. It's not just in the pleasure of learning information and features, and convenience, speed and accessibility of social networks!

To enjoy the views of the other person about your photos, do not suffer much: logged in (even with the phone), and one-click how many people

watched "likened" your photo on the beach! To occupy their attention something does not strain and get carried away, no need to look to find an interesting article: contact opened and began to read the news and watch the updates of friends, all quick and convenient.

The speed and accessibility, in my opinion, are important preconditions of any addiction. People instinctively look for the easiest ways to achieve pleasure, let these paths are inefficient and lead to harmful consequences. Get at least the habit of smoking fast and affordable. Dependence on spending time on social networks leads to the following problems.

Earlier, I wrote about how the information can be assimilated by the user in social networks: fast, spontaneously and in small portions. As I said before, the brain gets used to this kind of work with the information and gradually loses its ability to hold the attention for a long time on something developing attention deficit hyperactivity disorder. This side effect generated by the philosophy of integration of information when working with a single web interface begins to combine many functions such as communication, listening to music, discussion meetings, etc., the user is tempted to transgress to all at once and perform multiple processes in parallel.

It has a bad effect on the ability of our thinking. It becomes difficult to hold the attention for a long time, such as reading a book. Our mind, following the acquired habit, begins to jump from one subject to another. Therefore, there are difficulties in order to consistently reflect, to think one problem: attention constantly "floats."

This problem is especially acute in the context of the rising generation. Children's thinking is much more "plastic" than adults and therefore may be easier to adopt standards of harmful thinking that form, including social networks.

**Information dependence.** Social networks can be turned into a kind of gum for the brain. We are getting used to constantly get some information and

if it does not, begin to experience breaking information. It is expressed in the fact that it becomes difficult to relax in those situations when the brain receives enough data, for example, when we go on the subway, or are in the country. After all, our brains forever concerned to cease not chew the cud, and this requires new pieces of information, as used every day to get it out of social networking.

**Fatigue and stress.** When working in a steady stream of information and replacing each other emotional experiences, the brain is tiring, the body is under stress. In addition, while working in the social platforms you look at the monitor, and an overabundance of such activity in itself leads to fatigue, what would you at the same time to read.

**Alienation and decreased intelligence.** When you have a lot of time sitting in social networks, your brain is busy meaningless and purposeless activity which cannot be called a full-fledged intellectual work. You just deal with it with something that he was busy all the time without thinking about the quality of the information received. Instead, you could about something thought to come to solve problems in life, make plans for the future to come up with some useful idea, read a good book, etc. But all this is not possible as long as your mind is puzzled chewing gum online, turning you into mindless zombies and alienated.

Due to the fact, information is delivered rapidly and continuously, and you do not have time to digest, think about it. Emotions were not developed in response to incoming impressions, as it takes time and rest, which are not in a convulsive assimilation of information. As if you shower in your mouth and swallow without chewing dumplings, salad, cucumber, soup, candy ... Combining a culinary combination of sweet with salty, cold to hot. You cannot even say that you liked the most, as you hurry to swallow everything as quickly as possible and do not have time to form an estimate, a certain emotional response.



Compassion, empathy, commitment and enthusiasm disappear, not having time to really take shape in your mind, as one after information dramatically.

It should be noted, that the above-mentioned effects can harm will not only because of the dependence on social networks. These symptoms may be as a result of excessive enthusiasm for computer games and the Internet in general, and a consequence of the many manifestations of modern life: hard work, the rapid pace of life, random information consumption, boredom...

**Can I use social networks without harm?** In spite of the terrible things that I described above, I am sure that the social network is not an absolute evil, just need to use them wisely and know when to stop around, as in many other things. I do not see anything wrong with opportunities to meet people with the same interests, find old friends and rehabilitate past due, have a convenient and accessible interface to communicate with your friends, listening to music (and find it) and watch movies. Social networks have a number of useful features that really make life easier and work on the Internet. This is a great technological and cultural breakthrough in the development of the Internet. However, as with many breakthrough technologies in the social platforms need to be careful that these are not addressed in harm. I will give advice about "hygiene" in social pastime networks.

**Tip: Limit the time spent in social networks.** No need to go and check for updates "BKontakte" every hour during every free moment at work or at home. Limit the number of visits to social networking pages, say, up to two times a day. If you are used to visit social networks at work in free time, spend an experiment. Instead, as soon as you let go of work frantically to open a browser and enter the classmates / contact, go take a walk or just sit quietly for 10 minutes on a chair with the monitor turns off. Give your brain a

break from the information! At the end of the day you will feel a lot less tired, I assure you!

If you have to work a lot of free time, it is better to spend it on something more valuable and necessary than social networks. Read informative articles, learn new, because the modern Internet provides so many wonderful opportunities for further information! Internet is not just a social network!

If you follow this advice and you will be less sit in contact, for example, no more than half an hour a day, then you just do not have time to do all senseless activity, such as that which is to comment on each photo is to like any video, be up to date with all the updates of friends. Use of social network only for its intended purpose, i.e. as an interface that allows you to communicate exchange opinions, find out about events. But do not abuse these opportunities; avoid unnecessary and senseless "idle talk." When you sit in social networks, you kill the time, which could spend a something more valuable that would benefit you in the future! Brain busy chewing gum Internet is not able to generate any ideas, no thoughts; he is busy only senseless activity operates in idle. A man, who spends all his time on the Internet or TV, is the embodiment of social zombie's anti-utopia novels about the future. He did not think about anything, no imagination, his mind constantly busy huskies, clicks and digesting media slops.

**Social Networking – control of the internet?** It is possible, that social networks are the means of control over the global Internet. In fact, many users most of their time work on a network of social platforms. For them, the Internet is limited space for these platforms. Own social network only encourage this trend, seeking greater integration, capturing more and more new functions (watching movies, music, games), for which we access the Internet.

A global site is much easier to control than many local disparate domains. Especially, if at such a site exists and the requirement for approval denonimization (registration strictly under his own name). It is likely that the idea of a controlled internet really gets its development a reality through very social media craze.

Of course, this does not mean that social networks were invented just for this. Nevertheless, the fact remains that despite the fact that social platforms want to qualify for full coverage features that people want to get on the Internet, there is very limited information, in both quantitative terms, and the ability to obtain this information by using the features of the engine. In short, most social networks do not focus on the fact that man is something studied and received the information he needs in full.

These sites cannot be a full replacement for the whole of the Internet, no matter how tried to do so. This is the main conclusion of the thoughts that I have outlined above. I do not want you to produce some kind of paranoia based on the idea of total control and surveillance of you over the Internet. I myself am to all sorts of paranoid theories and the people who are obsessed with them a touch of irony. Just do not abuse social networks, and remember that there are many other useful sites, such as Wikipedia, sites with popular scientific information, the site of self-development, specialized blogs ... the Internet is not limited to social media. To brighten up the gloomy tone that began to take on this article at the end, let me tell you about their favorite social networks, it turns out and some sites can be very useful.

**Useful social networks.** Last.fm is my favorite social network. (And it's not advertising) It is designed to search for music and there it is implemented very convenient, at least, I really like. I love music; I listen to different styles of electronic directions to jazz and rock. This site provides an excellent opportunity to find performers to his liking, relying on their own musical

tastes. Site learns your tastes, connect to your home media player (Winamp, Foobar) or iPod's and getting out information about lost compositions.

To search for new artists can use the system's recommendations; you can search for the most similar to those musicians that you like and you can search by style or learn that listening to friends. The system informs the user about the events in his city, which may be of interest to him. For example, if your library has a performer plays, Orbital, the system tab in the "events" will inform you of the arrival of these musicians your city.

In short, the possibilities are many. But, like any social network c on last.fm can "freeze": wander aimlessly through the pages of friends, leave stupid comments, proceed with reference to the link and spend time in the shuffle. There also needs to know when to stop and use the site for its intended purpose. Then it can be very useful. With this website, imdb.com selection of movies to watch in the evening for me ceased to be a long and laborious task. I no longer need to read bulky reviews homegrown critics to find a movie that is suitable for my taste. Ways to find movies on this site a lot: find your favorite movie and the system displays a list of pictures that appeal to people who like your any film. In fact, this algorithm is very good. Therefore, I discovered many great films. You can search by the director of actor, author on the soundtrack. You can put yourself assess viewed films and the system itself will give you advice. Rating has long been an authoritative standard for assessing a film that guided millions of movie lovers around the world in the selection of films.

**Stumble Upon** - Recently discovered this great social network. The idea in the next, when registering, you specify its own interests, for example, self-development, physics, hobbies and press the magic button «Stumble». The program is looking for a site for you page on the Internet, relevant to your interests, such as "10 most fascinating experiments in physics", if you checked "physics" in their own interests. Page is displayed directly in the

interface, that is, your profile page does not have to leave and you see other sites as if through a window Stumble Upon. In this case, you have access to all the features that are on the site, which shows you this social network. You can leave comments, shopping, etc.

The system shows you only those pages that other users have liked excellent alternative ranking in search engines. This system is indispensable in a situation where you want to spend time on the Internet, but do not know where to start. Stumble Upon page will prompt you to meet your interests. However, in a system like there is only an English interface and search for English sites (like) was added as a friend and my profile [stumbleupon.com/stumbler/nperovcom](http://stumbleupon.com/stumbler/nperovcom). [livelib.ru](http://livelib.ru) social network books. Came across this site while trying to find something similar to last.fm, not only music, but on the books. Wanted to read, but did not know what kind of book to choose. Looking for a web service that would facilitate my search. A lot of time on it, I have not spent since discovered it recently, but, at first glance, the site is a good and convenient interface. You can find books for all tastes, read the evaluation of readers, biographies of the authors, etc. This site - a vivid example of what a social network is not only thousands of virtual friends, pointless comments and huskies. This is an example, in all respects, a useful site that promotes personal development user.

**Less useful social networks.** **vk.com** good site, in terms of engine, features and technology (although I'm not a big expert in web technologies, but, in my opinion, they are very, very advanced in the case of VK). However, if misused, possible side effects, such as addiction and a waste of time and all of what I wrote above. However, in many ways it is a convenient site.

You can listen to almost any kind of music, watch movies, and it is all free. It is possible to find old friends, at school, at work, on the pioneer camp, etc. To contact me is convenience so that you can easily view images on any

topic: from travel, to painting, old photos, etc. All this is represented in the relevant groups and is very easy. **Vkontakte** also provides a convenient interface for communicating with other users. **facebook.com** much less pleasant than in contact. Movies cannot watch as well as listen to music. The engine is not as intuitive as that of VC. **Bkontakte**, was originally a clone of FB, but now, in my opinion, has surpassed contact Facebook. I even feel some pride in pleasing Russian developers and programmers.

**Useless platform.** To the ability to write short status, translating them into a common thread and get answers. However, **Twitter** has become very popular. Of course, on a site you can read a good quote, learn about the latest news, but in general, I do not see much sense in this social network. Although I have an account there (see link at the top right of the page). **odnoklassniki.ru** site replicates many of the features and VK FB, but they are much smaller. Many useful functions VK there are not represented. The entire interface classmates as "locked up" under the activity expressed in commenting on photos and grading. To put a high score, you need to pay. The site is focused on dividends and parasite on the lowest virtual user needs. In my opinion, it is bad social network, almost entirely stupid.

## **DEVELOPMENT OF INFORMATION SYSTEM “ELECTRONIC EDITORIAL”**

*A. Aydarova, N. Ibragimova*

***Summary:** In this paper an information system for automation the process of publication materials in editorial is developed. The results of this research will help to workers of editorial to work more effectively.*

***Key words:** information system, electronic editorial, process models, IDEF0, IDEF3, IDEF1X, DFD diagram.*

Nowadays most industrial spheres have their own information systems. They use those systems to make easy their work. Analysis of literature and internet resources shows that there are no any automatic systems for editorials. Most of modern editorials need in systems, which will help to process data and to prepare it to press.

In order to partially solve this problem, information system must be designed to automate processes of giving task and sharing data among the workers of editorial.

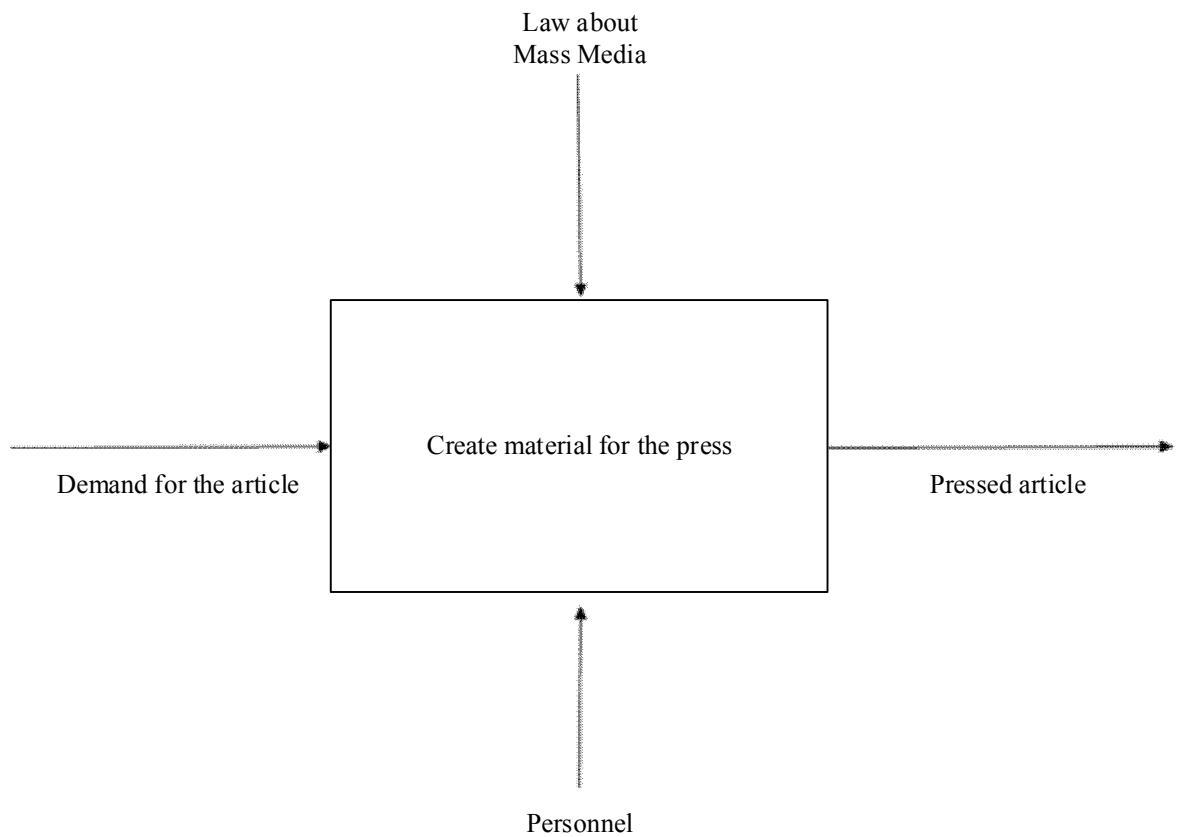
How to works information system?

Description: There is any event (there is a decision silt the new law, the new firm, office, etc. opens) and to editorial comes the demand for article or the editor himself decides what to publish in circulation. Further, he gives the commission to write the article to the journalist. The journalist finds a material and writes an article. Afterwards he sends article to the proofreader on check. The proofreader sends a ready material to the publisher. The publisher addresses to the freelancer for imposition and design of circulation. After the freelancer makes out all, the publisher publishes circulation.

Electronic editorial helps to workers of editorial to automate their work. They do not spend time to go each other with commissions or questions. They chat with e-mail with each other. There is an electronic messenger like corporative network in the system.

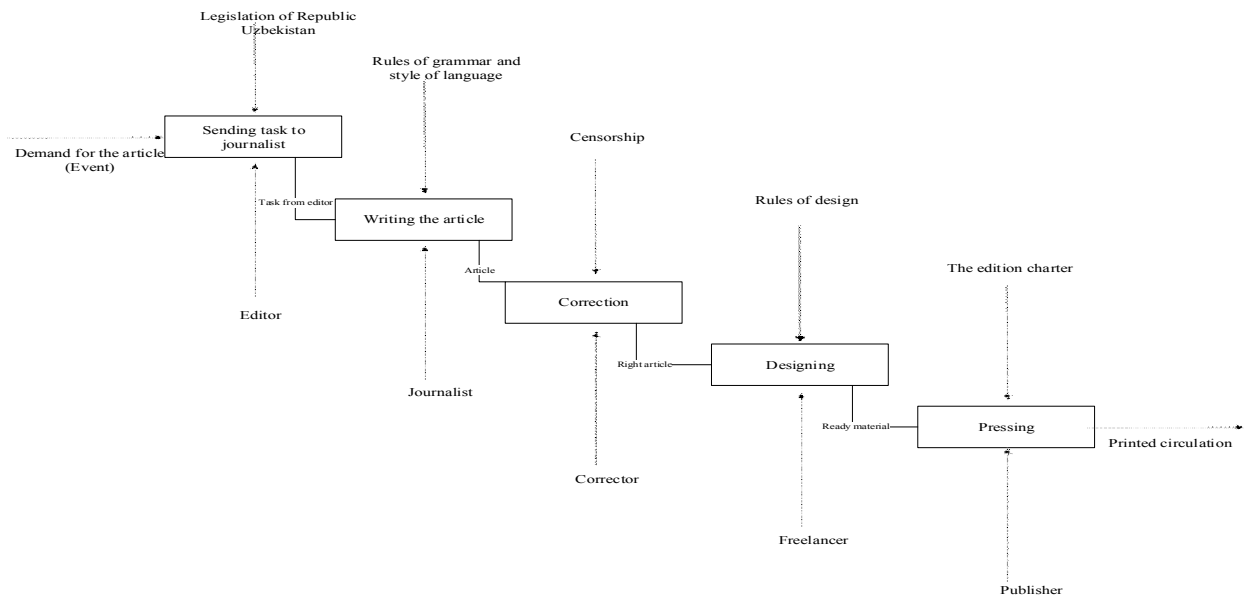
**Model IDEF0.**



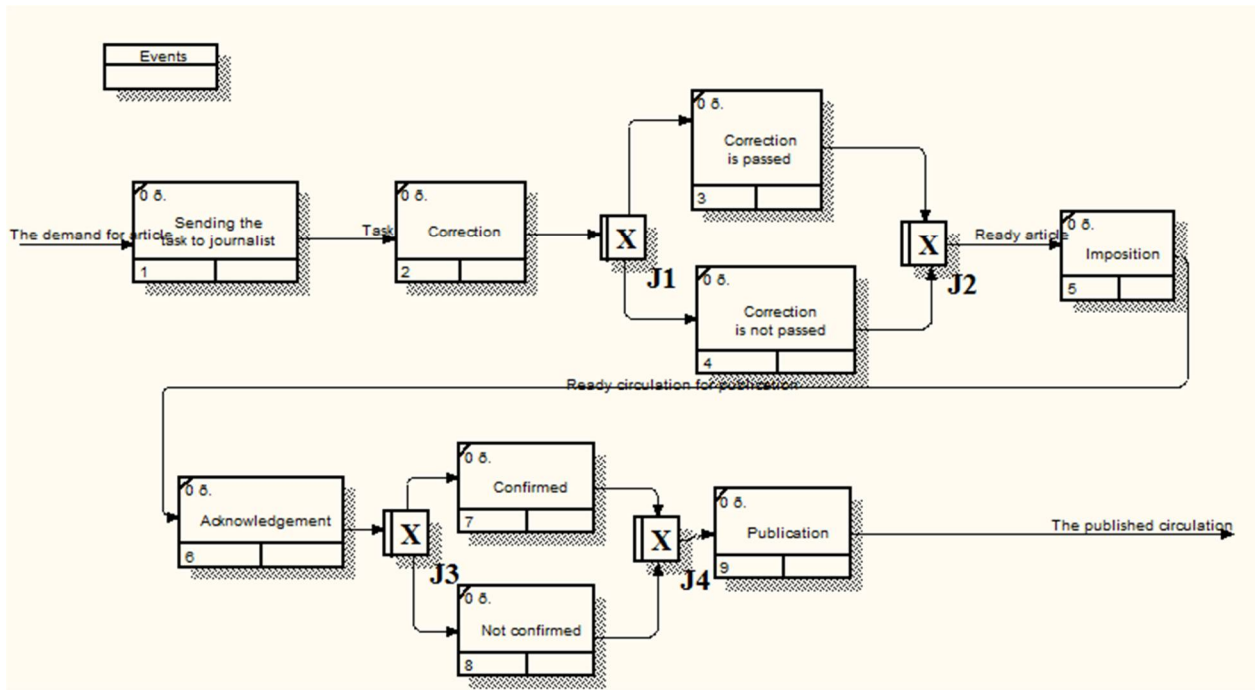


Model IDEF0 shows how to work the system, the main process. The IDEF0 Functional Modeling method is designed to model the decisions, actions, and activities of an organization or system. Inputs are shown as arrows entering the left side of the activity box while output are shown as exiting arrows on the right side of the box. Controls are displayed as arrows entering the top of the box and mechanisms are displayed as arrows entering from the bottom of the box. Inputs, Controls, Outputs, and Mechanisms are all referred to as concepts.

### **Decomposition of model IDEF0.**

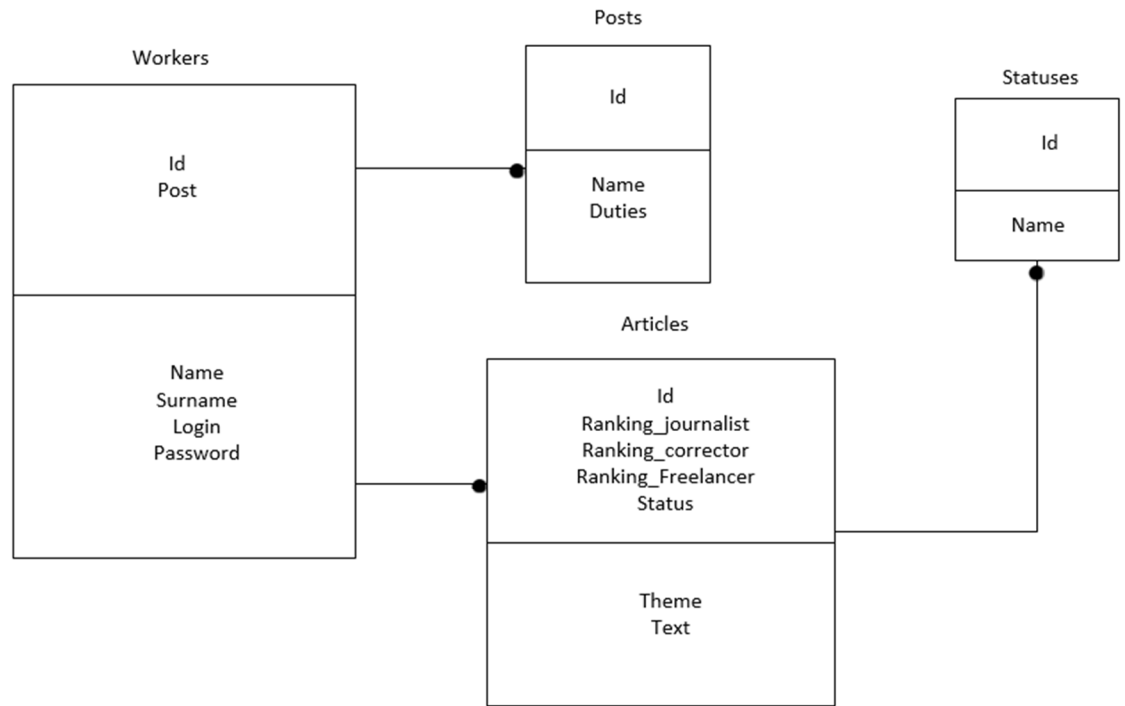


### IDEF3.



The IDEF3 Process Description Capture Method provides a mechanism for collecting and documenting processes. IDEF3 captures precedence and causality relations between situations and events in a form natural to domain experts by providing a structured method for expressing knowledge about how a system, process, or organization works.

### IDEF1X



[Integration Definition](#) for Information Modeling (IDEF1X) is a [data modeling language](#) for the development of [semantic data models](#). IDEF1X is used to produce a graphical [information model](#), which represents the structure and [semantics](#) of [information](#) within an environment or [system](#).

Definition of diagram IDEF1X:

Table **Workers** means the workers of electronic editorial. For example:

Id – 1

Post – journalist

Name – John

Surname – Smith

Login – john\_smith

Password – (12345) it will be given as \*\*\*\*\*.

Table **Posts** contains information about posts in editorial. Example:

Id – 1

Name – journalist

Duties – write articles.

Table **Articles** are all articles, which have been written in this editorial.

Example:

Id – 1

Ranking\_journalist – connection by id with table “Worker”

Ranking\_corrector – connection by id with table “Worker”

Ranking\_freelancer – connection by id with table “Worker”

Status – connection by id with table “Statuses”

Theme – “Some theme for article.”

Text – “The article.”

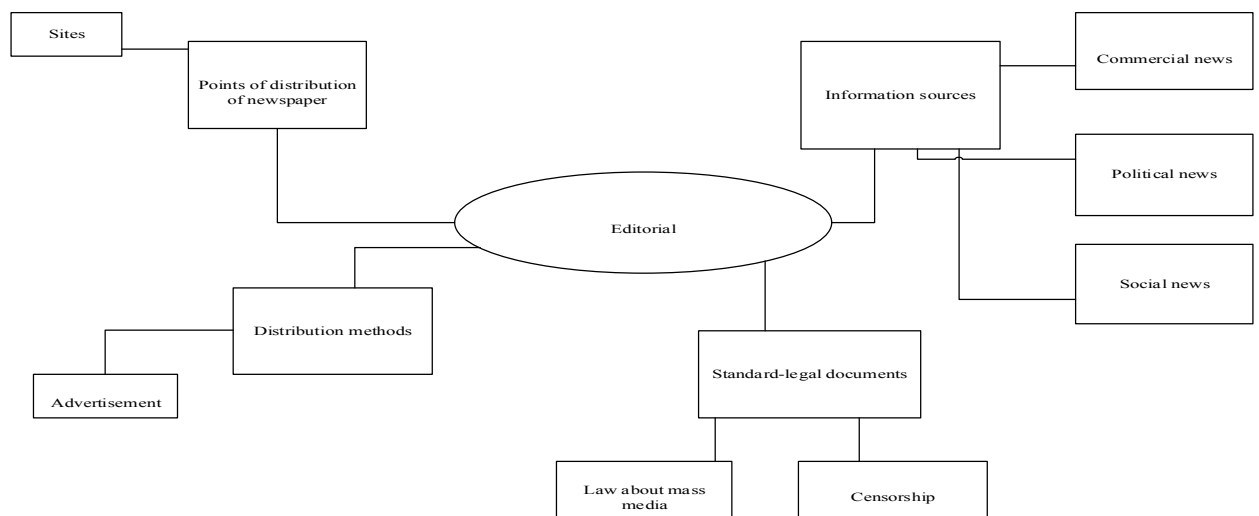
Table **Statuses** includes information about the status of an each article (confirmed or not). Example:

Id – 1

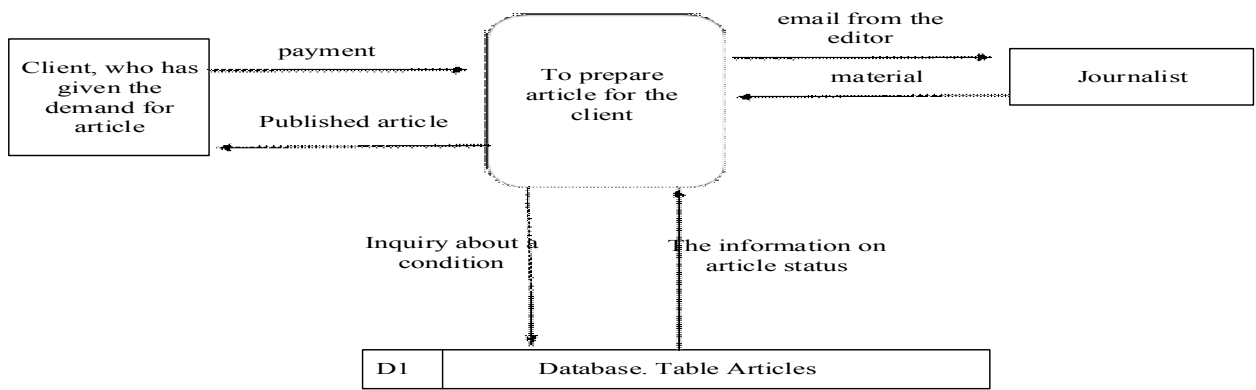
Name – confirmed.

### DFD diagram.

The context diagram.



Data flow diagram (DFD).



***Program Description***

The program is written in Net Beans, language Java. Design is created in html and css. The program is fully consistent with the algorithm taking into account the exceptions related to user error.

***The result of the program***

The first version of my software supports only English language and I am planning to develop language module to support other languages.

Sign up form.



When journalist enter to system, he will see this form.

**Details for Manuscript Number: Unassigned**  
**"Correlation of Research Paper Title Length to Validity of Research Paper"**

[Additional Information](#) [Abstract](#) [Manuscript Notes](#) [Editors](#) [Reviewers](#) [Alternate Reviewers](#) [Reviewers Proposed by Editors](#)

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**onal Information** [Top](#)

ion	Response
tem newsworthy?	Yes, it would be of interest to news organizations.

*Interface view of created software*

In conclusion, it can be argued that the use of this information system allows automating works in editorial and make journalists work easier. This system may be included in the inner systems editorial in the form of additional modules. Various functionality can be added to the system. To layout, the system developer should talk with workers of editorial. Because they can add or delete some functions to the information system. Then it will be real project.

**REFERENCES:**

1. Larichev O.I. Theory and methods of solutions. – M.: Logos, 2000.
2. Litvak B.G. Development of management solutions. – M.: Case, 2001.
3. E-book. Troelsen E. Programming Language C # 2010 and the .NET 4. 2010.
4. E-book. Albahari J. Albahari B. - C # 5.0 in a Nutshell, 5th Edition. 2012.

## ONLINE EDUCATION FOR CHILDREN

*Ch.B. Abduqayumova, N.J. Asretdinova, N.Sh. Nasirova, N.M. Litvinova*

*Summary.* The following paper is devoted to the “Funny English” - a free educational website for cheerful children aged 5 to 12 years, English language learners. Site offers a variety of online games for memorizing grammar rules and vocabulary development, songs, stories and poems in the English language, video and a variety of interactive exercises and activities that make learning English a pleasure.

**Key words:** online education, web site, IT, sense organs, learning pyramid, subsystem “Funny English”, teaching systems.

Nowadays we live in century of information technologies. That is why every day we must improve our self. Because, there are many services of information technologies that we use everywhere and every time, for example mobile phones, internet etc. We cannot imagine our life without technologies of IT.

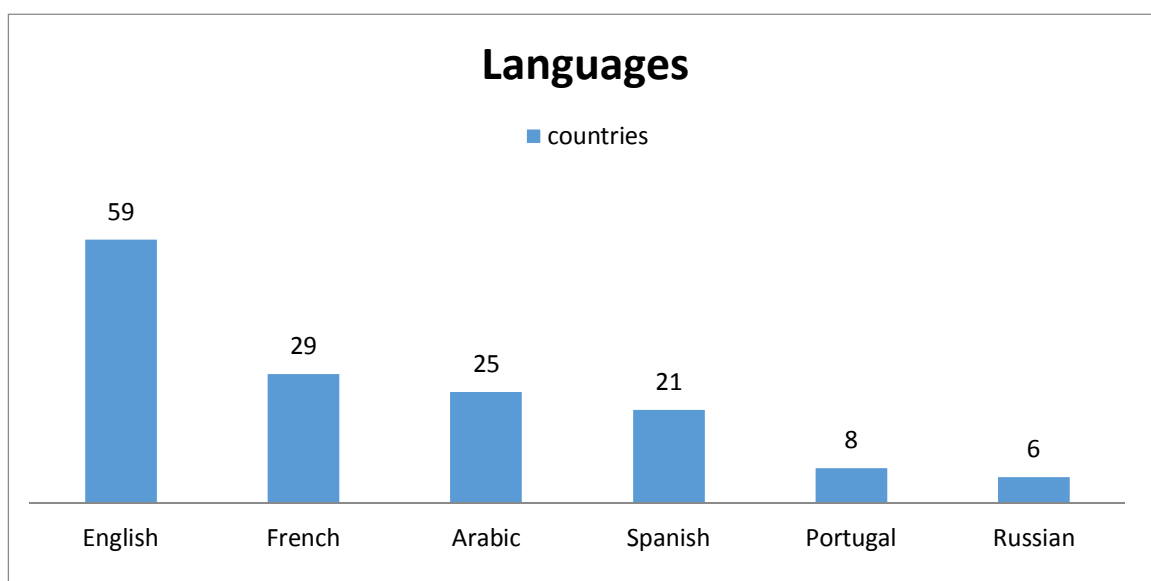
Improving of information technologies leads to appear information in different languages. To understand all this information is needed knowing languages. We know there are many languages all over the world. For example, this diagram shows us how rich is world with languages, and especially English is in the center of languages. That is why English is very useful thing in reaching aims in IT. That is why growing generation must know this language and modern technologies to use it in future and progress them self.

All the kids are very mobile and inquisitive, they are open to new knowledge and absorb everything they are taught. That is why the teaching of English is desirable to begin in early childhood.

Today, foreign languages, children begin to learn as early as elementary school, sometimes even in the garden. The main thing - lay interest in the subject. Then the child would be happy to engage in the classroom. Learn English child can



have from the moment when he is fluent in the native language, with three years. In addition, to six years in possession of the basic skills of reading and writing.

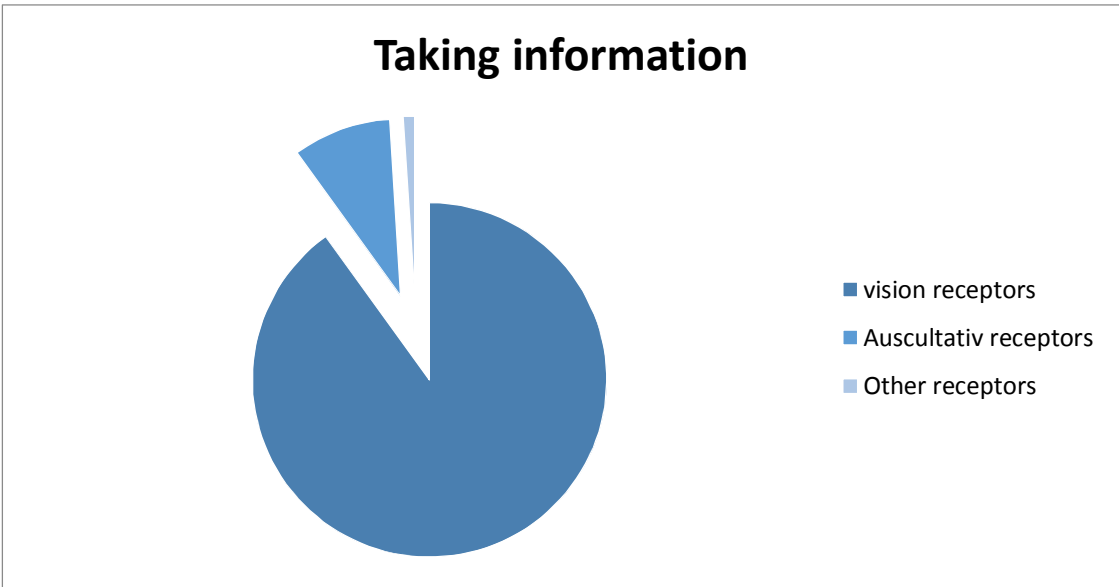


To learn all these can be used modern styles of teaching and interactive games to make easy learning processes.

However, it is difficult to find useful web site to children in Uzbek language. We thought about this problem and decided to make easy this actually question. We made web site “Funny English” in these aims.

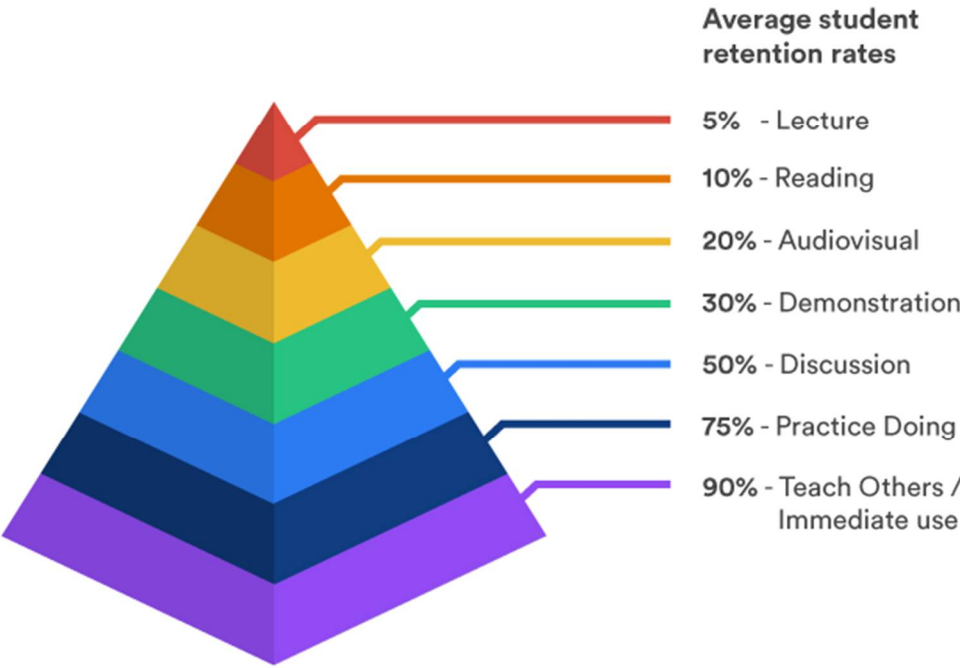
Therefore, our web site has different parts for different levels, and give information in different focuses. Our site rich with interesting information and facts in different forms, which make easy taking and saving information. We can use this information in different situations in the future.

In addition, web site had audio, video information and interesting brain game.



How in this diagram is showed what not only listening or visual learning can give good results. Communications of visual learning and listening can give perfect results, because you are using your sense organs together.

## Learning Pyramid



Therefore, from a lecture person learns only 5% of the information. Even independent reading gives the best effect - 10% learned knowledge. That is why well-constructed English lesson so little resemblance to the usual lecture: the teacher in the classroom tends to talk a little, allowing more students to talk and thereby practice the language.

Explain new material, whether it be language or grammar, best by visual material (diagrams, pictures) - so 20% of the material is stored. Even better results demonstrate video or moving images (e.g. online) - in this case, the pupil is able to immediately remember 30% of the new information. After that, it is necessary to work out new material, for example, discuss the group to ask questions - so be remembered for 50% of the information. Then be sure to practice in the form of oral and written exercises, during which stored 75% new.

Finally, the most effective training method that allows you to fully master the topic, new knowledge, language - is the explanation of the material to someone else. Teaching others, we learn 90% of the information. That is why teachers encourage students to talk to those, who have learned the subject worse strive for more, and those who understand the material better taught lagging and thus secured his knowledge firmly and forever.

Leets in traduce you with several interesting facts which you can find in our web site in the chapter about interesting facts.

These were information about our web site. We are sure that we can develop interests not to only our site and to IT and the useful using these in on modern world. Excite with over brain web site.

## **DEVELOPMENT OF WEB BROWSER “ZAMIN”**

*S.R Azimov, N. Atashikova*

**Summary:** This web-browser software developed to make comfort ability for national internet users. Software product developed by C++ **Builder 6** program shell.

**Keywords:** web browser, hypertext, internet and network.

Today, web browsers one of the most used software products in community.

Web browser — English word means, “to look web”, “to check web”. The word “Web”- is the acronym of “World Wide Web”.

Web browser let users loading, analyze, show web pages and proceed to other web pages in the World Wide Web. Web browser use HTTP-Hyper Text Transfer Protocol for loading web page and send information to web pages. Most browsers use FTP – File Transfer Protocol: it prints file list as a web page.

Web browser shows page as an understandable web page, allocate picture, text, video, voice and audio information and animations in the web page according to browser rules (according to colors, size and type).

Besides that, browser send all your information that, you inputted to browser, proceed to other web page and use JavaScript codes.

### **Brief history of web browsers**

The first most common browser was Mosaic browser. Then Netscape Navigator was the leader in the browsers market. In 1995 Microsoft company announced Internet Explorer browser with Windows 95 OS. It was the compatible competitor for Netscape Navigator and after the many years Netscape Navigator did not use. Internet Explorer was the most common used browser with 95% percentage in the world. After the presenting source code of Netscape Navigator to the community, Mozilla and Mozilla Firefox browsers are developed by its source code. Nowadays, there are many useful browsers in the world.

Nowadays, most internet users in our country are using software products especially in English and Russian languages. Its problem for people who do not knows English and Russian languages; they cannot use all opportunities of browsers.

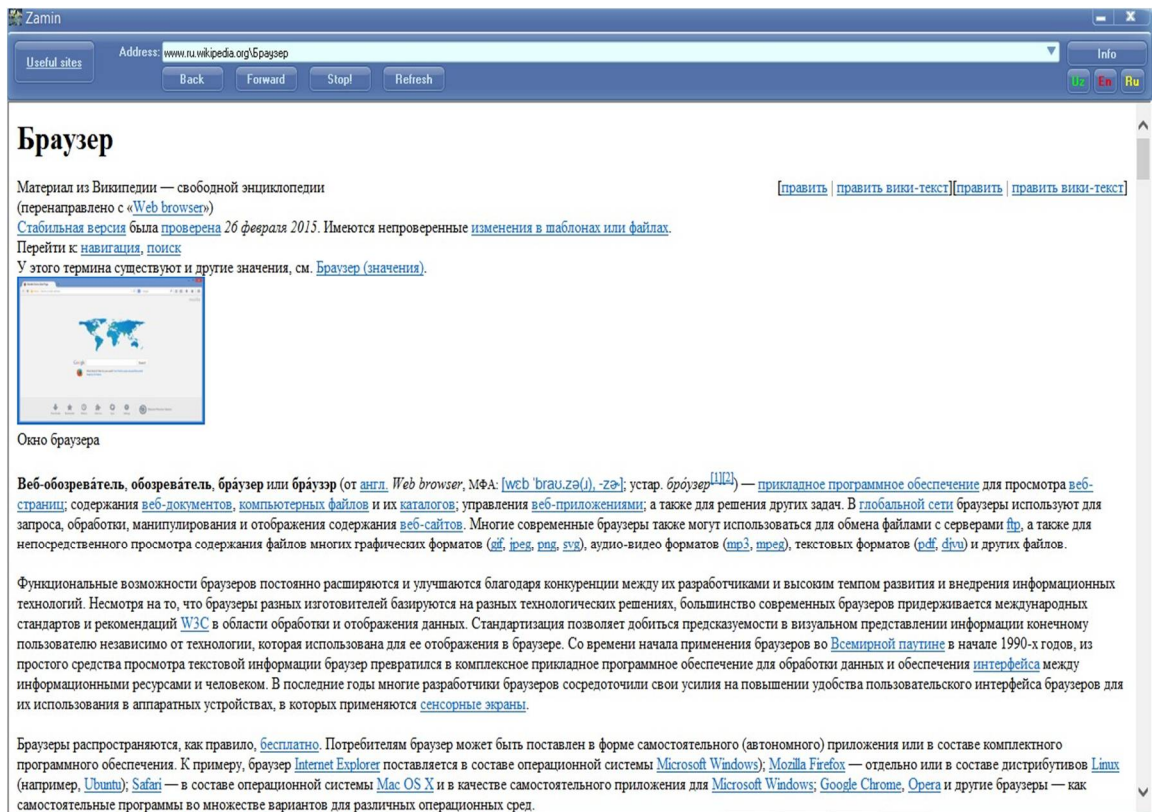


Figure 1. English interface of web browser “Zamin”



Figure 2. Uzbek interface of web browser “Zamin”

Web browser “Zamin” developed to improve all limitations in these criteria. One of the most comfortable of this browser is three-language interface, you can

use browser in the three languages: Uzbek, English and Russian. In the *Figure 1,2* you can use interface in Uzbek and English languages of web browser “Zamin”.

This browser help to improve their global network skills of our national internet users.

#### **INTERNET RESOURCES:**

1. [www.ki.uz](http://www.ki.uz)
2. [www.wikipedia.org](http://www.wikipedia.org)
3. [www.cyberforum.ru](http://www.cyberforum.ru)
4. [www.builder.com](http://www.builder.com)
5. [www.embarcadero.com](http://www.embarcadero.com)
6. [www.cppbuilder.ru](http://www.cppbuilder.ru)

#### **MAKING 8x8x8 LED CUBE USING ARDUINO**

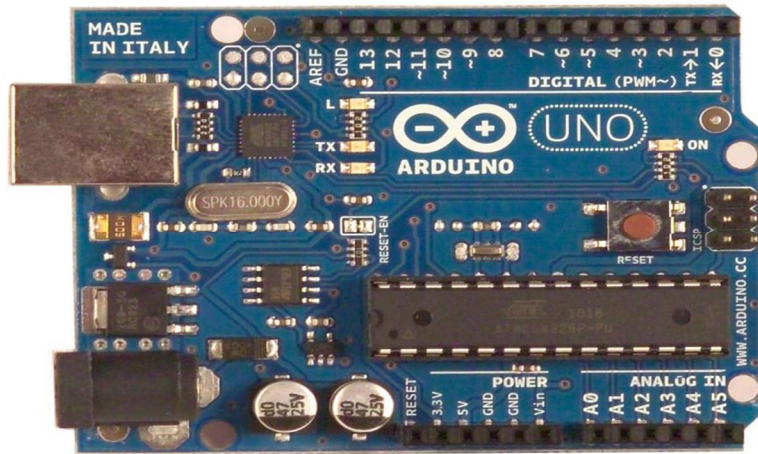
*I. Alyabev, D. Radjabova*

***Summary.** Making LED cube using Arduino, making LED array and shift register board, developing software to use LED cube as an output device*

***Key words:** Arduino, LED cube, hardware, shift register.*

Today making some hardware projects becomes more popular. There are many different hardware platforms to develop something interesting and impressive. One of them is Arduino. As stated on the official website, Arduino is a tool for making computers that can sense and control more of the physical world than your desktop computer. It is an open-source physical computing platform based on a simple microcontroller board, and a development environment for writing software for the board. Arduino can be used to develop interactive objects, taking inputs from a variety of switches or sensors, and controlling a variety of lights, motors, and other physical outputs. Arduino projects can be stand-alone, or they can communicate with software running on your computer (e.g. Flash,

Processing, MaxMSP.) The boards can be assembled by hand or purchased preassembled; the open-source IDE can be downloaded free.



I used Arduino to make the LED cube. Therefore, this article is about how to make 8x8x8 LED cube with your own hands.

From the beginning of any project, it is necessary to think about what you exactly want to make. It is very important, because you must know what components are needed. Therefore, in this project there are:

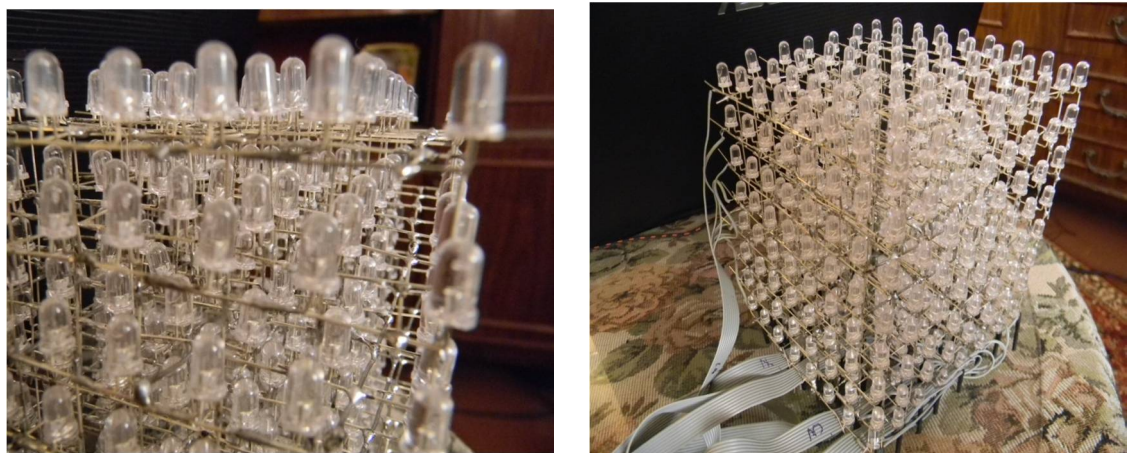
1. Three-dimensional LED array
2. Hardware layer, which connects, LED array and Arduino board.
3. Arduino board
4. Software

Eightx8x8 LED cube requires 512 LEDs. Here is a problem about how to manage them all at the same time, because 512 is too many. The solution is to connect positive contacts of LEDs vertically (every 8) and connect negative contacts horizontally (every 64). In this way, we have 72 contacts against 512.

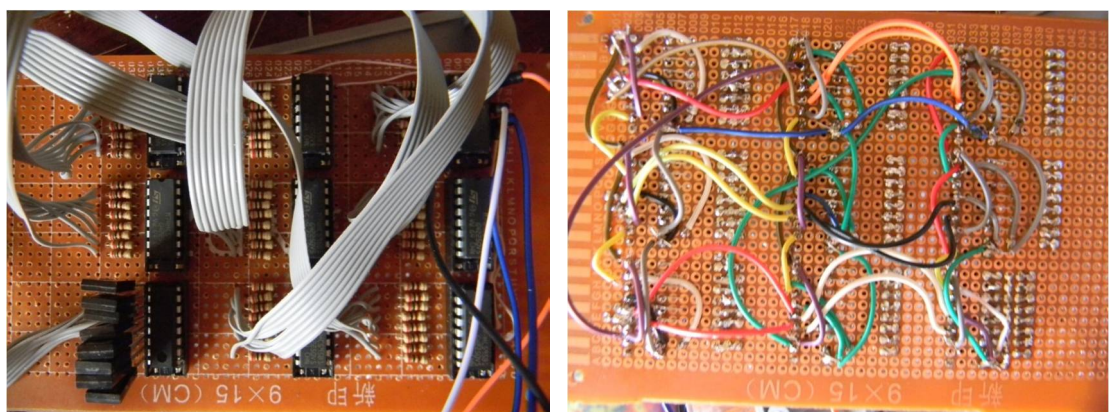


What does this all mean? To turn on some LED we just use one of vertical (positive) lines and one of horizontal levels (negative). So, 72 is much better than 512, but on my Arduino board there are only 13 pins. The solution is to make a hardware layer, which connects LED cube and Arduino board. This layer should consist of shift registers connected to each other. In this way, we need just 3 pins to send data to the LED cube and 2 pins for power supply.

The first thing I did was making the LED cube:



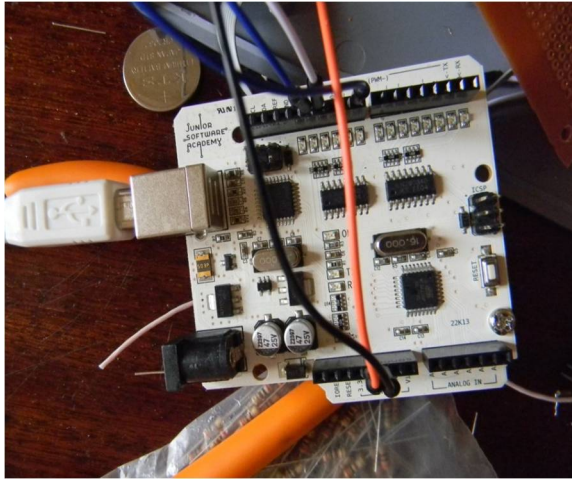
The second thing I did was making hardware layer, which connects LED array and Arduino board:



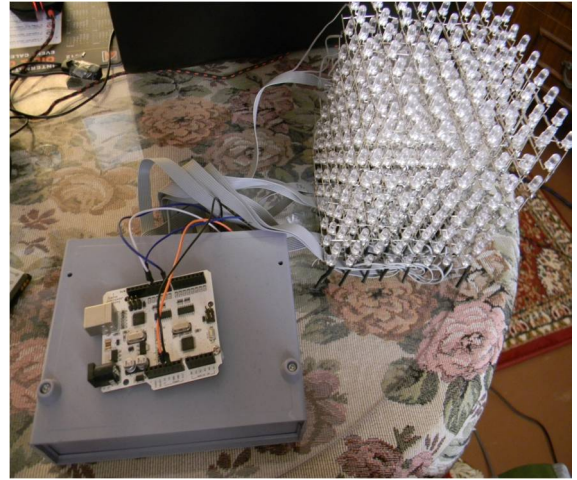
To make shift register with 72 outputs I used 9 [74HC595](#) micro-schemes, 64 resistors between register outputs and 64 positive 'lines', 8 transistors to manage negative levels and ribbon cables to connect the cube to the shift register.



On the following photo, you can see how shift register is connected to the Arduino board.



Now it is done.



Running a test program.



The whole structure works when plugged in the USB port of the computer and requires no additional power supply.

The last and the most difficult part is writing the software. To output something simple, it we have to write a difficult code.

In conclusion, I want to say that it was very interesting to do this project. It also was a good experience in solving some problems and to fixing some mistakes. I think when you do something difficult, next time it is not so difficult for you. In addition, your horizons expand with every completed project.

## **THE CREATING SYSTEM FOR CONTROLLING THE FUNCTIONS OF SMART HOUSE**

***I.U. Anvarov, E.Sh. Nazirova, S.O. Ergasheva***

***Summary.** The following article is devoted to solve this problem. It helps to improve the comfort of home by personal demand. In addition, the project of the author is directed to save time and, most importantly, money of users. Individual approach to each home improves comfort and provides security.*

***Key words:** Smart house, automation, heating system, Arduino Mega, DHT11, automatic window.*

Besides the above-mentioned, this area of the market is growing very fast. Companies such as Siemens, LG and Samsung have already represented their solutions in this market.

Many companies build systems for smart homes in the world. Each of them offers its solutions and occupies a certain market share. In Uzbekistan, the services of this kind are not yet developed to the level of foreign markets. In spite of this, the companies "SMART HOME", "Setko" and others offer their solution for customers. However, as they mainly offer ready-made solutions developed abroad,

their products are very expensive. By law, the high price does not mean good quality, as the price can grow forever, and the quality is not. My project gives the same functions, but at a reasonable price.

Smart house is a dwelling house in a modern way, designed for people with the aid of automation and high-tech devices. Under the "smart" house, you should understand the system that provides comfort (including security), and resources for all users. In the simplest case, it should be able to recognize the specific situation-taking place in the house, and appropriately respond to them: one of the systems can control the behavior of others according to the prearranged algorithms. In addition, automation of several subsystems is provided a synergistic effect for the entire hardware-software complex.

It is easier to understand if we imagine, for example, that the heating system will never be able to work against the air-conditioning system. And heating is carried out not only for the weather, but also taking into account a number of other factors: from wind power, according to the prediction, the time of day (at night comfortable less temperature).

We can assume that this is the most progressive concept of interaction between people (users) with living space, when in automatic mode in accordance with the external and internal conditions are set and monitored modes of operation of all engineering systems and appliances.

In this case, users need to use multiple remotes while watching TV, and dozens of switches for lighting control, the individual blocks in the management of ventilation and heating systems, video surveillance systems and security alarm systems, motorized gates, and so on.

Arduino Mega is used for information processing.



Arduino is a trademark of hardware and software to build a simple automation systems and robotics. The software part consists of free software shell (IDE) for writing programs, compilation and programming equipment. The hardware part is a set of mounted printed circuit boards that are sold as the official manufacturer and third party vendors. An open system architecture allows you to freely copy or extend the product line of Arduino. Arduino can be used to create stand-alone objects of automation, and to connect to the software on the PC via standard wired and wireless interfaces. The Arduino Mega 2560 is a microcontroller board based on the ATmega2560 (datasheet). It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button DHT11 is used to control the temperature and humidity. The price is not higher than 5,000 soms. Remembering positive temperature coefficient humidity, the system will automatically turn on and turn off air conditioners, heaters and humidifiers. The light sensors, the system will automatically turn on and off lights at a specified time. It does not exceed 4000 sum at value. Motion sensors will also automatically turn on and off lights if after the end of the time, they will lock the movement. It does not exceed 8000 sum at value.

Automatic window will close if it is left without closing when the door was closed. Sensors on the windows will also alert you to attempt to open, which increases security. It does not exceed 8000 sum at value. Smart socket will disable or enable devices home appliances. They will be connected in two ways:

1. On Wi-Fi. (If you want to install the system after repair)
2. On the wire. (If you have the opportunity to spend a wire to repair) It does not exceed 50 000 sums at value.

Automatic blinds can control the lighting in the room. They will be made in the basis of the servo drive and stepper motor. They will be automatically on the amount of light and time of day to change the angles of the louvers. It does not exceed 100 000 sums at value.

Technology RFID UH-RS232 gateway for the machine will be opened when your car will be closer to the gate. For the price it does not exceed 800 000 sums. Program for Android will be created for each project individually, which ensures the high performance of the whole system. Using the program, you can:

1. To open and close windows, blinds, gates.
2. To turn on and off appliances and lighting.
3. To change the system settings to adjust the operation of the complex.

As a result, with the help of Android applications that can be run in a mobile device (in particular, note3), we get the possibility of remote monitoring of the following parameters: status lights, indicators, sensors, cameras, outdoor surveillance. The application also allows you to control the lighting (both external groups and lamps inside the building), turn the camera and sensors. In the proposed material, we have tried to share the experience gained in the implementation of the project on construction of energy-efficient and intelligent home. This project is coming to an end, the finishing stage and commissioning. In conclusion, I would like to share our plans for development. The development we see in the following directions:

1. To make the serial controller for smart home as cheap and open (Open Source Hard/Open Source Soft). Now negotiating with the Korean manufacturers are working out several versions (Ethernet/WIFI). According to our plan, the cost for the end user should not exceed 1000000 sum for version with Ethernet.

2. We are developing a touch panel screen, sensors and a microphone.

3. We plan to produce based on this controller ready-made solutions for specific tasks. For example, the controller warm floor will contain relays, 3-

temperature sensor, powered by 220V and Ethernet module (optional). The consumer will receive a ready-made solution for your problem. Similarly, dimming the light.

4. Plan under "one roof" to gather like-minded partners, where jointly offered to participate in the exchange of ideas on the development of control systems for residential and industrial infrastructure, aimed at safety, efficiency and ease of use.

#### **INTERNET RESOURCES:**

1. [www.cxem.net](http://www.cxem.net)
2. [www.arduino.cc](http://www.arduino.cc)
3. [www.robocraft.ru](http://www.robocraft.ru)

#### **USE AND GROWTH OF ICT**

***S.D. Artikbayev, S.O. Ergasheva***

***Summary.*** *In this article, several problems of ICT and its financial state are discussed. In addition, the relationship between ICT utilization and development rate of GDP are concerned.*

***Key words:*** *ICT, PC, internet, PDA, TV, GDP, GMM, financial development.*

Nowadays, the ICT has turned into a genuine piece of economy. All organizations and buyers use PCs and Internet association for monetary purposes, for example, giving purchasers a more expanded and tweaked items, enhancing item quality, and offering merchandise and administrations. Clearly, the augmentation of ICT and its impacts on financial development in both created and creating nations has expanded quickly amid the most recent two decades. In any case, nation information on PC, PDA, and Internet clients delineate diverse ICT dispersion rates crosswise over nations and districts, ICT use pointers outline an expanding pattern, regardless of the late world monetary emergency. Case in point, the unfaltering development of the quantity of portable cell memberships is recognizable, arriving at 67 every 100 occupants before the end of 2009 all around.

This affirms that shoppers are ready to keep spending piece of their discretionary cash flow on portable administrations - even on occasion of money related imperatives.

What's more, the resurgence of profit amid the late 1990s and the mid-2000s is a subject that has pulled in numerous development economists. ICT is the current image of the mechanical insurgency and is known as the key variable driving monetary development in the modern culture. For measuring the commitment of ICT to monetary development, the most imperative issue is in regards to the detail of ICT.

ICT characterizes as an idea that incorporate PCs and other data gear and additionally PC programming, that covers PCs, fringe supplies and other data related office gear (printers, money registers, and number crunchers), correspondences supplies, and instruments.

Indeed, ICT is the mix of hardware, information transfers, programming, systems, and decentralized PC work stations, and the reconciliation of data media, all of which effect firms, commercial enterprises, and the economy overall. ICT is included a mixed bag of "correspondence supplies" which incorporates radio, TV, and correspondence gear and programming. Accordingly, ICT speculation incorporates "interests in both PC and information transfers, and additionally related equipment, programming and administrations".

In this article, we might want to look at the relationship between ICT utilization and development rate of GDP every capita in 159 nations. Albeit numerous analysts have given observational confirmations to the relationship between ICT speculation and monetary development, consider on the effect of ICT use on financial development is still an unexplored zone. Consequently, this article would fill the writing hole on the impact of ICT use by applying the board of 159 nations over the period 2000–2009.

The association of the paper is as per the following: The following segment is an audit of applicable studies on the effect ICT on Economic development.

Thereafter approach and information will be exhibited which takes after by the exact discoveries and examination. The last area closes the article with a couple of issues on arrangement ramifications.

In Europe, Schreyer investigates the effect of ICT capital and demonstrates that the commitment of ICT to monetary development of four European nations, the United States, Canada, and Japan amid 1990–1996 is around 0.17–0.29%. Daveri grows Schreyer's study to 13 European and five others and demonstrates a much higher commitment of ICT for every nation. The two reason that expansive European nations are a long ways behind the US around there. Applying wide information set, Van Ark at all. Additionally affirm that the increases from ICT capital are higher in the US than in Europe.

For the most part, we can partition the exact confirmation of the effect of ICT on financial development to two classes in view of the approach utilized as a part of these literary works. The main is studies utilizing the development bookkeeping method, which weights development in inputs by their offer in the estimation of yield and express the commitment of ICT to financial development in rate point. These studies contain Jorgenson and Stiroh, Oliner and Sichel and Jorgenson, for the United States; Jalava and Pohjola for Finland; Oulton for the United Kingdom; Colecchia and Schreyer, Daveri, Van Ark et al. furthermore Timmer et al. for Europe; Jorgenson for the gathering of seven (G7) nations; Jorgenson and Motohashi for Japan; and Jorgenson and Vu for 110 nations.

Nevertheless, the experimental consequences of the past studies are to a degree delicate and rely on upon information period particulars, econometric strategies, and the prevailing effect of ICT as a generation include on financial development, and benefit is certain.

Obviously, the majority of the written works in the field of ICT impact on monetary development and gainfulness, focus on the ICT venture overall and confirmation on the effect of ICT use on financial development and benefit is rare. Just a couple of studies examine the impact of ICT use on monetary execution



applying diverse intermediaries, for example, phone infiltration evaluated by number of phones every 100 persons and density characterized as the quantity of settled line and cell telephone supporters every 100 persons. No study to date has utilized ICT utilization record exhibited by ITU to assess the effect of ICT use on monetary development.

In this manner, the primary theory of this paper is that the impacts of ICT utilization (as measured by the quantity of web clients, settled broadband web supporters and the quantity of portable membership every 100 tenants) on financial development is certain and huge. We present results taking into account the Generalized Method of Moments (GMM) estimator. Joining information for the 159 nations, we find that ICT utilization has a positive effect on yield development.

This paper focused on investigating the impact of ICT utilization record on monetary development. The outcomes demonstrate that ICT utilization has a noteworthy impact on the monetary development of these nations. The coefficient measuring the impact of the ICT use on financial development was certain, demonstrating that ICT influence monetary development of the 159 example nations in a positive manner. Besides, in high pay regions ICT utilization file has the strongest impact on genuine GDP every capita among the others while this impact is the least in nations with low level of pay. In addition, the execution of the both higher center and lower center wage aggregates in the impact of ICT utilization record is to some degree slacking. Along these lines, these nations can enhance their general GDP development with strategies went for expanding ICT utilization.

Subsequently, ICT assumes a fundamental part as a mean for financial development. Thusly, it appears essential for all nations to build their ICT utilization list through expanding the quantity of web clients, settled broadband web supporters and the quantity of versatile membership every 100 occupants keeping in mind the end goal to help financial development. It is likewise vital for

the administrations to furnish the public with data, exceptional structures and instruct individuals keeping in mind the end goal to utilize ICT proficiently. The significant exploration limit of this study was the inability to gather information for a more drawn out time. Thusly future examination for a more drawn out time compass would reveal more insight in the appraisal of the relationship between ICT use and monetary development.

### **REFERENCES:**

1. International Telecommunication Union (2010). Measuring the Information Society: The ICT Development Index. Place des Nations CH-1211, Geneva, Switzerland.
2. Pohjola M (2002). The New Economy: Facts, Impacts and Policies. Information Economics and Policy 14 (2) 133–144.
3. Oliner SD, Sichel DE (1994). Computers and Output Growth Revisited: How Big is the Puzzle? Brookings Papers on Economic Activity 2: P. 273–334
4. Sichel DE (1997). The Computer Revolution: An Economic Perspective. Brookings Institution Press.
5. Granville B, Leonard C, Manning J (2000). Information technology and developing countries: Potential and obstacles. – Tokyo Club Meeting, Munich, Germany. – P. 19–20.

### **CAPABILITIES OF "CLOUD COMPUTING" TECHNOLOGY**

*A. Akhatov, D. Rajabova*

*Summary.* Today relevant and multifaceted use of "cloud computing" as in science, education and many other spheres of human activity. "Cloud computing" - necessary, popular information services that are widely used in everyday life.

**Key words:** *cloud technology, flexibility, reliability, cloud services, confidentiality.*

Today, the Internet – technology became available and occupies an important position in almost all areas of human activity, including education.

Characteristics of modern hardware change and improve almost every day, and every school is unlikely to be able to update their technical base in accordance with the rapidly changing computing power of modern computers and provide training process latest in computer technology. The same situation with the software, implying considerable material costs of maintaining the appropriate information services to students.

As the experience of developed foreign countries, the perfect solution is the implementation of the above problems in the educational process "cloud computing." The term cloud computing began to be used in the computing world since 2008. Cloud services initially appeared mainly as free hosting of postal services. Numerous other tools of cloud computing for education were not used due to lack of information about them and the lack of practical skills of their use for educational purposes. It is only relatively recently Student Community and dignity of teachers has begun to evaluate innovative IT-applications. The best way to prepare students to work with the latest IT-technology is the introduction of these technologies in the educational process.

***Advantages of cloud services:***

**Availability**

- clouds are accessible to all, from any point where there is Internet access from any computer where there does. No need to purchase licensed software, and update its settings, you simply go to the service and use its services

**Low cost**

- Reduced maintenance costs of virtual infrastructure

- Payment of the actual use of resources, the user pays for the cloud actual use cloud computing power that allows him to effectively allocate their funds

- Use of clouds on loan allows users to reduce costs for the purchase of expensive equipment

- Development of hardware computing systems, and therefore reduce the cost of equipment

**flexibility** - unlimited computing resources (memory, CPU, disk), through the use of virtualization, the process of scaling and administration "clouds" become quite an easy task, as the "cloud" on their own can provide you with the resources you need, and you only pay for their actual use

**reliability** - reliability of "clouds", especially those in specially equipped data center is very high as these data centers have redundant power supplies, security, professionals, regular data backup, high bandwidth Internet, high resistance to DDOS attacks

**security** - the "cloud" services have a high security with due its maintenance, but neglect the effect can be completely the opposite.

#### ***Disadvantages of cloud services***

- permanent connection to the network - to receive access to the "cloud" need of constant connection to the Internet.

- software and its customization - there are restrictions on software that can be deployed on the "cloud" and provide it to the user. User software has limitations in the software used and sometimes is unable to adjust it to their own purposes.

- confidentiality - confidentiality of data stored on the public "cloud" is now causing a lot of controversy, but in most cases, experts agree that it is not recommended to store the most valuable documents on the public "cloud", as there is currently no technology that would guarantee 100% confidentiality of stored data.

- reliability - with regard to the reliability of the stored information, it is safe to say that if you lose the information stored in the "cloud", then you have lost it forever.

- security - the "cloud" itself is sufficiently robust system, but the penetration of an attacker gains access to a huge data store. Another shortcoming is the use of virtualization, which is used as a hypervisor kernel standard OS such as Linux, Windows and others.

- high cost of the equipment - to build their own clouds need to allocate significant financial resources, which is not beneficial to educational institutions.

In the educational process, including in the process of teaching computer science, the use of "cloud computing" comes with delay and still not widely used. Although modern children read about the "cloud technologies" and use some of them in his personal activities. However, the earlier teachers, teacher leaders begin to use cloud services in their work, the sooner they will be an effective tool for building individual learning paths, the better and more interesting, they can make the learning process.

Cloud technology - it is not only the future, this is largely already present. Indeed, in everyday life, we do not pay much attention to the real clouds, but it does not change the fact that they exist and its role in our lives.

### **REFERENCES:**

1. Krechetnikov C.G. Social network services in education / C.G. Krechetnikov, I.V. Krechetnikov / Pacific Naval Institute named S.O. Makarova. – [http://ido.tsu.ru/other\\_res/pdf/3\(39\)\\_45.pdf](http://ido.tsu.ru/other_res/pdf/3(39)_45.pdf)

2. Cloud services in education / Z.S. Seydametova, S.N. Seytvelieva / Crimean Engineering and Pedagogical University. - [http://ite.ksu.ks.ua/ru/webfm\\_send/211](http://ite.ksu.ks.ua/ru/webfm_send/211)

3. Patarakin E.D. Web 2.0 social services to assist the teacher. – M: intuit.ru, 2007.

**THE PROGRAM “THE GENERATOR OF PASSWORDS” ON THE BASIS OF THE IMPROVED ALGORITHM OF RECEIVING ANY NUMBERS WITHOUT REPETITION**

*A. Akhrorov, Kh. Sultanova*

*Summary: This work describes algorithms of receiving random numbers without repetition, scopes and the program based on this algorithm.*

*Keywords: algorithm, random numbers.*

We in our life very often meet accidents. We play the lotteries, different gambling's etc. Moreover, all this based on accidents. People thought up different ways, formulas, even devices for receiving a random number. In addition, all this is not simple so. People always needed accidents especially in programming area. What to check the program on working capacity and durability on different values, what as much as possible to provide safety of information and in other needs programmers needed random numbers.

In programming languages, there are different functions for receiving a random number. We will consider only a programming language C ++. In language C ++ function of receiving a random number is function "rand ()". It returns random numbers on a piece [0, 32535]. Not prosperity of function that at each start of the program returns identical sequences of random numbers. What to eliminate the problem it would be necessary to use at the beginning of the program function "strand (time (0))".

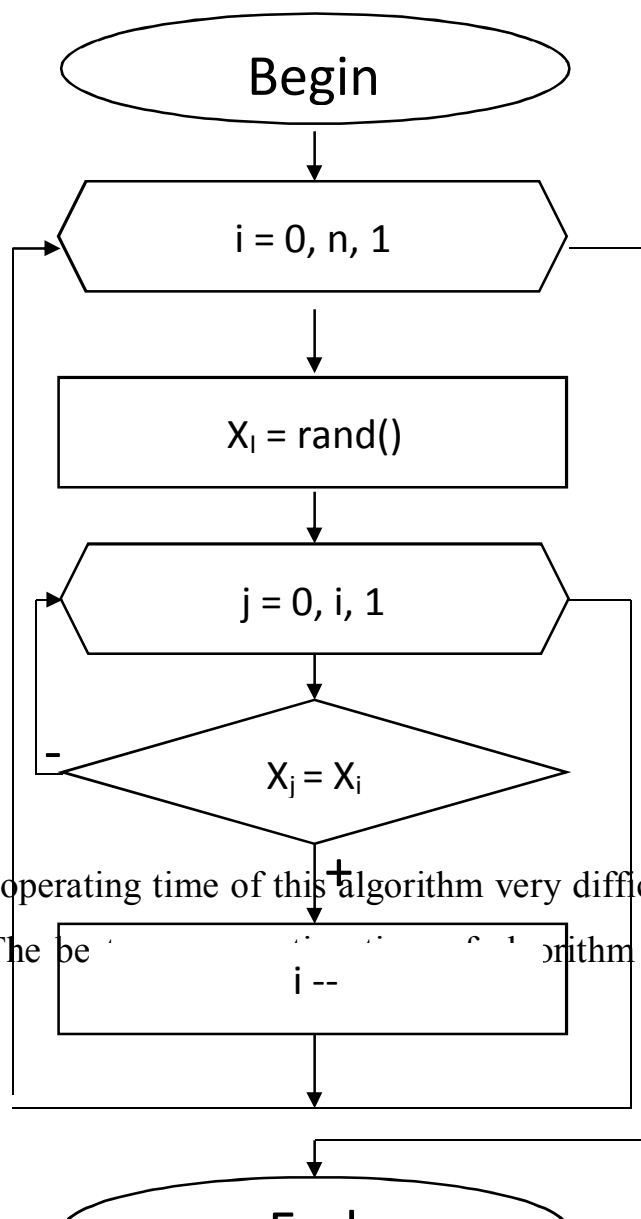
It establishes initial value of random numbers on current time. After that, we receive different sequences of random numbers at each start. However, there is time when repeated numbers will not be pertinent for any tasks. In addition, function "rand" can repeatedly return identical numbers several times. In a programming language C++ there is no standard function what to receive random numbers without repetition. In this case it is necessary to think up special algorithm that that we will consider further.

**Simple algorithm of receiving random numbers without repetition.**

Algorithm description:

1. One random number undertakes, is compared to the early-received numbers
2. If in earlier received numbers it does not exist that is passed to receiving the following number.
3. If exists it is passed to the first point.

Block scheme:



To estimate operating time of this algorithm very difficultly. Theoretically, it can be infinite. The best case of this algorithm it is equal. The worst

case cycling turns out. The best case operating time of algorithm is equal  $O(n) = \frac{n^2}{2}$ . The worst case cycling turns out.

*Example of a code of algorithm in language C ++.*

```
int main()
{
    int l;
    cin >> l;
    int *x = new int [l];
    for(int i = 0; i < l; i ++)
    {
        x[i] = (rand() + rand() + rand())%l;
        for(int j = 0; j < i; j ++)
            if(x[i] == x[j])
            {
                i--;
                continue;
            }
    }
}
```

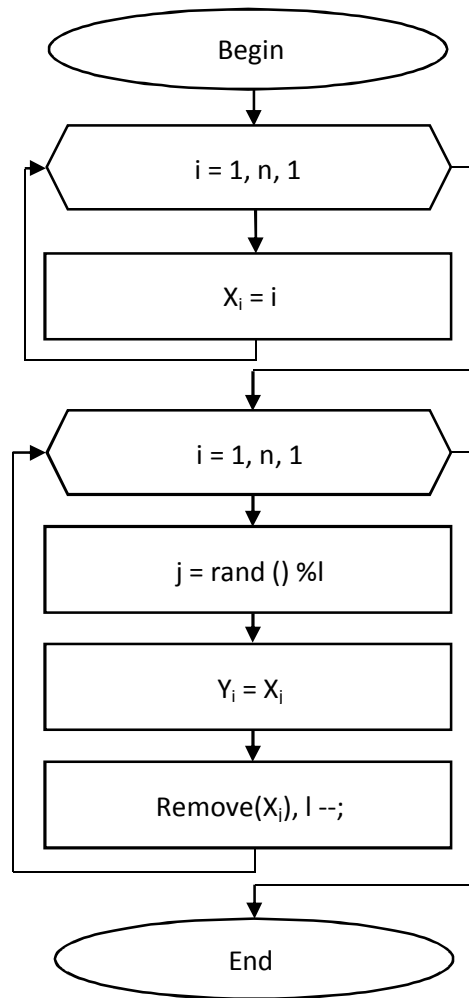
### **The improved algorithm of receiving random numbers without repetition**

Algorithm description:

1. The sequence of numbers  $x$  on a piece  $[start, end]$  (where  $[start, end]$  area of receiving any numbers) is made;
2. Any number of  $j$  on a piece  $[0, n)$  where  $n$  quantity of any numbers  $(end - start)$  undertakes;
3.  $X_j$  number will register in new sequence of  $Y$ ;
4. The  $j$ -th element is removed from sequence of the  $X$ -th;
5.  $n$  decreases to one;
6. Transition to point 2;

Block scheme:





Algorithm operating time the worst case it is equal  $O(n) = n + \frac{n^2}{2}$  the best case it is equal  $O(n) = 2 * n$ .

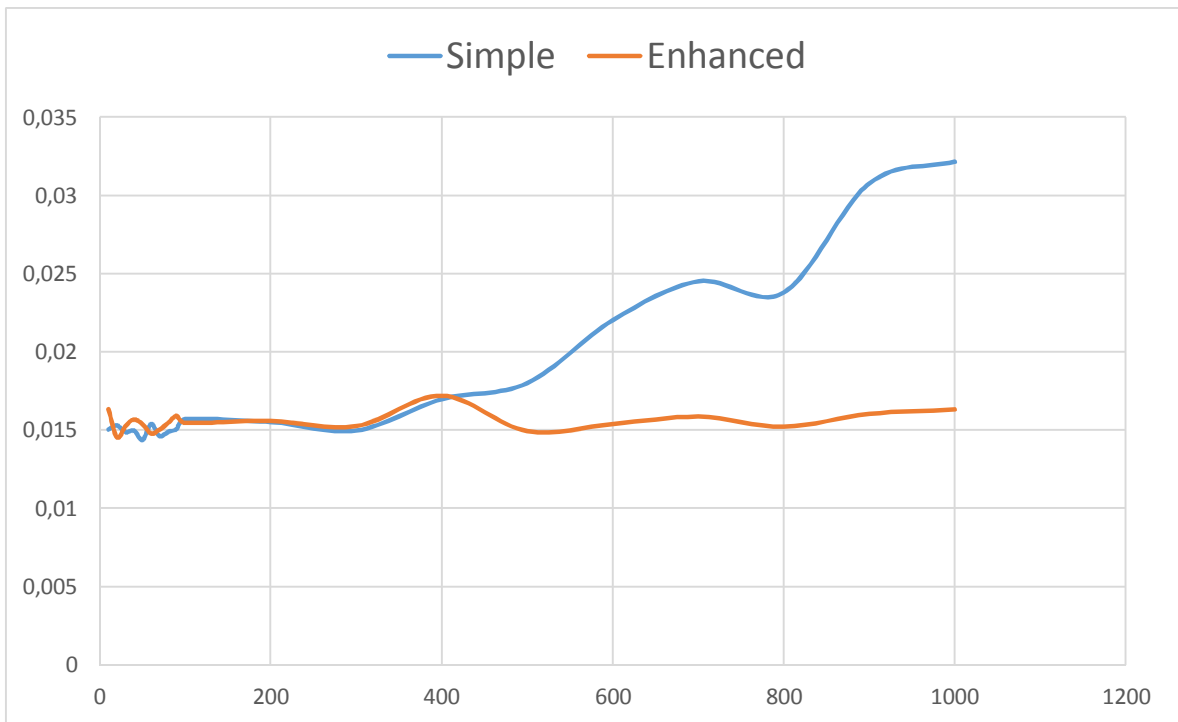
*Example of a code of algorithm in language C++:*

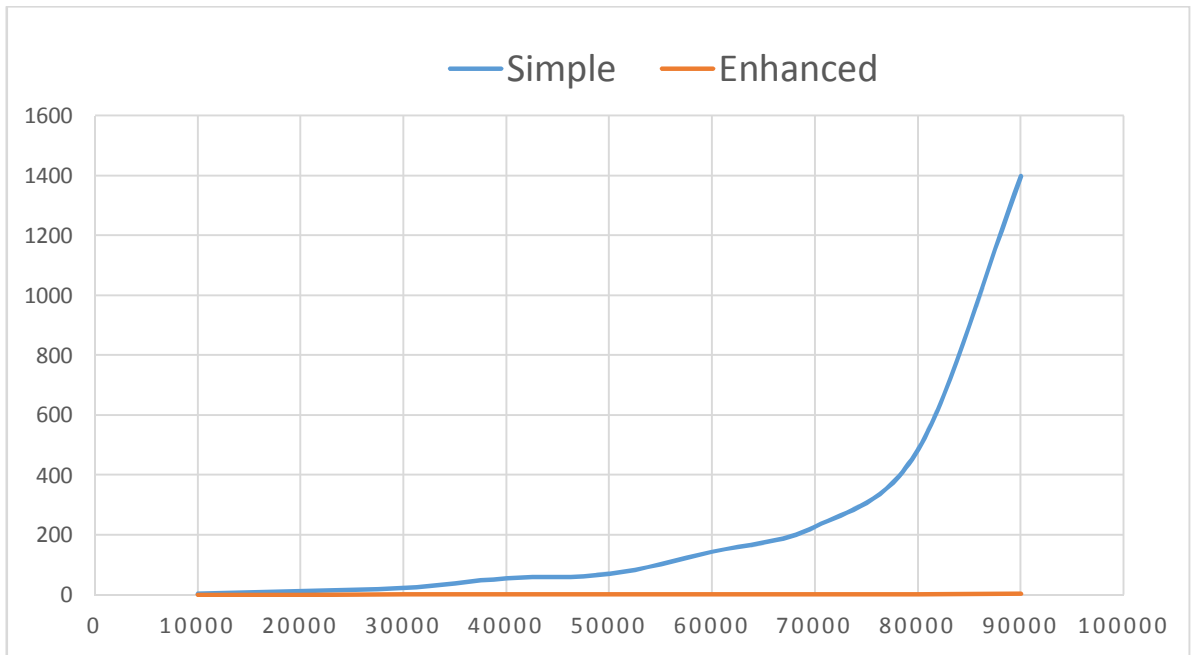
```

Void Randomizing (int start, int end, int *y)
{
  int l = end - start + 1;
  int *x = new int [l];
  for(int i = start, j = 0; i <= end; i ++, j ++)
    x[j] = i;
  for(int i = 0; i < l; i ++)
  {
    int k = (rand() + rand() + rand())%l;
  }
}
  
```

```
y[i] = x[k];  
l--;  
for(int j = k; j < l - 1; j ++)  
    x[j] = x[j+1];  
}  
delete []x;  
}
```

Comparison of two algorithms:





## Advantages and algorithm shortcomings

### Advantages:

1. Algorithm operating time always meets
2. The algorithm works much quicker.
3. It is possible to receive any numbers in any piece.

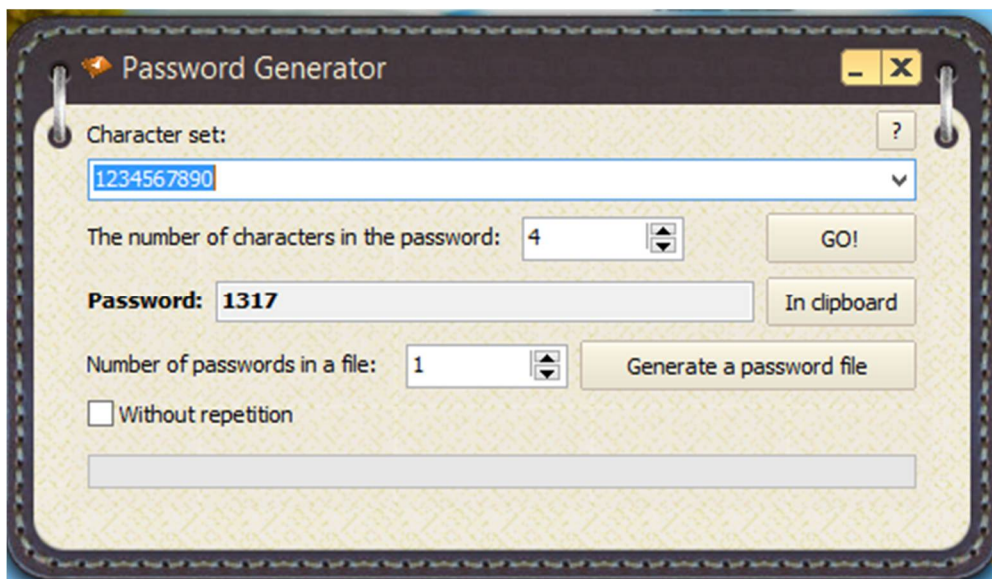
### Shortcomings:

1. Works only with integers.

*Random numbers it is especially used in receiving codes for different mobile payment cards, in different lottery games etc.*

The program "Generator of passwords" on the basis of the improved algorithm of receiving any numbers without repetition.

This program generates the file of passwords from the entered symbols without repetition or with repetitions in dependence of a choice of a mode.



Main window of the program.

Check the "Without repetition" button to generate file of passwords without repetitions.

Result of the program in the following values:

The number of characters in the password: 4

Number of passwords in a file: 100

Without repetitions: checked

86	27	44	52	36
04	10	41	99	93
92	45	22	91	72
95	08	68	97	59
32	71	62	94	39
19	85	98	07	61
69	17	12	26	50
35	13	65	48	76
96	81	18	05	49
51	56	06	89	37
77	74	80	64	15
43	66	23	31	20
75	73	21	54	88
16	47	55	30	67
57	58	29	84	28
24	83	38	00	63
90	46	79	01	42
82	87	40	34	33
53	78	02	14	09
25	70	60	03	11

**DEVELOPMENT OF THE MODERN TECHNOLOGY  
ACQUAINTANCE WITH MOBILE APPLICATIONS  
PROGRAMMER  
USING PARTITION “NECESSARY FOR THE HEALTH”**

*A. Hamidullayev, N. Ibragimova*

***Summary.** This article is devoted to the overview of interesting applications, which are very important for public health. Advantages and disadvantages of the modern technology are analyzed. New approaches of using applications are showed.*

***Keywords:** development, information technology, unexpected, advantages, disadvantages, carefulness, health, testing with applications.*

Everybody knows that, to live without modern technologies is impossible. Some groups of people are seems like pessimists and say that there are more disadvantages in our technology rather than advantages, and other group of people have opposite opinion. In this article, it is not given how technology is working, or how it is being made, or what mistakes does it have. On the contrary, from this article, people can be informed about many interesting and useful applications for their health.

### **The mobile applications for trainings**

People think that mobile phones and internet is our friend and at the same time enemy. The reason is that people are losing time and health with playing games or watching everything on YouTube and etc. According to testing with people's communication about technology, shows that the large part of people could not find or do not try to find applications like given next. This article is devoted to save people's health. And it is more and more interesting for women.

General "smartphone sphere" could mention all spheres of our restless life therefore physical activity, necessary for everyone, nor has remained away from digital engineering. The judges of such engineering in a condition to construct on the mobile applications own empire fitness. Want to be engaged - get from a pocket liked gadget and. Time to train. We have prepared for you a selection of the excellent (different) mobile applications, which will help you to hold ourselves in the form and to not overlook (forget) about trainings. From clause, you learn (find

out) about what applications for trainings and keeping weights and saving health can be loaded in lovely gadgets.

### **Introducing applications and their aim**

	The name of applications	The aim of applications
	Fat Secret	The application for a correct feed(meal)
	Water Balance	The application for drinking enough water
	Diet Recipes	The application for keeping weight
	Visual Diary	The application for acting to diary
	Runtastic	Pedometers and Begomery
	Pushups	Exercises for boys
	Daily Yoga	Exercises for girls

#### **1. The applications for a correct feed(meal)**

With the first beams of the sun, all of you more often look at yourselves in a mirror and, most likely, are not so pleased with itself. For those who want to change to best, there is a heap of ways. For the beginning be going in a heap and begin to visit (attend) sports trainings, not overlooking (forgetting) to watch (keep up) a correct feed (meal). To moderate appetites not to look at a refrigerator and to compress will in a fist to you the numerous mobile applications will help, which are created especially for those who wants to be in the form to a beach season. From clause, you learn (find out) about what applications for a correct feed (meal) can be loaded in liked gadget.

#### **Counters of calories**

For those who wants to grow thin, but sometimes to afford concessions, counters of calories - ideal diet. Almost each such application to offer you to choose the growth and weight, to specify desirable result, will calculate time up to

the happy moment and, most important, will tell about that, how much calories per day are possible for you to eat and what products it is allowed.

"The Application Fat Secret. It is banal rhymes of calories; also, divides food into fibers, fats, carbohydrates, what exactly for a correct feed (meal) is important. Moreover, there is already brought in some of the known stamps or dishes from network institutions, such, as "Makadak", "Il patio", "Chocolate" etc. In addition, scoring there daily or weekly weighing, it draws to you the very indicative diagram of your weight. "

For iPhone choose the applications Fat Secret, "the Counter of calories", "the Calculator of calories" and STB iDiet. If you the owner gadget on a platform Android, look narrowly at the applications FatSecret, Lifesum and "the Calculator of calories".

## **2. Water balance**

If the conversations on 2 liters of water have not passed by you, and strongly occupy in a head, it is time to work. Agree, independently to measure drunk a liquid by glasses and to write down the data in a notebook rather difficultly. But to the aid there comes the mobile application.

It is ready to tell to you about that, how much glasses of a liquid need to be drunk within day and to remind, that the time for "drink" has come.

For iPhone choose Water balance, iDrated, Water Clock.

If you the owner gadget on a platform Android, look narrowly at the applications Drinking Water, Carbodroid, Water Your Body and Water balance.

"Water balance – watches (keeps up) consumption of water, itself calculates you norm and prompts, what not all liquids support your internal water balance. It is very good systematic – now at last I know, how much I all the same have drunk waters per day (main – to have liked to a circle with clear volume), is not pleasant that it is not regular and not systematic reminds that it is time to drink water. That is it literally few times per day puts you before the fact, that you yet do not cut 50 % or 100 % of water."



### **3. Diet**

The collections of diets and separate systems for growing thin is, perhaps, one of the most loaded mobile applications. The fans (amateurs) limit itself can to try both rigid express trains - diets, and long systems for normalization of weight.

Some applications will offer you not only provisional menu per day and will tell about diets in more detail, but also will offer the interesting recipes of dietary kitchen.

To be fond of miracle techniques it is necessary to be informed about any decisions of a doctor and without sports and healthy various food will fail a beautiful figure precisely. Our choice of the applications for iPhone My Diet Tips, Best Diet Foods, Diet Recipes, "Thin" and "the Collection of diets".

For a platform Android 90 days of a diet, "the Directory of diets", Diet Plan and M-Diet Helper ideally will approach.

### **4. Diaries of a feed(meal)**

Convenient thing for those who wants to grow thin or simply watches (keeps up) weight. The diary of a feed (meal) will oblige you daily to bring the data on changes in your body in a diary. A bit later you receive the evident diagrams, diagram and, probably, photo report, how your weight and appearance day-to-day varies.

Frequently these applications combine in themselves the program for calculation of calories and fitness-diary, so on searches of a good diary of a feed (meal) it is possible to be sent in a category "Counters of calories".

For iPhone we offer to choose the applications My Food Diary, "a Diary of meal", "a Diary of a diet", "a Visual diet a diary" (Visual Diet Diary). For Android platform will approach "Fitness nutrition", Noom Weight Loss Coach, My Slim Work Pro.

Adhere to the certain mode of a feed(meal), search for the convenient and qualitative application, do not overlook(forget) about employment (occupations)

by sports – then your occurrence on a beach of any resort will make furor, and will buy new swimsuit to long-awaited holiday even more pleasantly.

### **5. Pedometers and begomery**

To the fans (amateurs) of morning and evening jogs, sports walking is devoted. The applications of this type will help you to find out all about your daily physical activity burnt calories, passed kilometers and average speed of movement - it is enough to switch on the application and to put it (him) in a pocket. All rest yours clever gadget will make for you. It is possible, that because of the application the life of the battery yours smartphone will be shorter, but it is that costs (stands).

"The very convenient application Runtastic. In him, it is possible to set a type of your training. I more often use it (him) for run, also there is a walking (by the way, very interestingly, how much we pass for day, how much we spend of calories). Very simple in management, press the button "Start", choose a type of training "Run, driving a bicycle". In addition, with the help of the navigator on a map your arrangement, distance, average speed, length of a distance is marked. It is convenient to trace, if you should run 5 km or simply to see the achievement day-to-day. The registration in system allows to synchronize the data and to look statistics of your trainings".

For iPhone it is chosen the applications Runtastic, Nike + Running, C25K, Walk Star, Accupedo and "pedometer".

The owners of engineering on Android should look narrowly at the applications Runtastic Pro, Accupedo, "Pedometer" and «Pedometer Walking".

### **6. Exercises**

One more assistant - application, which allow you to create high-grade training at themselves at home. In pictures or video you will show the best exercises on all groups of muscles, will give valuable advice (councils). Budget variant for those who does not want to be spent for the fitness-center.

Some applications are created for separate training. For example, can consider (count) quantity (amount) pushups or knee-bends. Others offer complex training and wide range of exercises.

"Nike Training" is your personal trainer always and everywhere. The slogan of the given application is those. Actually, very effective (fast) circular trainings for different levels of physical preparation. The trainings are of a different type: "Harmony ", " Tone ", " Force ", " Focus ". There are trainings with stock; there are such, which can be carried out in the street, after jog. Very conveniently - there is a statistics. By the way, abruptly made out application, beautiful photos and pictures at a level.

Each exercise has description and video, where is in detail shown, as well as what to do (make). One minus: long, dreary, sometimes not clear system of registration. However such applications to the beginners are better for removing in the party – you risk to do (make) complex (difficult) exercises incorrectly, give harmful loading to a back and other muscles of your body.

For iPhone, choose Push-Ups, "Pushups", GymGoal ABC, FitnessBuilder and iFitness.

For Android - Runtastic Pro Workouts, Endomondo Sports Tracker, Fitness Flow, "Famale fitness" and "Fitness-house".

## **7. Yoga**

If to you as desirable quiet trainings, meditation or you the fan(amateur) yoga, which in a condition to be engaged independently and secretly to peep new asana, the mobile applications for you - find and correct assistant.

“When you go to employment (occupations) of yoga the whole year, the trainings, alas, do not bring to you such pleasure, as earlier. Faster, you perceive them as necessity. On at the same time early rise and the exercises are included into a habit. An excellent (different) output (exit) from this situation – employment (occupation) in home conditions. Include pleasant music – do (make) exercises. I advise to use the application Pocket Yoga for IOS". Many applications are

supplied with the valuable recommendations from guru yoga and lessons in a format of a video, music for meditations and exercises of respiratory gymnastics. Besides, you can choose a level of complexity and trace progress.

For iPhone, try the applications Pocket Yoga, Yoga.com Studio, All-in Yoga HD.

For Android the applications DailyYoga, PocketYoga, " Universal breath " are developed.

### **Motivation**

Not all manage to force themselves to be engaged at home, in a training hall or in the street. If to carry out exercises to you, in most cases, it is possible extremely from under sticks, it is necessary to motivate itself. The mobile applications – worthy decision of this question.

So, if you are lazy to run - choose the application Zombies, Run. You only do not forget to wear headphones - will hear, as behind you chases crowd hungry. Zombie. Than not motivation to worthy training?

Besides the application can help you not only business, but also word. Require the bright citation each day, which will help you to lift the body from a sofa? Download of the application "Motivation", "Motivation. Widget" and Lift – Daily Motivation.

Select the mobile application correctly, do not overlook (forget) about advice (councils) of the professionals and master new opportunities yours gadget. Believe, together with the bright application will make it very easily, and the result from trainings will not force itself long to wait.

**To sum up**, now everybody knows about healthy applications, which read or heard about this article. Maybe you are surprised about this article. However, my aim is to create web site and application, which collected all this application in one. Nowadays I work with my friends on other project. The aim of our project is to create electron diary for school.

## REFERENCES:

1. U.S. Department of Health and Human Services, U.S. Department of Agriculture (2010). Dietary Guidelines for Americans, 2010, 7th ed. Washington, DC: U.S.
2. [www.store.apple.com](http://www.store.apple.com)
3. [www.androidtab.ru](http://www.androidtab.ru)
4. [www.siberiafit.ru](http://www.siberiafit.ru)
5. [www.nytimes.com](http://www.nytimes.com)

## VIDEO GAMES USEFUL OR HARMFUL FOR US?

*J.F. Khoshimov, V.Kh. Gaziyeva*

*Summary.* People all over the world devote the article to the usage of video games. Some advantages and disadvantages of using and ideas about creating games are shown in the following article.

*Key words:* video games, gadgets, game mania, social networks, violence, increase, logical games, global, natural teachers

Nowadays games take an important and huge role in our life. Games sprang in ancient times and helped people to improve their physical skills and knowledge. After development of technology, games were integrated with technique. Inventing personal computers and mobile services play big role in the developing and spreading of the games. Now, there are billions of computer and mobile games. Besides computer and mobile games, gadgets like X-BOX, PLAYSTATION, SONY and SEGA are also spread among people.

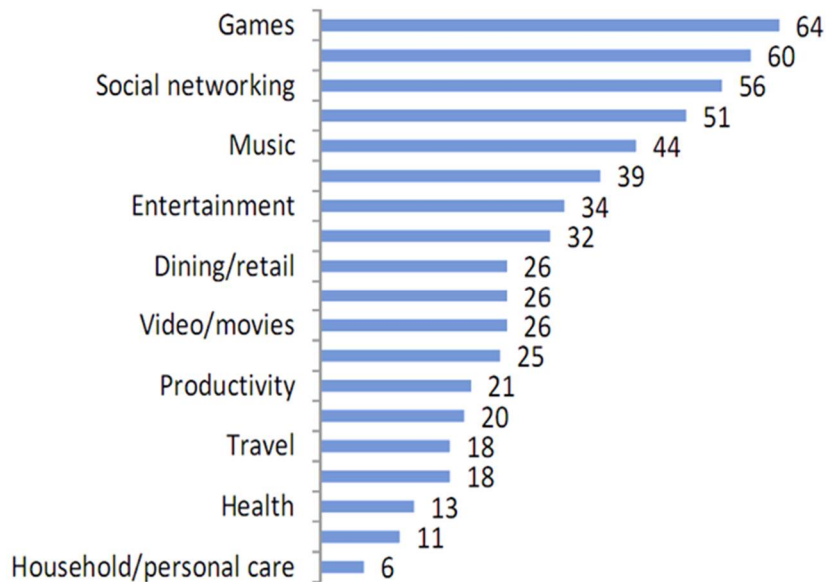
Different people use games in different ways. Some of them play games for taking pleasure; the others play them to learn something. Among them, we can find who fall ill with game mania. They cannot live without games. Nowadays the number and kind of games are increasing. At the same time, the number of people who play video games is increasing too.

	Then	Now
Audience	Mostly young men and boys, hardcore gamers	Across all age groups and gender, casual and hardcore gamers
Business Model	Physical distribution, box sales	Physical distribution, subscription, cloud gaming, app stores, virtual goods, in-game advertisement
Platform	Console, handheld console, PC	Console, handheld console, PC, mobile phone, tablet, social network websites, instant messaging clients
Interactivity of Games	Limited: single-player, LAN (local area network)	High: Internet enables MMOGs (massively multiplayer online games), social network games, etc.

*Figure 1. Characteristics of video gaming then and now*

Social networks play an important role in the developing of the games. With over 1.32 billion users, worldwide social network website Facebook has become a part of the everyday life of many. Initially Mark Zuckerberg created Facebook in 2004 to find out more about female classmates. After opening up the Facebook platform to external developers games that use social connections have spread very rapidly. Gaming on social network sites is becoming increasingly popular and fashionable in Uzbekistan. Nowadays many people of Uzbekistan play a game on social networks. We can see computer and gaming clubs in every street of our country.

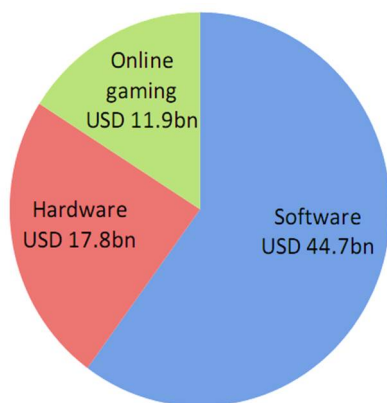
Games are the most popular mobile phone application in the US.



*Figure 2. Category of mobile apps used in 2011 in the United States.*

There are many types of games. One of them casual game. Pac-Man, 2048, Subway Surfers belong to category of casual games. These time fillers cover different genres (puzzles, card and board games, strategy games, arcades), have simple particular skills and are targeted to a mass audience. People began playing casual games online from the early days of the Internet. Casual games are very attractive to developers because of their quick nature and simplicity, allowing developers to take greater creative risks at low cost and high frequency.

Creating games is one of the genres of business.



*Figure 3. Global video game industry in sales (2011)*

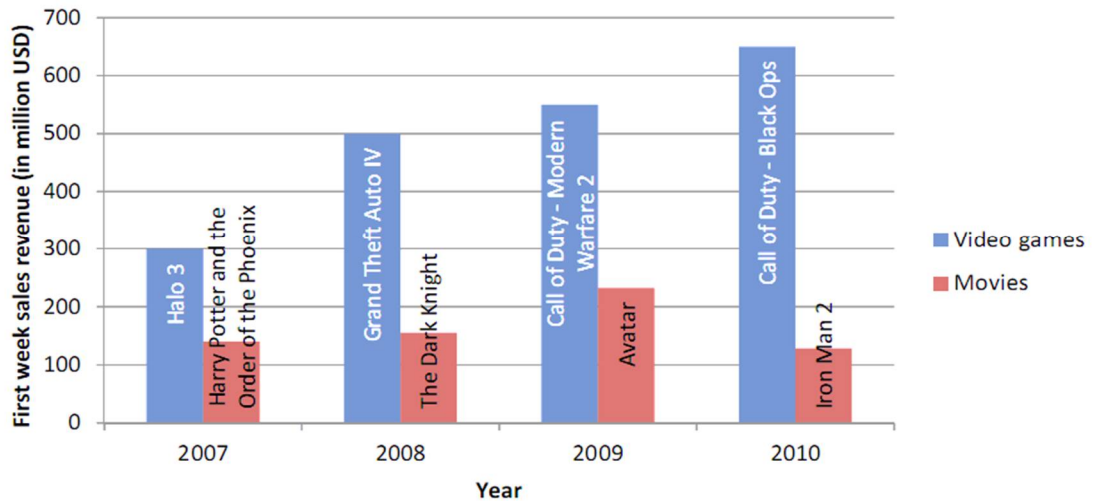


Figure 4. Games vs. movies: First week sales revenue (2007-2010)

Some games spread free. However, for playing this game, you have to buy virtual goods. This is also one way of earning much money.

Is playing video games good or bad for people?

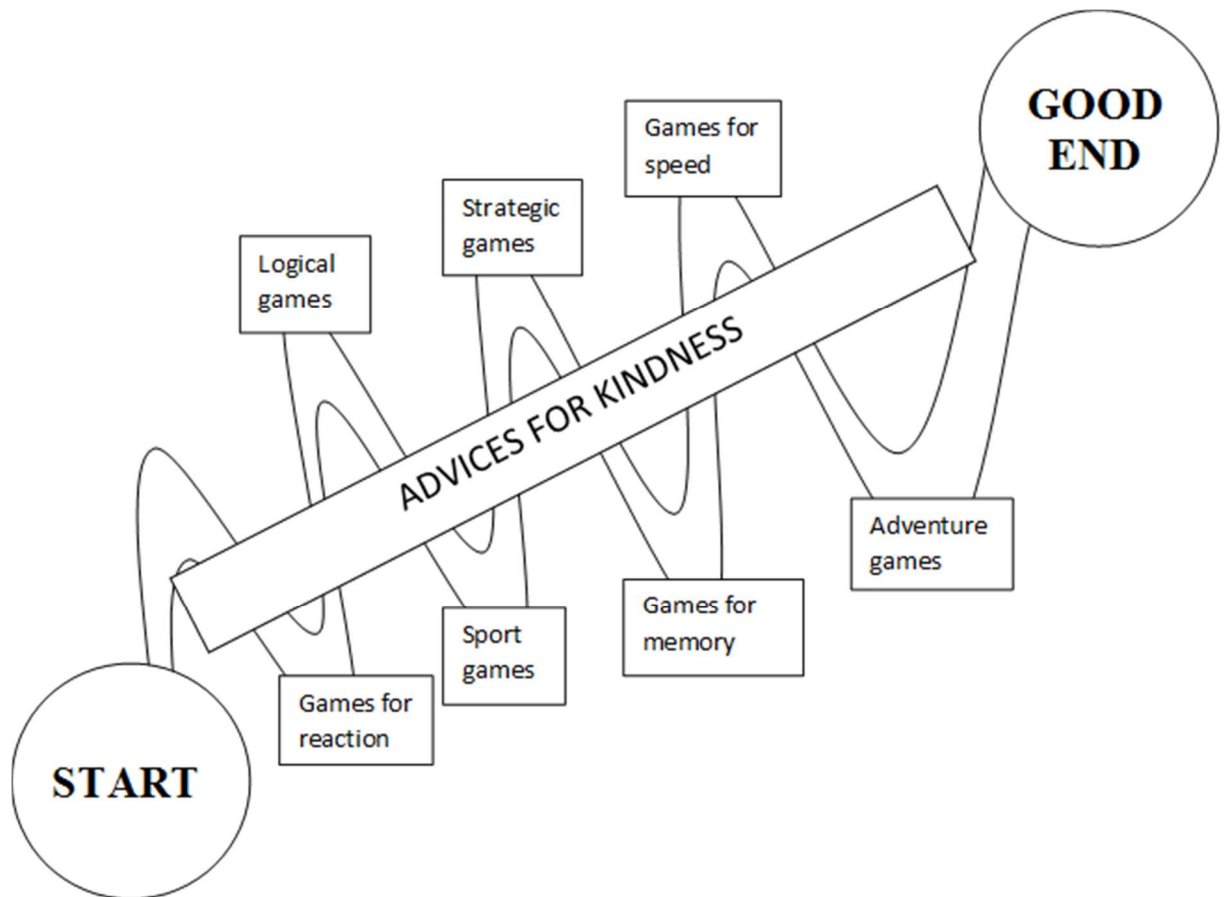
Video games can actually have many benefits – the main one is making kids smart. Video games may actually teach kids high-level thinking skills that they will need in the future. "Video games change your brain," according to University of Wisconsin psychologist C. Shawn Green. Playing video games change the brain's physical structure the same way as do learning to read, playing the piano, or navigating using a map. They introduce kid to computer technology and the online world. Video games make learning fun. Your kid likes games because of the colors, the animation, the eye candy, as well as the interactivity and the challenge and the rewards of winning. The best way to learn is when the learner is having fun at the same time. That is why video games are natural teachers.

Too much video game playing makes kid socially isolated. In addition, he may spend less time in other activities such as doing homework, reading, sports, and interacting with the family and friends. Most of the bad effects of video games are blamed on the violence they contain. When people play violent video games, they increase aggressive thoughts, feelings and behaviors. The effect of video game violence in kids is worsened by the games' interactive nature. In many



games, kids are rewarded for being more violent. The act of violence is done repeatedly. The child is in control of the violence and experiences the violence in his own eyes (killings, kicking, stabbing and shooting). This active participation, repetition and reward are effective tools for learning behavior.

Unfortunately, the number of these games is increasing. I think our first task is creating games simulating kindness, especially for kids. There are many genres of games and in our last figure, we show list of Games simulating kindness.



*Figure 5. Games simulating kindness*

Games for reaction such as “Subway Surfers”, “Fruit Ninja” or racing games can help people to make correct decisions in a short time and in bad situations. These games also train our eyes. Puzzle games help kids to improve their memory. Logical games like “2048”, “Angry Birds”, “Cut the Rope” train kids brain. They learn solve difficult problems in his life. Strategic games such as “Red Alert”, “Zombie vs. Plants”, “Chess” are also improve kids brain function. When we play

adventure games, we will be in different situations and try to take a pleasure after completing levels. Therefore, adventure games can help us to solve different problems in different situations. Sport games include all of these games. For example, playing sport games, we amend our reaction, speed, logical thinking and eye seeing.

Let us organize a club of programmers and create goodness games together.

## **MOBILE LEARNING “LEARNING ENGLISH ANYTIME AND ANYWHERE”**

*N. Rashidov, O. Makhsudova*

***Summary.** We describe specific features of mobile applications and the role of mobile technologies in learning foreign languages. We also offer to native speakers to use the new mobile based on multifunctional application. We describe main features of this application. Finally, we give a new tool for learning English and self-study.*

***Key words:** mobile technologies, mLearning (mobile learning), learning mobile applications, specific aspects of mLearning*

Increasingly, mainstream mobile technologies are finding their way into student's life. As we can see every day mobile devices have become an integral part of our life.

Smartphones and tablet computers are radically transforming how we access our shared knowledge sources by keeping us constantly connected to near-infinite volumes of raw data and information. We enjoy unprecedented instant access to expertise, from informal cooking lessons on YouTube to online university courses. Every day people around the globe are absorbed in exciting new forms of learning, and yet traditional schools and university systems are still struggling to leverage the many opportunities for innovation in this area.

Recently frog has been researching how learning models are evolving--and how they can be improved--via the influence of mobile technologies. We have found that the education industry needs new models and fresh frameworks to avoid losing touch with the radically evolving needs of its many current and potential new constituencies. These range from a generation of toddlers just as comfortable with touchscreens as they are with books, to college-aged men and women questioning the value of physical campuses, to middle-aged and elderly professionals hoping to earn new skills in their spare time to secure a new job in turbulent economic times.

We have been focusing on the concept of mLearning where "m" usually stands for "mobile" but also just as easily for "me." The near-ubiquity of handheld devices and their constantly lowering costs will enable the idea of "education that you can hold in your hand". That is why it becomes a widespread reality in so-called developed markets and resource-challenged parts of the globe alike.

Up until now, most people relegated "education" to a finite time in their lives: entering school at around five years old and attending school institutions all the way to university. Education had an expiration date, and then working life began. This model, which has its roots in the industrial era, is quickly becoming less relevant or applicable to the way we live in the modern age

Education is being increasingly interspersed with our daily activities. On our phones, tablets, and PCs, we download and digest life or work-related articles with instructions on how to fix our appliances or how to use a new professional software program.

Continuous learning will simply be a given for the generations of today's youngsters who are often literally born within reach of a connected personal device.

Advantages of Recommending Language Learning Mobile Apps to Users:

**Convenience** – The mobility of these devices provides users with the chance to study/review any day, any time, without the need to remember to bring their books or class materials.

**Efficiency** – Most apps are tremendously user-friendly and well organized into topics. This means users do not waste any time looking for what they want to practice.

**Engagement** – Language learning mobile apps are the ideal tool to engage learners who are very tech-minded and naturally enjoy using gadgets.

Therefore, if you are a student or learner who are interesting to learn and love trying out new apps, here are some that are the perfect complement to their ESL classes:

Everything is good if you want to learn, but one question “Is there any mobile application for Uzbek learners?” I think there are some but not enough. That is way we offer you a new mobile multi-functional learning application.

The features of this application:

1. An excellent dictionary for users: There are 1500 widely used words. Each word has a pronunciation, synonyms, antonyms, sample sentences. In addition, you can check your own pronunciation.

2. More than 90 topics including grammar rules. This grammar information does not care your level. If you are a beginner, you can start learning from elementary level. In other way, you can learn suitable topics.

3. More than 80 different topics are ready for you and there some topics with audio files.

4. You can find the list of irregular verbs in this mobile app.

5. Check your knowledge by passing grammar and vocabulary tests, and you can find out your results in weekly charts

6. All in all this application has widely setting options. There are two user interface languages: English and Uzbek. You can change them yourself. Moreover,

you can choose theme font size, history saving and some ringtones. Just insert your name for showing test results.

In conclusion, I would like to say this is the first application version and we are planning upload our mobile app into Google Play Market. You can download, install them free and give your opinion about it in social sites.

## **MY TAXI. TAXI IN YOUR PHONE**

*A.Shukurov, O.Makhsudova*

***Summary:** Recently new taxi-system has been significantly started up in Tashkent city which is called “MyTaxi”. This new project is based on up-to-date technologies and covers widely aspects of transporting passengers in the shortest times to any place in mega polis, despite of traffic jams and so on. Features, accuracy and qualification of working with passengers will be presented in below article. Furthermore, you will get information on how it can be best option to use “MyTaxi” to solve your problems connected transport issues.*

***Key words:** taxi, taxi-driver, GPS, journey, application, smartphone, passenger, Google maps, observing in real time, Android, iOS, location, dispatcher.*

Nowadays smartphones are being irreplaceable devices with huge kind of features as well as the new technologies, entering our life to improve degree of lifestyle. This handy smartphones are not only cellphones, they support various applications. The project we are presenting is of this application that gives a great opportunity to use taxi service by just clicking the button in your mobile application. It doesn't take genius to install and use this app. You will not look for a taxi in highway anymore, taxi drivers really do.

This project did a startup in 15<sup>th</sup> of January in Tashkent city. To attract new potential clients “MyTaxi” launched official pages on social networks in Facebook, Instagram and Tweeter. Using the service of “MyTaxi” is very simple, even for a

child. First, you need to download the special app called “MyTaxi” from AppStore or Google Play. Then you will be required to register in system by using your e-mail and telephone number.

After that, you can use the services of “MyTaxi”. Application use Google Maps, be sure that the device is connected to Internet and GPS is on to show your location to server. In main window of the app you will be shown taxis nearby. Taxi ordering system works automatically; there is no dispatcher that connects you with taxi-drivers. To order a taxi, first of all, customer needs to choose the location that they want to go. Next, push the “Order” button and you will be given three taxi classes such as “Econom”, “Comfort” and “Busyness” to select one of them. Server will automatically send you suitable taxi, in addition to that, you will receive the information about taxi- driver and his car. In the app, you will be shown the remaining time of the taxi- driver coming to your location. When driver comes, he will notify you about his arrival through his pad. After getting on the car, driver pushes the button “Client on the board” and system shows journey’s information like remaining time, short distance and taximeter. At that, time client can observe the whole journey by his smartphone. When journey finishes, driver touch the button “Order complete”, then customer can rate the driver and give feedbacks to each other. Thanks to newly created technologies, millions of processes like that can be done in the shortest time without manual processes.

**Features:**

- Using the application on Android and iOS devices
- Order a cab without calling the dispatcher
  - your order is sent directly to the drivers in your area so they reach you as quickly as possible.
- Choosing classes
- The app shows all the necessary information about the driver and their car.
- Refine your search, for example, smoker or non-smoker, receipt etc.
- Track the location of your car on the map,

- Get price estimate in the cities supporting this feature,
- Rate your journey, which will affect the overall score of the driver.

To sum, we want once again to reaffirm that this prospective project will be extremely beneficial for both citizens and company itself. The main uniqueness of this project is time efficiency and comfort that it makes available.

## **INCREASING CRYPTO-RESISTANCE OF ENCRYPTION ALGORITHM RSA**

***B.Y. Turdiboyev, M.A. Nazarova***

***Summary:** This article is devoted to increase crypto-resistance of the encryption algorithm RSA via matrix method of symmetric encryption system.*

***Keywords:** Cryptography, encryption, decipherment, public key, private key, crypto-resistance, symmetric encryption, asymmetric encryption, RSA.*

As you know, one of the important tasks of cryptography is to create high crypto-resistance algorithms. Nowadays, RSA algorithm is widely used in the bank's computer networks, especially in remote customer service (credit cards) [1]. Crypto-resistance of RSA encryption algorithm can be increased through mathematical and logical methods. For this purpose, the new encryption algorithm was created with RSA encryption algorithm and matrix method of symmetric encryption system.

However, according to the study encryption method can be seen as a two-tier encryption:

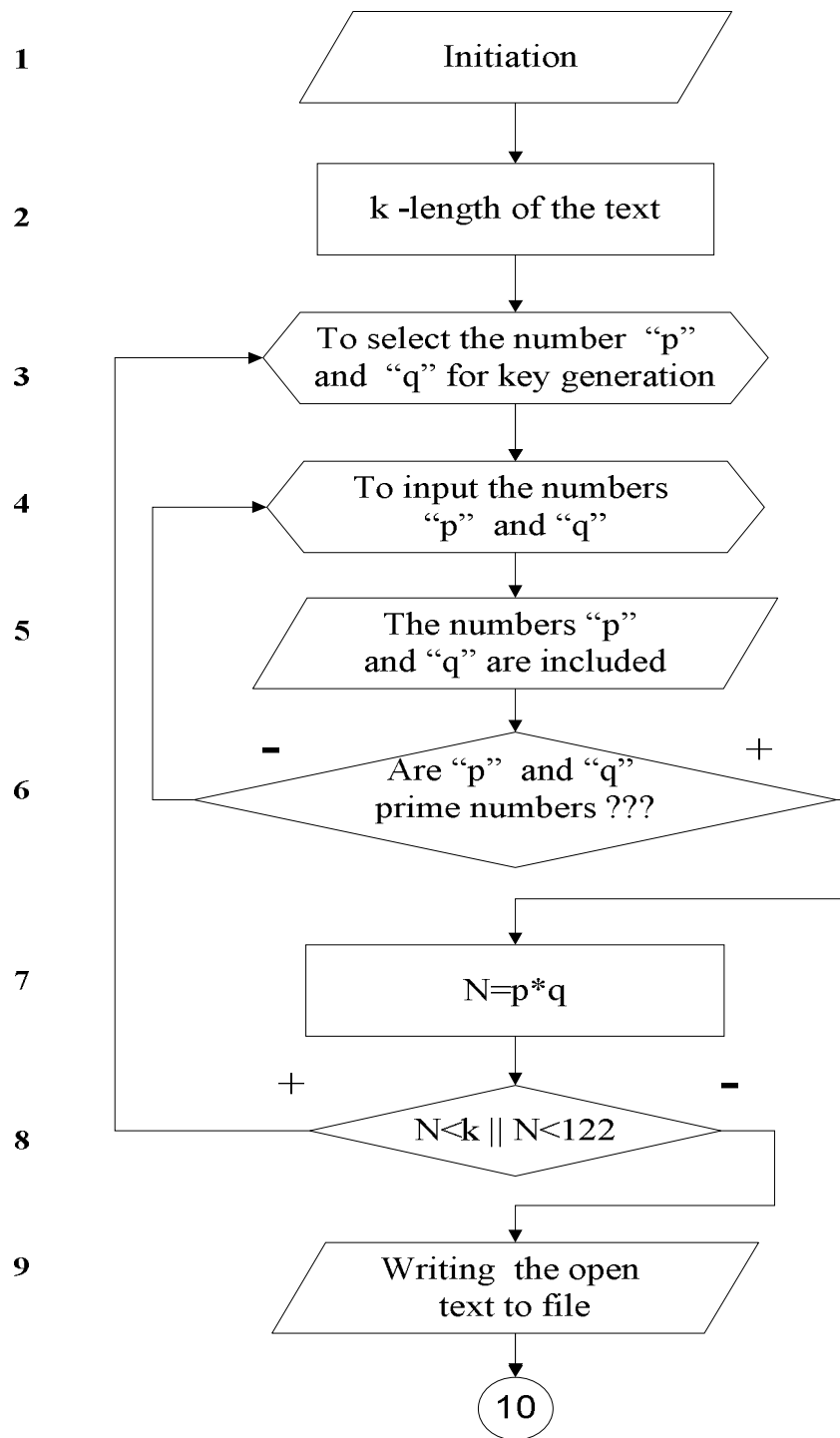
Step 1: Matrix method of the symmetric encryption

Step 2: RSA algorithm

One of the advantages of the program is to use a single key for both encryption algorithms.

The first, open text is encrypted via matrix method and the resulting cipher text is encrypted again via RSA encryption algorithm. Matrix method of encryption is not related to the meaning of the included symbols in the open text, it is also depend on the position of symbols. “ASCII” code of the symbols of the first cipher text is used to encrypt with RSA algorithm.





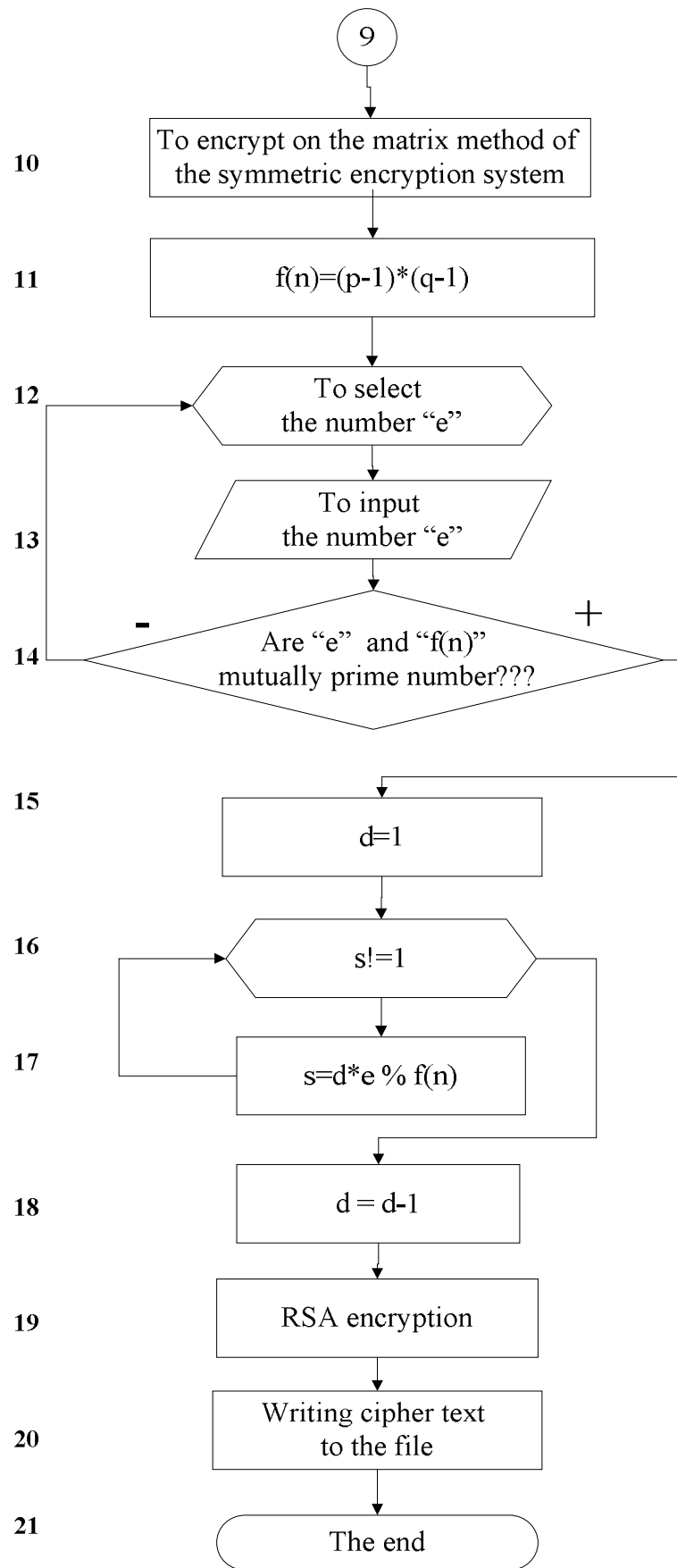


Figure 1. Encryption block-scheme

Decipherment block-scheme is as following:

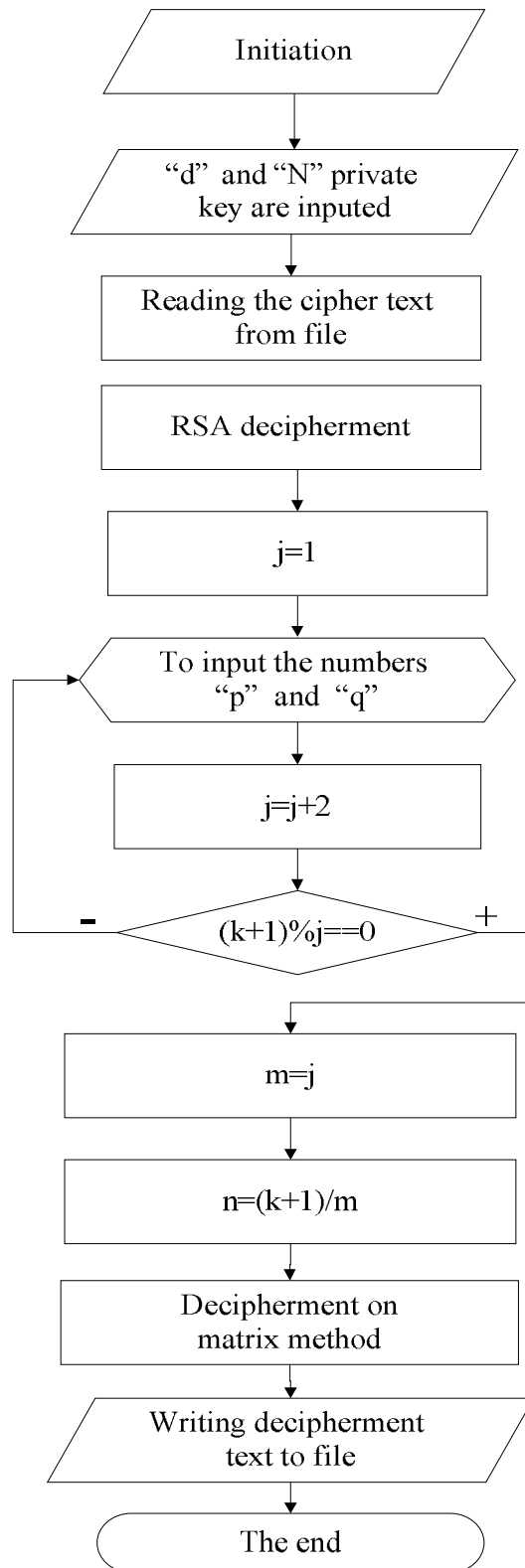


Figure 2. Decipherment block-scheme

The program of this encryption algorithm was written in the language C++ and it will serve to ensure privacy of information on data transfer.

```

D:\Conference\matrix & RSA (encryption).exe
Input the text:
" The only way to do great work is to love what you do. If you haven't found it yet, keep looking. Don't settle. As with all
matters of the heart, you'll know when you find it..." Steve Jobs <1995-2011>

Input the cipher key p and q(Notes:p and q are the prime numbers):
p=11
q=9
q must be the prime number! Also, this condition is demanded: q>p Please, input afresh...
q=17
Length of the cipher key is not enough! 15 symbols of the inputted text are excessive.
Input a new cipher key which is belong to the prime number :
p and q prime numbers are not suitable for being small numbers.! Input bigger prime numbers afresh...
p=13
q=17

The position of the introduced open text in the matrix:
  d   t   d   k   h   t   n   o   *
T   o   o   o   e   t   h   h   b
h   o   o   -   p   y   l   e   n   s
e   g   l   l   o   p   e   l   h   o   i
o   e   v   f   u   t   t   e   w   t
n   a   e   n   n   o   t   a   a   w
l   e   e   y   d   o   k   e   r   .
y   v   y   o   i   n   -   e   n   S
a   v   a   h   y   a   -   R   s   o   y
y   k   t   h   y   e   -   s   o   u   e
t   o   u   e   -   o   u   l   u   e
o   n   n   -   t   i   f   i   J   *

Cipher, text of step 1:
" k'hc no* dddet hkdh*Tooo e aen s*h .fpl oi *egl o elhwt* rolult e .l*oovfnotmau.*9*nae dolarh.9*lt y kette"5*y woiit
_n -* whutn e S2*woa gArystB*arthy.ssooi*yk ae uuv1* gutDuo' e)*tioe,oiflf **osun nt liJ**

***** Encryption step 2 (RSA) : *****
N=p*q= 221
f(n) = 192
Input the number e (Number e must be mutually prime number with f(n)):
e=45
Number e must be mutually prime number with f(n)!
Input the number e (Number e must be mutually prime number with f(n)):
e=35
Open key : <35,221>
Secret key : <11,221>

Cipher text code :
187; 128; 128; 128; 91; 74; 91; 195; 194; 128; 206; 15; 87; 128; 94; 194; 94; 194; 186; 194; 128; 195; 74; 94; 106; 87; 50;
15; 15; 15; 128; 186; 128; 11; 186; 206; 128; 123; 87; 195; 128; 128; 28; 136; 31; 123; 114; 128; 15; 27; 128; 87; 186; 103;
114; 128; 15; 128; 186; 114; 195; 85; 194; 131; 87; 128; 147; 15; 87; 26; 114; 194; 128; 186; 128; 28; 43; 87; 15; 186; 118;
136; 206; 15; 194; 190; 11; 85; 28; 216; 87; 206; 11; 186; 128; 94; 15; 114; 11; 147; 195; 28; 216; 87; 114; 194; 128; 127; 1
28; 74; 186; 194; 194; 186; 187; 144; 87; 127; 128; 85; 15; 27; 27; 28; 194; 99; 206; 128; 141; 87; 128; 85; 195; 26; 194; 20
6; 128; 186; 128; 128; 60; 84; 87; 85; 15; 11; 128; 128; 103; 143; 147; 127; 127; 194; 211; 87; 11; 147; 194; 195; 127; 28; 1
23; 123; 15; 15; 186; 43; 87; 127; 74; 128; 11; 186; 128; 128; 26; 26; 418; 43; 87; 128; 128; 127; 118; 194; 204; 85; 15
91; 128; 186; 20; 87; 194; 27; 15; 186; 99; 15; 27; 136; 114; 136; 128; 87; 87; 15; 123; 26; 206; 128; 206; 194; 128; 114;

```

Figure 3. Encryption process

Open text and cipher text are recorded to the files during process of the encryption program (Figure 4, Figure 5). Made cipher text is sent to the necessary address.

```

Open_text.txt — Блокнот
Файл Правка Формат Вид Справка
" The only way to do great work is to love what you do. If you haven't found it yet, keep looking.
Don't settle. As with all matters of the heart, you'll know when you find it..." Steve Jobs (1995-2011)

```

Figure 4. Open text file

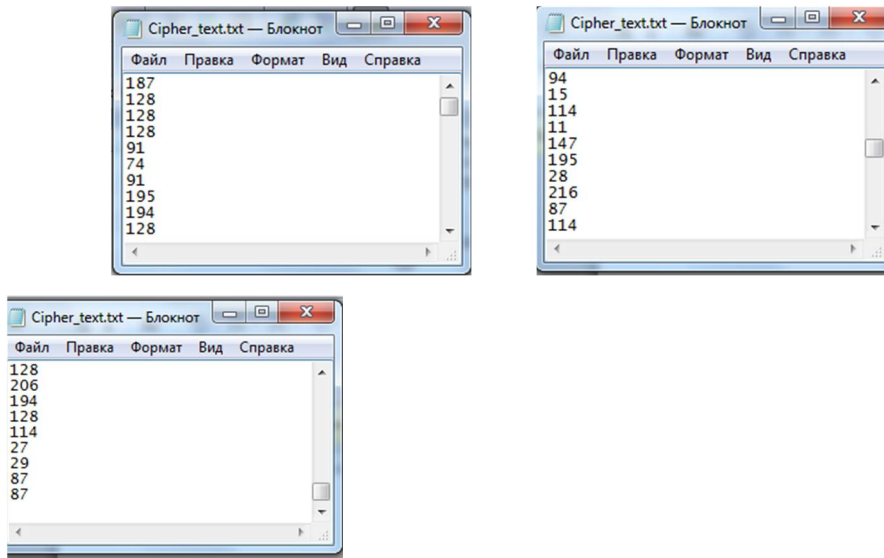


Figure 5. Cipher text file

In the decipherment process, decipherment key is entered and cipher text is decipherment (Figure 6).

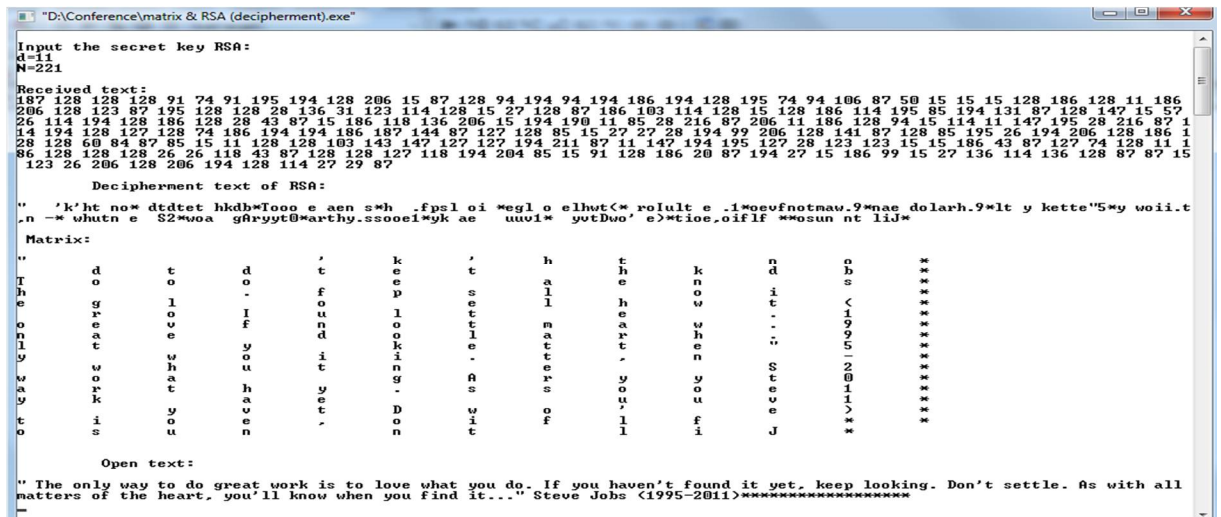


Figure 6. Decipherment process

Decipherment text are recorded to the file during process of the decipherment program (Figure 7).

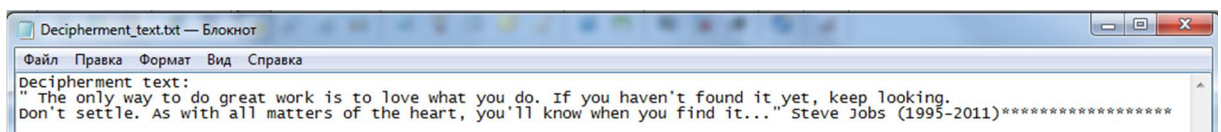


Figure 7. Decipherment text file

## REFERENCES:

1. Akbarov D. E. Axborot xavfsizligini ta'minlashning kriptografik usullari va ularning qo'llanilishi. Toshkent, 2009.
2. [www.cryptopp.com](http://www.cryptopp.com)
3. [www.asecuritysite.com/Encryption/rsa](http://www.asecuritysite.com/Encryption/rsa)

## AN ANALYSIS OF SECURITY ISSUES IN THE CPI MODEL OF CLOUD COMPUTING

*B.Y. Turdiboyev, M.A. Nazarova*

***Summary:** In this article some important security issues in the CPI model of cloud computing is analyzed. It helps to provide protection against vulnerabilities and threats at the time of using service of cloud computing.*

***Keywords:** Cloud computing, security, SPI model, vulnerabilities, threats, countermeasures.*

Cloud Computing is a flexible, cost-effective, and proven delivery platform for providing business or consumer IT services over the Internet. However, cloud Computing presents an added level of risk because essential services are often outsourced to a third party, which makes it harder to maintain data security and privacy, support data and service availability, and demonstrate compliance.

The cloud model provides three types of services:

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)

*Software-as-a-service (SaaS) security issues*

Application security. These applications are typically delivered via the Internet through a Web browser [2]. However, flaws in web applications may create vulnerabilities for the SaaS applications. Attackers have been using the web to compromise user's computers and perform malicious activities such as steal sensitive data. Security challenges in SaaS applications are not different from any web application technology, but traditional security solutions do not effectively protect it from attacks, so new approaches are necessary [5]. The Open Web Application Security Project (OWASP) has identified the ten most critical web applications security threats. There are more security issues, but it is a good start for securing web applications.

Multi-tenancy. SaaS applications can be grouped into maturity models that are determined by the following characteristics: scalability, configurability via metadata, and multi-tenancy. In the first maturity model, each customer has his own customized instance of the software. This model has drawbacks, but security issues are not so bad compared with the other models. In the second model, the vendor also provides different instances of the applications for each customer, but all instances use the same application code. In this model, customers can change some configuration options to meet their needs. In the third maturity model multi-tenancy is added, so a single instance serves all customers. This approach enables more efficient use of the resources but scalability is limited. Since data from multiple tenants is likely to be stored in the same database, the risk of data leakage between these tenants is high. Security policies are needed to ensure that customer's data are kept separate from other customers. For the final model, applications can be scaled up by moving the application to a more powerful server if needed.

Data security. Data security is a common concern for any technology, but it becomes a major challenge when SaaS users have to rely on their providers for proper security [2,5]. In SaaS, organizational data is often processed in plaintext

and stored in the cloud. The SaaS provider is the one responsible for the security of the data while is being processed and stored. Also, data backup is a critical aspect in order to facilitate recovery in case of disaster, but it introduces security concerns as well [5] Also cloud providers can subcontract other services such as backup from third-party service providers, which may raise concerns. Moreover, most compliance standards do not envision compliance with regulations in a world of Cloud Computing [2]. In the world of SaaS, the process of compliance is complex because data is located in the provider's datacenters, which may introduce regulatory compliance issues such as data privacy, segregation, and security, that must be enforced by the provider.

#### *Platform-as-a-service (PaaS) security issues*

Third-party relationships. Moreover, PaaS does not only provide traditional programming languages, but also does it offer third-party web services components such as mashups [1]. Mashups combine more than one source element into a single integrated unit. Thus, PaaS models also inherit security issues related to mashups such as data and network security. In addition, PaaS users have to depend on both the security of web-hosted development tools and third-party services.

Development Life Cycle. From the perspective of the application development, developers face the complexity of building secure applications that may be hosted in the cloud. The speed at which applications will change in the cloud will affect both the System Development Life Cycle (SDLC) and security [2]. Developers have to keep in mind that PaaS applications should be upgraded frequently, so they have to ensure that their application development processes are flexible enough to keep up with changes [3]. However, developers also have to understand that any changes in PaaS components can compromise the security of their applications. Besides secure development techniques, developers need to be educated about data legal issues as well, so that data is not stored in inappropriate



locations. Data may be stored on different places with different legal regimes that can compromise its privacy and security.

Underlying infrastructure security. In PaaS, developers do not usually have access to the underlying layers, so providers are responsible for securing the underlying infrastructure as well as the applications services. Even when developers are in control of the security of their applications, they do not have the assurance that the development environment tools provided by a PaaS provider are secure.

#### *Infrastructure-as-a-service (IaaS) security issues*

Virtualization. Virtualization allows users to create copy, share, migrate, and roll back virtual machines, which may allow them to run a variety of applications [6]. However, it also introduces new opportunities for attackers because of the extra layer that must be secured. Virtual machine security becomes as important as physical machine security, and any flaw in either one may affect the other [3]. Virtualized environments are vulnerable to all types of attacks for normal infrastructures; however, security is a greater challenge as virtualization adds more points of entry and more interconnection complexity. Unlike physical servers, VMs have two boundaries: physical and virtual [6].

Virtual machine monitor. The Virtual Machine Monitor (VMM) or hypervisor is responsible for virtual machines isolation; therefore, if the VMM is compromised, its virtual machines may potentially be compromised as well. The VMM is a low-level software that controls and monitors its virtual machines, so as any traditional software it entails security flaws. Keeping the VMM as simple and small as possible reduces the risk of security vulnerabilities, since it will be easier to find and fix any vulnerability. Moreover, virtualization introduces the ability to migrate virtual machines between physical servers for fault tolerance, load balancing or maintenance. This useful feature can also raise security problems [8].

An attacker can compromise the migration module in the VMM and transfer a victim virtual machine to a malicious server. Also, it is clear that VM migration exposes the content of the VM to the network, which can compromise its data integrity and confidentiality. A malicious virtual machine can be migrated to another host (with another VMM) compromising it.

Virtual networks. Different tenants due to resource pooling share network components. As mentioned before, sharing resources allows attackers to launch cross-tenant attacks [4]. Virtual Networks increase the VMs interconnectivity, an important security challenge in Cloud Computing [9]. The most secure way is to hook each VM with its host by using dedicated physical channels. However, most hypervisors use virtual networks to link VMs to communicate more directly and efficiently. For instance, most virtualization platforms such as Xen provide two ways to configure virtual networks: bridged and routed, but these techniques increase the possibility to perform some attacks such as sniffing and spoofing virtual network.

We systematically analyze now existing security vulnerabilities and threats of Cloud Computing. For each vulnerability and threat, we identify what cloud service model or models are affected by these security problems.

Table 2 presents an analysis of vulnerabilities in Cloud Computing. This analysis offers a brief description of the vulnerabilities, and indicates what cloud service models (SPI) can be affected by them. For this analysis, we focus mainly on technology-based vulnerabilities; however, there are other vulnerabilities that are common to any organization, but they have to be taken in consideration since they can negatively impact the security of the cloud and its underlying platform. Some of these vulnerabilities are the following:

- Lack of employee screening and poor hiring practices—some cloud providers may not perform background screening of their employees or providers.

Privileged users such as cloud administrators usually have unlimited access to the cloud data.

- Lack of customer background checks—most cloud providers do not check their customer’s background, and almost anyone can open an account with a valid credit card and email. Apocryphal accounts can let attackers perform any malicious activity without being identified.

- Lack of security education—people continue to be a weak point in information security [1]. This is true in any type of organization; however, in the cloud, it has a bigger impact because there are more people that interact with the cloud: cloud providers, third-party providers, suppliers, organizational customers, and end-users.

Cloud Computing leverages many existing technologies such as web services, web browsers, and virtualization, which contributes to the evolution of cloud environments. Therefore, any vulnerability associated to these technologies also affects the cloud, and it can even have a significant impact.

From Table 1, we can conclude that data storage and virtualization are the most critical and an attack to them can do the most harm. Attacks to lower layers have more impact to the other layers. Table 2 presents an overview of threats in Cloud Computing. As Table 1 it also describes the threats that are related to the technology used in cloud environments, and it indicates what cloud service models are exposed to these threats. We put more emphasis on threats that are associated with data being stored and processed remotely, sharing resources and the usage of virtualization.

*Table 1 Vulnerabilities in cloud computing*

<b>D</b>	<b>Vulnerabilities</b>	<b>Description</b>	<b>Layer</b>
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1	Insecure interfaces and APIs	<p>Cloud providers offer services that can be accessed through APIs (SOAP, REST, or HTTP with XML/JSON). The security of the cloud depends upon the security of these interfaces. Some problems are:</p> <ul style="list-style-type: none"> <li>a) Weak credential</li> <li>b) Insufficient authorization checks</li> <li>c) Insufficient input-data validation</li> </ul> <p>Also, cloud APIs are still immature which means that are frequently updated. A fixed bug can introduce another security hole in the application</p>	PI
2	Unlimited allocation of resources	Inaccurate modeling of resource usage can lead to overbooking or over-provisioning.	PI
3	Data-related vulnerabilities	<ul style="list-style-type: none"> <li>a) Data can be colocated with the data of unknown owners (competitors, or intruders) with a weak separation</li> <li>b) Data may be located in different jurisdictions which have different laws [3]</li> <li>c) Incomplete data deletion—data cannot be completely removed [3,4,7]</li> <li>d) Data backup done by untrusted third-party providers</li> <li>e) Information about the location of the data usually is unavailable or not disclosed to users [7]</li> </ul>	PI

		f) Data is often stored, processed, and transferred in clear plain text	
4	Vulnerabilities in Virtual Machines	<p>a) Possible covert channels in the colocation of VMs</p> <p>b) Unrestricted allocation and deallocation of resources with VMs</p> <p>c) Uncontrolled Migration - VMs can be migrated from one server to another server due to fault tolerance, load balance, or hardware maintenance</p> <p>d) Uncontrolled snapshots–VMs can be copied in order to provide flexibility [2], which may lead to data leakage</p> <p>e) Uncontrolled rollback could lead to reset vulnerabilities - VMs can be backed up to a previous state for restoration, but patches applied after the previous state disappear</p> <p>f) VMs have IP addresses that are visible to anyone within the cloud - attackers can map where the target VM is located within the cloud (Cloud cartography)</p>	
5	Vulnerabilities in Virtual Machine Images	<p>a) Uncontrolled placement of VM images in public repositories [6]</p> <p>b) VM images are not able to be patched since they are dormant artifacts</p>	
	Vulnerabilities	a) Complex hypervisor code	

6	s in Hypervisors	b) Flexible configuration of VMs or hypervisors to meet organization needs can be exploited	
7	Vulnerabilities in Virtual Networks	Sharing of virtual bridges by several virtual machines	

*Table 2 Threats in cloud computing*

<b>ID</b>	<b>Threats</b>	<b>Description</b>	<b>Layer</b>
<b>T1</b>	Account or service hijacking	An account theft can be performed by different ways such as social engineering and weak credentials. If an attacker gains access to a user's credential, he can perform malicious activities such as access sensitive data, manipulate data, and redirect any transaction.	S PI
<b>T2</b>	Data scavenging	Since data cannot be completely removed from unless the device is destroyed, attackers may be able to recover this data [1,7]	S PI
<b>T3</b>	Data leakage	Data leakage happens when the data gets into the wrong hands while it is being transferred, stored, audited or processed [3]	S PI
<b>T4</b>	Denial of Service	It is possible that a malicious user will take all the possible resources. Thus, the system cannot satisfy any request from other legitimate users due to resources being unavailable	S PI
<b>T5</b>	Customer-data	Users attack web applications by manipulating data sent from their application	S

	manipulation	component to the server's application [3]. For example, SQL injection, command injection, insecure direct object references, and cross-site scripting	
<b>6</b>	<b>T</b> VM escape	It is designed to exploit the hypervisor in order to take control of the underlying infrastructure [6]	<b>I</b>
<b>7</b>	<b>T</b> VM hopping	It happens when a VM is able to gain access to another VM (i.e. by exploiting some hypervisor vulnerability) [8]	<b>I</b>
<b>8</b>	<b>T</b> Malicious VM creation	An attacker who creates a valid account can create a VM image containing malicious code such as a Trojan horse and store it in the provider repository [4]	
<b>9</b>	<b>T</b> Insecure VM migration	Live migration of virtual machines exposes the contents of the VM state files to the network. An attacker can do the following actions: a) Access data illegally during migration b) Transfer a VM to an untrusted host c) Create and migrate several VM causing disruptions or DoS	<b>I</b>
<b>10</b>	<b>T</b> Sniffing/Spoofing virtual Networks	A malicious VM can listen to the virtual network or even use ARP spoofing to redirect packets from/to other VMs [9]	<b>I</b>

The relationship between threats and vulnerabilities is illustrated in Table 3, which describes how a threat can take advantage of some vulnerability to

compromise the system. The goal of this analysis is also to identify some existing defenses that can defeat these threats. This information can be expressed in a more detailed way using misuse patterns. Misuse patterns describe how a misuse is performed from the point of view of the attacker. For instance, in threat T10, an attacker can read or tamper with the contents of the VM state files during live migration. This can be possible because VM migration transfer the data over network channels that are often insecure, such as the Internet. Insecure VM migration can be mitigated by the following proposed techniques: TCCP provides confidential execution of VMs and secure migration operations as well. PALM proposes a secure migration system that provides VM live migration capabilities under the condition that a VMM-protected system is present and active. Threat T11 is another cloud threat where an attacker creates malicious VM image containing any type of virus or malware. This threat is feasible because any legitimate user can create a VM image and publish it on the provider's repository where other users can retrieve them. If the malicious VM image contains malware, it will infect other VMs instantiated with this malicious VM image. In order to overcome this threat, an image management system was proposed. Mirage provides the following security management features: access control framework, image filters, provenance tracking system, and repository maintenance services.

*Countermeasures for T1: account or service hijacking*

1. Identity and access management guidance. Cloud Security Alliance (CSA) is a non-profit organization that promotes the use of best practices in order to provide security in cloud environments. CSA has issued an Identity and Access Management Guidance, which provides a list of recommended best, practiced to assure identities and secure access management. This report includes centralized directory, access management, identity management, role-based access control, user access certifications, privileged user and access management, separation of duties, and identity and access reporting.



2. Dynamic credentials presents an algorithm to create dynamic credentials for mobile cloud computing systems. The dynamic credential changes its value once a user changes its location or when he has exchanged a certain number of data packets.

*Countermeasures for T3: data leakage*

1. Fragmentation-redundancy-scattering (FRS) technique this technique aims to provide intrusion tolerance and, in consequence, secure storage. This technique consists in first breaking down sensitive data into insignificant fragments, so any fragment does not have any significant information by itself. Then, fragments are scattered in a redundant fashion across different sites of the distributed system.

2. Digital signatures proposes to secure data using digital signature with RSA algorithm while data is being transferred over the Internet. They claimed that RSA is the most recognizable algorithm, and it can be used to protect data in cloud environments.

3. Homomorphic encryption. The three basic operations for cloud data are transfer, store, and process. Encryption techniques can be used to secure data while it is being transferred in and out of the cloud or stored in the provider's premises. Cloud providers have to decrypt cipher data in order to process it, which raises privacy concerns. In, they propose a method based on the application of fully homomorphic encryption to the security of clouds. Fully homomorphic encryption allows performing arbitrary computation on cipher texts without being decrypted. Current homomorphic encryption schemes support limited number of homomorphic operations such as addition and multiplication. The authors in provided some real-world cloud applications where some basic homomorphic operations are needed. However, it requires a huge processing power which may impact on user response time and power consumption.

4. Encryption techniques have been used for long time to secure sensitive data. Sending or storing encrypted data in the cloud will ensure that data is secure. However, it is true assuming that the encryption algorithms are strong. There are some well-known encryption schemes such as AES (Advanced Encryption Standard). Also, SSL technology can be used to protect data while it is in transit. Moreover, describes that encryption can be used to stop side channel attacks on cloud storage de-duplication, but it may lead to offline dictionary attacks revealing personal keys.

*Countermeasures for T5: customer data manipulation*

1. Web application scanners Web applications can be an easy target because they are exposed to the public including potential attackers. Web application scanners is a program, which scans web applications through the web front-end in order to identify security vulnerabilities. There are also other web application security tools such as web application firewall. Web application firewall routes all web traffic through the web application firewall, which inspects specific threats.

*Countermeasures for T6: VM escape*

1. Hyper Safe. An approach provides hypervisor control-flow integrity. Hyper Safe's goal is to protect type I hypervisors using two techniques: non-by passable memory lockdown which protects write-protected memory pages from being modified, and restricted pointed indexing that converts control data into pointer indexes. In order to evaluate the effectiveness of this approach, they have conducted four types of attacks such as modify the hypervisor code, execute the injected code, modify the page table, and tamper from a return table. They concluded that HyperSafe successfully prevented all these attacks, and that the performance overhead is low.

2. Trusted cloud computing platform TCCP enables providers to offer closed box execution environments, and allows users to determine if the environment is

secure before launching their VMs. The TCCP adds two fundamental elements: a trusted virtual machine monitor (TVMM) and a trusted coordinator (TC). The TC manages a set of trusted nodes that run TVMMs, and it is maintained but a trusted third party. The TC participates in the process of launching or migrating a VM, which verifies that a VM is running in a trusted platform. The authors in claimed that TCCP has a significant downside due to the fact that all the transactions have to verify with the TC which creates an overload. They proposed to use Direct Anonymous Attestation (DAA) and Privacy CA scheme to tackle this issue.

3. Trusted virtual datacenter TVDc insures isolation and integrity in cloud environments. It groups virtual machines that have common objectives into workloads named Trusted Virtual Domains (TVDs). TVDc provides isolation between workloads by enforcing mandatory access control, hypervisor-based isolation, and protected communication channels such as VLANs. TVDc provides integrity by employing load-time attestation mechanism to verify the integrity of the system.

#### *Countermeasures for T8: malicious virtual machine creation*

1. Mirage In, the authors propose a virtual machine image management system in a cloud computing environments. This approach includes the following security features: access control framework, image filters, a provenance tracking, and repository maintenance services. However, one limitation of this approach is that filters may not be able to scan all malware or remove all the sensitive data from the images. Also, running these filters may raise privacy concerns because they have access to the content of the images which can contain customer's confidential data.

#### *Countermeasures for T9: insecure virtual machine migration*

1. Protection aegis for live migration of VMs (PALM) proposes a secure live migration framework that preserves integrity and privacy protection during and

after migration. The prototype of the system was implemented based on Xen and GNU Linux, and the results of the evaluation showed that this scheme only adds slight downtime and migration time due to encryption and decryption.

2. VNSS proposes a security framework that customizes security policies for each virtual machine, and it provides continuous protection thorough virtual machine live migration. They implemented a prototype system based on Xen hypervisors using tasteful firewall technologies and user space tools such as IPTABLES, xm commands program and contract-tools. The authors conducted some experiments to evaluate their framework, and the results revealed that the security policies are in place throughout live migration.

#### *Countermeasures for T10: sniffing/spoofing virtual networks*

1. Virtual network security Wu and et al. [9] presents a virtual network framework that secures the communication among virtual machines. This framework is based on Xen, which offers two configuration modes for virtual networks: “bridged” and “routed”. The virtual network model is composed of three layers: routing layers, firewall, and shared networks, which can prevent VMs from sniffing and spoofing. An evaluation of this approach was not performed when this publication was published. Furthermore, web services are the largest implementation technology in cloud environments. However, web services also lead to several challenges that need to be addressed. Security web services standards describe how to secure communication between applications through integrity, confidentiality, authentication and authorization. There are several security standard specifications such as Security Assertion Markup Language (SAML), WS Security, Extensible Access Control Markup (XACML), XML Digital Signature, XML Encryption, Key Management Specification (XKMS), WS-Federation, WS-Secure Conversation, WS-Security Policy and WS-Trust. The NIST Cloud Computing Standards Roadmap Working Group has gathered high level standards that are relevant for Cloud Computing.

*Table 3 Relationships between threats, vulnerabilities, and countermeasure*

<b>Threats</b>	<b>Vulnerabilities</b>	<b>Incidents</b>	<b>Countermeasures</b>
T1	V1	An attacker can use the victim's account to get access to the target's resources	Identity and Access Management Guidance Dynamic credential
T2	V3(a),V3(c)	Data from hard drives that are shared by several customers cannot be completely removed	Specify destruction strategies on Service-level Agreements (SLAs)
T3	V3(a),V3(c), V3(d),V3(f), V4(a-f), V5(a), V7	Authors in illustrated the steps necessary to gain confidential information from other VMs co-located in the same server as the attacker. Side channel	FRS techniques  Digital Signatures Encryption Homomorphic encryption
T4	V1, V2	An attacker can request more computational resources, so other legal users are not able to get additional capacity	Cloud providers can force policies to offer limited computational resources
T5	V1	Some examples are	Web application

		described in such as SQL, command injection, and cross-site scripting	scanners
T6	V6(a),V6(b)	A zero-day exploit in the HyperVM virtualization application that destroyed about 100,000 websites	HyperSafe TCCP (Trusted Cloud Computing Platform) TVDC (Trusted Virtual Datacenter)
T8	V5(a),V5(b)	An attacker can create a VM image containing malware and publish it in a public repository	Mirage
T9	V4(d)	Attacks against the migration functionality of the latest version of the Xen and VMware virtualization product	PALM TCCP VNSS
T10	V7	Sniffing and spoofing virtual networks [9]	Virtual network framework based on Xen network modes: “bridged” and “routed”

**REFERENCES:**

1. Mather T., Kumaraswamy S., Latif S. Cloud Security and Privacy. – Sebastopol, 2009.
2. Rittinghouse J.W., Ransome J.F. Security in the Cloud. In: Cloud Computing. Implementation, Management and Security. – CRC Press, 2009.
3. Ertaul L., Singhal S., Gökay S. Security challenges in Cloud Computing. In: Proceedings of the 2010 International conference on Security and Management SAM'10. CSREA Press. – Las Vegas, US. – Pp. 36–42, 2010.
4. Grobauer B., Walloschek T., Stocker E. Understanding Cloud Computing vulnerabilities. IEEE Security Privacy, 2010.
5. Subashini S., Kavitha V. A survey on Security issues in service delivery models of Cloud Computing. J Netw. Comput. Appl. 34(1): 1–11 2011.
6. Morsy M.A., Grundy J., Müller I. An analysis of the Cloud Computing Security problem. In: Proceedings of APSEC 2010 Cloud Workshop. APSEC, Sydney, Australia, 2010.
7. Jansen W.A. Cloud Hooks: Security and Privacy Issues in Cloud Computing. In: Proceedings of the 44th Hawaii International Conference on System Sciences, Koloa, Kauai, HI. IEEE Computer Society. – Washington, DC, USA. – Pp. 1–10, 2011.
1. Jasti A., Shah P., Nagaraj R., Pendse R. Security in multi-tenancy cloud. In: IEEE International Carnahan Conference on Security Technology (ICCST), – KS, USA. IEEE Computer Society. – Washington DC, USA. – Pp. 35–41, 2010.
8. Wu H., Ding Y., Winer C., Yao L. Network Security for virtual machine in Cloud Computing. In: 5-th International conference on computer sciences and convergence information technology (ICCIT). IEEE Computer Society. – Washington DC, USA. – Pp. 18–21, 2010.

**“THE GUARD” – ANTIVIRUS FOR PROTECTION COMPUTER  
FROM FUTURE VIRUSES**

**Summary.** *The article shows the program as a main defender of the file system filter driver. The main task is to protect the computer to prevent viral replication.*

**Keywords:** *“The Guard”, Window operating system, C#, protect from viruses, antivirus, defender.*

If you use a computer, read the newspaper, or watch the news, you will know about computer viruses or other malware. These are those malicious programs that once they infect your machine will start causing havoc on your computer. What many people do not know is that there are many different types of infections that are categorized in the general category of Malware.

*Malware* – Malware is programming or files, which are developed for doing harm. Thus, malware includes computer viruses, worms, Trojan horses, spyware, hijackers, and certain type of adware.

*Adware* – A program that generates pop-ups on your computer or displays advertisements. It is important to note that not all adware programs are necessarily considered malware. There are many legitimate programs that are given for free that display ads in their programs in order to generate revenue. As long as this information is provided up front then they are generally not considered malware.

*Backdoor* – A program that allows a remote user to execute commands and tasks on your computer without your permission. These types of programs are typically used to launch attacks on other computers, distribute copyrighted software or media, or hack other computers.

*Dialler* – A program that typically dials a premium rate number that has per minute charges over and above the typical call charge. These calls are with the intent of gaining access to pornographic material.

*Hijackers* – A program that attempts to hijack certain Internet functions like redirecting your start page to the hijacker's own start page, redirecting search



queries to an undesired search engine, or replace search results from popular search engines with their own information.

*Spyware* – A program that monitors your activity or information on your computer and sends that information to a remote computer without your knowledge.

*Trojan* – A program that has been designed to appear innocent but has been intentionally designed to cause some malicious activity or to provide a backdoor to your system.

*Virus* – A program that when run, has the ability to self-replicate by infecting other programs and files on your computer. These programs can have many effects ranging from wiping your hard drive, displaying a joke in a small box, or doing nothing at all except to replicate itself. These types of infections tend to be localized to your computer and not have the ability to spread to another computer on their own. The word virus has incorrectly become a general term that encompasses Trojans, worms, and viruses.

*Worm* – A program that when run, has the ability to spread to other computers on its own using either mass-mailing techniques to email addresses found on your computer or by using the Internet to infect a remote computer using known security holes.

Just like any program, in order for the program to work, it must be started. Malware programs are no different in this respect and must be started in some fashion in order to do what they were designed to do. For the most part these infections run by creating a configuration entry in the Windows Registry in order to make these programs start when your computer starts.

In order to prevent this and similar problems, Yoriqulov Miroqil created anti-virus program. The name of the program "The Guard" is a program called C # programming language was created under the .NET Framework 2.0 component, mainly for protection from external memory, which can be transmitted by viruses. In other words, the program will guard the external memory system. The program

has interface. Assigned to the program in conjunction with the Windows operating system and the functionality of the operating system to boot. All actions performed by the application program is carried out through a messenger window. The guard anti-virus program external memory connected to the computer immediately after the "Quick Check" process and will request the user full control window. Application performance advantages of the program is that the program is in the process of preventing the use of all of the files, may be transmitted from an external memory organ that function. This program is carried out by the panel window function. The program is set to launch an external program memory protection system. This feature can be disabled via the button above. Information about the status of the program will be using the same buttons. The guard anti-virus program, "according to the treatment of disease prevention a priority," based on the idea of work. Identified by viruses without altering the program to maintain the quarantine service is also available. Program is able to detect all types of viral tabs. It also should be noted that the increase of viruses, they take us through the files you want to view, and a basis can be explained by the need to put the file invisible. At the same time, the virus will be filed spontaneously load (this is mainly based on the Windows Directory) or in our computer will allow transmission of viral replication.

In this and similar cases of obvious external memory connected to the computer immediately "guard" of the anti-virus program of external memory is invisible files and folders visible position.

The program is the main defender of the file system filter driver. He is in conjunction with Windows and communicate directly with the Windows kernel. In this respect, it has the ability to protect. Used operating system files "Taker" anti-virus program will take control of the process and at the same time, he read each file control into their own hands.

The program is self-renewing. In particular, its virus database update and automatically search for new viruses.

Another advantage is that all types of Windows platforms. In addition, even the best protection. It may be an increase in self-files of all types of viral detection algorithms. This is a "watchman" anti-virus software protection system to achieve better results. In other words, the software algorithm to determine the virus database is not a virus and protect your computer from viruses. This creates the possibility of further protection against viruses created. Another idea put forward in the program. At the same time, the main task is to protect the computer to prevent viral replication. Another algorithm is that the content of the files of all types of the virus can be transmitted programs are also taken into custody. This time, which does not create such a program and this program window (this means that the software creates a file when the user should be visible window) such that all of the files that are used to record the movement of or its entire movement ban will be. This depends on the willingness. Put simply, the program is offering the latest in anti-virus, but the virus detection algorithm dealt with. Although some software to prevent viral replication.

## **«ANTIDouble» - DEVELOPED WORK SPEED AND CLEAN COMPUTER FROM UNWANTED FOLDRES**

*A. , D.D. Avezova*

***Summary.** Remove double occurrences from any list. Find potentially unwanted program. Works only in part screen (not full).*

***Keywords:** double files, doubled folders, «Antidouble»*

«Antidouble» software is a computer program that detects, prevents, and takes action to disarm or remove folders, such as unwanted and useless. You can help protect your computer against such kind of folders by using «Antidouble» software. Computer folders are made by computer user or spread themselves to

other computers and throughout the Internet. To help prevent the most current files, you must update your «Antidouble» software regularly. You can set up «Antidouble» software to update automatically.

The best way to stop a computer infection from folders is to prevent it as this is a much less tedious task than attempting to clean up your memory after it has already been infected. There are a number of steps that you can take to ensure the safe place and prevent an infection of your system. Checksums are a form of encryption that can help show if a file has been altered from its original state and most reputable names will post a checksum to ensure a file has not been changed or the file is the correct file. Make sure that you have good program such as «Antidouble» in place on your network. You can do this in Windows 7 by using the Windows Update feature. Next, you will want to click icon to look for the folders if there are any. On Windows XP you will want to run the command. Next, you will want to click Automatic Updates tab and finally click the ok button. However, it is not right because this program has not been practiced in other versions of Windows. But there are plans to develop «Antidouble». Most importantly make sure that you have a trusted «Antidouble» program installed on your system, that it is up to date, and that it is active. There are a number of good sights of program to choose from including «Antidouble». Which one you use may simply come down to personal preference. With «Antidouble», you can remove double occurrences from any list, specifying how elements are separated in your list. «Antidouble» is a system optimizer program that is typically added via install that had bundled into their installation this program. If it is first time there is no idea where did it come from, so it's not surprising at all so that it is assumed.

«Antidouble» it is technically not an application for mobile users, but it does exhibit plenty of ideas for future mobile system. The program is used to find potentially unwanted program. How to remove doubled files and folders from your computer? The answer is here.

«Antidouble» is an application offered by me, Abdulla . Some people want to remove unwanted doubled folders. This is difficult because removing this manually takes some knowledge regarding removing Windows programs manually and it is wasting time. The best SIMPLE way to remove them is using new program that is going to be presented. First of all, the program that is given by application maker must be installed and it is very easy:

Icon, which represents two people with x symbol, should be clicked twice and computer will automatically install the new program. The program is **designed** using classic style without any decorations. At the top left list of folders is given but at the first time it is empty. To add new folder to the list there is “add” function at the top right (for removing function “delete”). There are some setting choices that user should note for comfort and mark search sector. The first is “Scan second folders”. This function is compulsory, because it opens door to use another choice function. And now user should mark search sector which divided into three types:

- Same name
- Same size
- Same composition

According to necessity everyone can mark one, two or three of them. It gives possibility to make comfort.

After marking needed functions “start scan” should be clicked and program starts to run. Doubled files will be found and the operation takes several seconds.

Number of doubled files/folders will be given but for more user should click “See results”.

If you are a new user and do not know how to use the following program, so do not worry. Program maker added two more functions for users’ convenience:

- ❖ About program
- ❖ Information

## Features

- ◆ provides information about unwanted files and folders
- ◆ supports for clean in items
- ◆ saves your time
- ◆ works only in part screen (not full).

The application registry is an installation, that Windows and its applications run their settings. Surely, it is used to install «Antidouble». It contains hundreds of thousands of entries. Some of the entries may be slightly outdated — maybe you have uninstalled a program and it left a key or two behind, or maybe there is a file extension with no associated application.

«Antidouble» scan your registry for these outdated entries and offer to remove them. Because there are so many folders entries to go through, this program may sometimes also remove useful files entries, causing you problems but the original version is saved in computer memory. The memory is full of useless files from people who have run registry cleaner and encountered problems. In a best-case scenario, «Antidouble» will remove a few hundred unnecessary entries and reduce the size of your necessary area by a few kilobytes. This makes no different in perceptible performance.

If you must use an «Antidouble» cleaner, you do not have to pay anything. Using a free cleaner, such as the ««Antidouble»» cleaner included with the respected new utility, is good enough. You should **always pay attention when installing program** because often, a software installer includes optional installs, such as this «Antidouble». Be very careful what you agree to install.

**Always opt for the custom installation** and deselect anything, which is not familiar, especially optional software, which you have never wanted to make and install in the first place. It is understood, that you should not install software, which you do not trust. It is recommend using the «Antidouble» for living without any confusion. You can also use the following manual method, which is useful if

this extension cannot be installed with the install or if you are using an old version of Windows that does not have the necessary function: Once installed go to primary program and computer starts running the program automatically.

## **METHODS OF IMPROVING THE ACCESS CONTROL SYSTEMS**

*A.T. Imamaliyev, N.K. Khodjakulova*

**Summary.** *The article considers the methods of improving the access control systems.*

**Key words:** *access control systems (ACS), integrated complex security systems (ICSS)*

Orderly access of employees and visitors, as well as transport to the territory and premises of the protected object is organized check mode. It is a complex organizational and legal restrictions and regulations, technical decisions and actions of security, which establishes the procedure for crossing checkpoints in a separate building (room) people, transportation and material resources.

Access control is implemented using software and hardware tools, organizational and administrative measures, the totality of which is a system of access control systems (ACS) as the object itself, and in some of its premises.

The objectives include the subsystem of access control of the integrated complex security systems (ICSS) of the object are:

- Preventing unauthorized access to the control areas with limited access, without creating obstacles to the passage in the area with free access;
- Ensuring compliance with the necessary conditions of the object within the regime and the implementation of the relevant responsibilities of personnel of the object depending on the specific conditions and characteristics of the business processes at the facility, stay on it people, vehicles.

1. Protection against unauthorized access to the protected area (room, area) in the mode of removing them from the protection of:

- Restricting access of staff to the rooms;
- Temporary movement control personnel (visitors) on the project.

2. Monitoring and accounting personnel access (visitors) to the protected area (room, area) in the mode of removing them from the protection of:

- Control of protection while on duty;
- Time-keeping of staff time;
- Fixing the time of arrival and departure of visitors;
- Temporal and personal control of the opening of the interior (by whom and when open).

3. Automation of the capture / removal of the protected object (rooms, areas) by means of identification as part of ACS alarm control (AC) and object devices Transmission systems (TS).

4. Registration and release of information about the attempts of unauthorized access to the secured area.

5. Collaborate with security-fire alarm systems (SAS) and television secure system (TSS) (at operation of the broadcasters are blocked, or vice versa, for example, a fire door unlock the protected area).

6. Protection and control of access to computers of Automatizing worker places monitoring station (AWP MS) and Automatized worker place integrated security system (AWP ISS).

7. Protection against unauthorized access to information. Solution of these problems in hardware and software and hardware security systems based on the organization of the identification and authentication of identity.

Identification involves recognition of user inherent or assigned to him identifier. At the same time, comparison presented identifier with a full list of assigned identifiers.



Authentication involves establishing identity based on user identification features. At that, the comparison of the identification data with the standard (a way) that is stored in the system memory for the user.

An example of the block diagram of ACS presented in Figure 1.

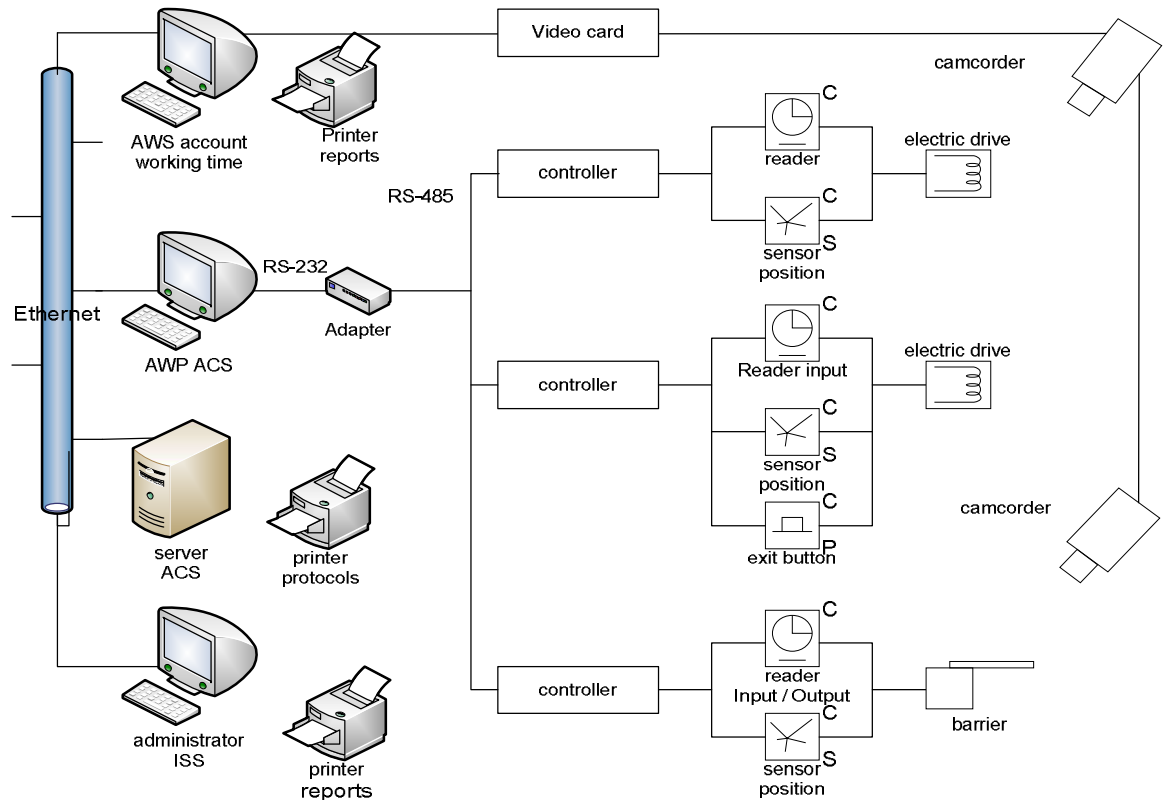


Fig. 1. Block diagram of the system of access control.

Classifications of modern security systems tend to perform the following technical and functional featured:

1. By way of control:

- Independent - to control one or more actuators not transmit the information to the central control unit and the control of the operator;
- Centralized (network) - to control the actuator to the exchange of information with the central control and system monitoring and control by the central control unit;
- Universal or distributed (combined) - includes features of both standalone and network systems, working in online mode under the control of the central control and passing in offline mode in the event of failure in the network

equipment, the central unit or the connection is broken 2. The level of identification:

- Single-level (identification is carried out by a single feature, such as reading the card code);

- Multi-level (identification is carried out on several grounds, for example, by reading the code and biometric data).

3. According to the number of controlled access points (controlled seats):

- A small tank (not more than 84 points);

- Medium size (from 84 to 256 points);

- High capacity (over 256 points).

4. By functionality into four classes:

- 1st - systems with limited functions;

- 2nd - system with advanced features;

- 3rd and 4th - multifunctional systems.

5. The level of system security against unauthorized access to information.

User ID. This is a device or the user determines a sign by which. IDs can be magnetic cards, contactless proximity card, key Touch Memory, various remote controls, the image of the iris, fingerprint, palm print, and many other physical symptoms. Each characterized by a certain identifier unique binary code. In the system, each code is associated with information on the rights and privileges of the owner identifier. Now, the following types of cards:

Contactless radio frequency (PROXIMITY) cards - the most promising at the moment type of card. Contactless cards are activated at a distance and do not require precise positioning, which ensures stable operation and ease of use, high throughput. Reader generates electromagnetic radiation of a certain frequency and, when making the card within range of the reader, this radiation via the built-in card antenna feeds the chip card. After receiving the necessary energy to work on the card reader sends a unique identification number using an electromagnetic pulse a certain shape and frequency.

Magnetic cards - the most common option. There are cards with low coercive both highly magnetic stripe and recording on different tracks.

Wiegand card- called after the scientist who discovered the magnetic alloy with a rectangular hysteresis loop. Card located inside the wire segments of the alloy, which, when they move past the reading head allows to read information. These cards are more durable than magnetic, but also more expensive. One disadvantage - that the code entered into the card during manufacture forever.

Bar code card - the card is applied to a bar code. There are more sophisticated variant - bar code closes material transparent to infrared light only, reading occurs in the IR region.

Key-fob "Touch memory" - a metal tablet in which is located the chip ROM. When the tablets touch reader, the memory controller is sent tablets unique identifier code.

The same card can open the door as one and serve as the "key" to a few doors. For temporary employees and visitors are issued temporary or occasional "skip" - cards with a limited validity period.

To increase the level of safety in the organization of access to the protected area can be used equipment access points additional equipment. For example, you can organize a barring double pass (anti pass back), i.e. the ban on pass through the same point of passage by not released from the premises. The implementation of the prohibition of double passage is only possible for a fully controlled access points as well as understand that a man entered, but did not come out; you can only pass, equipped with two readers - one for input and the other - on the way out. This feature is introduced in order to obstruct the transfer ID to another person.

As an additional measure of protection against unauthorized passage of foreign function is used video identification. That is organized or not to display computer monitor photo of the owner ID-cards (from the database). The solution of the passage may be taken automatically or with confirmation from either the controller or security guards at the entrance.

An important element in the composition of the ACS is the reader that plugs into the controller and is part of the equipment of the door - some obstacles (doors, gates), through which access has to be regulated. Access point can be controlled by the input or fully controlled. In the first case, the passage is equipped only with reader input, output, or made available on the button. In the second case is organized bi-directional control passage through one door with the installation of two readers - one for input and one - output.

Selecting structure ACS inextricably linked to the security requirements of a particular object. When choosing a system must take into account that the possibility of carrying out analytical works using modern software and hardware security systems is a necessary quality of the system.

The effectiveness of the use of any technical means ACS technology-independent access control and training of the technical staff.

Basic conditions:

- ACS compatibility with all types of physical actuators (fences, gates, turnstiles);
- compatibility with technical detection systems and fire alarm systems, control primary and secondary lighting, communications and alarm systems, video surveillance systems;
- the number of access points must comply with the required access control, given the prospects of development;
  - complexity of ACS should match the size of the enterprise and flows employees;
- standalone controller must be designed for the use of various types of readers;
- implementation of additional features related to the personnel records of the enterprise;
- ability to easily expand the system and the transfer of equipment in the network mode.

# MAKING THE PROJECT ELECTRON SCHEDULE OF THE HIGHER EDUCATIONAL INSTITUTIONS

*N.B. Qodirov, S.Ergasheva*

*Summary.* This article provides an analysis and evaluation of the current and prospective education and shows out the main problems of distributing the schedule. In this article, we can know how to solve that problem. The meaning of the article is aimed at work process facilitation and time saving.

**Key words:** higher education, lesson, classroom, schedule, Access, Delphi, ICT, database.

The aim of the project focused on making the program that engages system of higher education, which perfectly distributes on teaching and classrooms.

This project is to developing a system connected to Access that works on programming language of Delphi by using database.

## **The main stages of implementation:**

- To bring the current paper forms of timetables into the electronic form system;
- working on algorithms by using databases;
- creating the tables on the basis of information in the form of graphs improvements and modifications
- a positive impact on software development in Uzbekistan and capacity building in the field of ICT
- shape the future of our e-improvement and enrichment of the schedule, followed by the new information and other higher education institution.

## **Prospect for the future:**

- Of course, for development need to be competitive, so this project will require the creation of a number of species;

- Right organizing distribution of the classrooms and time of the lessons in the sphere of higher education system
- However, distribution of students with a choice.

In recent years, the distribution of institutions of higher education systems learning lessons and classrooms associated with the efforts to overcome problems in maximum degree.

**The project's goal and objectives:**

- Electronic distribution of lessons condition
- to carry out the work based on database;
- the evaluation of the shortcomings on making schedule in a electronic form quickly and easily
- All full use of the opportunities created.

Earlier this programming environment is intended only to create software for the Microsoft Windows operating system, later on, the GNU / Linux and Kylix systems adapted for this, but in 2002 production stopped after the number of Kylix 3, as soon as the Microsoft.NET system support has been declared.

Delphi is the result of Pascal programming language developed Being the successor of the Turbo Pascal language development. Pascal is going to be completely created using the software.

Delphi can be performed in the well-known programs following these softs:

- Borland products: Borland Delphi, Borland C ++ Builder, Borland JBuilder 1 and 2.
- Administrator / database creation: MySQL Tools (Administrator, Query Browser), Toad.
- Engineering software products: Altius Designer/proton (Electronics Project)
- Graphical environment: FastStone Image Viewer, FuturixImager, Photofiltre
- Internet data transmission: Skype (VoIP and IM), QIP and QIP Infium, The Bat! (e-mail client), PopTray (e-mail checking), FeedDemon (RSS / Atom news feed), Xana News (study group), Xnews (study group)

- Music: FL Studio (FruityLoops)
- Programming environment: Dev-C ++ (IDE), dunite, Game Maker (games) Help & Manual, Inno Setup (application software)
- web-programming: Macromedia HomeSite (HTML-editor), TopStyle Pro (CSS- editor), Macromedia Captivate
- Web browsers (MSIE basis): Avant Browser, Netcaptor
- Additional control programs (Utility): Spybot - Search & Destroy, Ad-Aware, jv16 PowerTools, Total Commander, Copernic Desktop Search, Power Archiver, MCubix Download Master (Master of transfers)

As we know, our university, that Tashkent University of Information Technologies faculties are located in one building In contrast to other higher education institutions. In addition, this in turn university training courses for employees of the Department of times and the classrooms responsibility to well-organized and systematic manner. By the way, I am going to show some examples on the subject of this project's tables that consists of some columns and rows. Below you can see it:

1<sup>st</sup> table's screenshots

Имя поля	Тип данных
ID	Счетчик
Subject_of_teacher	Короткий текст
Day_of_week	Короткий текст
Group	Короткий текст
Pair	Числовой
Type_of_subject	Короткий текст
Room	Короткий текст

ID	Subject_of_	Day_of_wее	Group	Pair	Type_of_subject	Room
1	English	Monday	340-11	1	Practice	144
2	English	Monday	113-13	3	Practice	143
3	English	Monday	421-12	2	Practice	144
4	English	Monday	321-11	4	Practice	144
5	English	Tuesday	212-12	2	Practice	143
6	English	Tuesday	411-14	3	Practice	144

2<sup>nd</sup> table's screenshot

Students	
Имя поля	Тип данных
ID	Счетчик
Day_of_week	Короткий текст
Subject	Короткий текст
Pair	Числовой
Type_of_subject	Короткий текст

ID	Day_of_week	Subject	Pair	Type_of_subject
1	Monday	Physics	1	Lection
2	Monday	Math	3	Practice
3	Monday	Electronics	2	Laboratory
4	Monday	Informatics	4	Practice
5	Tuesday	Psychology	2	Lection
6	Tuesday	Receivers	3	Lection

This project is a preferred aspect of the program, the sequence of commands for working with the database is simple, short, and method development plans. In addition, in terms of the relevance of lessons and studying the distribution of the auditorium stage to the next place the higher functions of the above two steps are carried out on the basis of a one-bonding.

In conclusion, I can say that there is a need to establish a program using available resources taking into account the above-stated objectives this project.

### REFERENCES:

1. Uzbekistan Country profile. Library Congress Federal Research Division, 2007.
2. Delphi 6, Borland Software Corporation, 2005.
3. Billings,K.(1983). Researchon school computing. In M.T. Grady & J.D. Gawronski (Eds.), Computersin curriculum a dinstruction (pp.12-18). Alexandria, VA: Association for Supervision and Curriculum Development.
4. Flavell,J. (1977). The development of knowledge about visual perception. Nebraska Symposium on Motivation, 25. – P.43-76.



## USING THE INTERNET TO CULTURE

*F.Maxmudov, S.Ergasheva*

**Summary:** *The article puts into practice about how using internet to culture, it helps for our new generation. In my opinion, this theme must be entered to education system as a subject. Our outlook must not be lost.*

**Key words:** *Social activity, wasting time, unpleasant consequences, computer games, harmful elements.*

Today, young people, especially children and teenagers using the Internet to compare two circumstances in which one is correct.

The last time that the heart is troubled observed in such cases. Psychologists explain how to do it?

Today, Internet users can be conditionally divided into two categories. The first categories based on the professional or scientific research in order to obtain the necessary data and information to the internet, according to the interest of the other categories are simply those who, for example, pornography, dating sites or on-line games into the day to hold talks.

The virtual world is a man Manipulator. Manipulator agree with this addiction is through submission. Now children are wasting time and money in Internet cafes. Observations show that, on-line games are becoming much popular between teenagers. A teenager is a person's physical and social development of a specific period. A boy or girl in the same period of aggressive given the kind of on-line games, this could lead to unpleasant consequences.

Human perception of time in the virtual world system is broken, decreased social activity. Time would notice because it was in front of a computer. Virtual instruments with the negative impact of moral crisis, but a person's immune system to hold the spine and eye diseases.

In addition, five or ten years ago would be adjacent playground filled with children. In the meantime, many kids greeted us every step of the common Internet

cafes. Children are interested in computer games. Indeed, the knowledge and skills of the children of modern information technologies have been formed in the early pleasuring. However, this resulted in a loss of the eye, which cannot be closed.

We are a student, when the library search time will be had. Today, students at any literature you can find an electronic copy of the Internet, the extra time and effort and this is admirable.

Psychology students follow, and have conclude that the Internet personal development, analysis, and analytical skills, creativity, and weakens the memory. We and our previous generation Farobiy, Beruniy learned to memorize hundreds of lines. Now, four strings is stored in the memory anymore, and the rest of the personal computer to the memory of what happened, already a lot of young people do not generally think. Computer, in particular, the Internet our children to live without thinking and shocked and worried from that.

General recommended that students created the science of psychology textbook. This course of lectures, laboratory assignments and psychological tests designed to get along with the rest of intellectual games were also included. A week later, I asked about the students' textbooks. Unfortunately, many students in the "Games is awesome ...", "Just leave the game in the tenth round way?" I heard the words. The majority of the Internet as a source of information is not much entertainment as a means of looking at the evidence. Stars of life, the world of film, dating, pornography sites, the nature of violence, aggression based games have not yet formed as children, young people need to keep going from the virtual world to be taking leave.

Research into the site, you can take advantage of when you read in the study or pornographic sites advertising will appear on the screen. Focus on the mental capacity of this advertising, the information is to be used to pursue human resources in vain. Some human psychologically, sadism and computer games addiction vaccines. This is to prevent children and young people on the Internet cannot oust, of course. This demand, not behind the times. The most direct way,

and in my opinion, children must be taught what is good and what is bad in the virtual world, they need to configure the use of the Internet culture. At the same time, the primary responsibility of parents and teachers are responsible.

Yes, today the Internet capabilities of its aspects, no one can deny. Only in shaping the culture, children need to be taught. Therefore, protecting the mental and spiritual world of the harmful elements Development Foundation created. Spiritual perfection is an important factor in the development of the society.

**Internet culture** "Today, the world of the Internet era has come, Internet TV, Internet radio, e-mail, online video and other new media distribution technologies are rapidly developing, expanding their audience and influence growing need to speak about it. This is of great interest to the media, mainly young people, and if we take into account the wide use of flexible, in fact, it is not difficult to realize how important the issue. I. Karimov said in 2011 that employees of the press and mass media Greeting Information plays an important role in all stages of the development of mankind and the subject of today's diverse and intense life, the processes of globalization, the information is more important issue, and now the possession of modern information systems as a catalyst for democratic development of the country. President under the leadership of structural reforms, created the perfect legislative framework, and in the technological modernization of the telecommunications, industry in the country because of the modern media industry was built. During the past years the spiritual development of the younger generation, the realization of the right to information, freedom of information, in order to ensure the necessary technological conditions and legal guarantees. Everyone has an opinion and freedom of speech, he wanted to seek, receive and disseminate information on development of national laws and constitutional norms. In addition, the international information networks and Internet access to the World Wide Web has resulted in the creation of the conditions for the recognition of norms laws. In particular, today in 1254 in the field of mass media outlets, of which 100 TVR, 1032 Internet cafes, 939 Internet provider, 187 state information

resources, "ZiyoNET" youth information portal, 1026 information and library facilities are in operation. The number of Internet users is close to nine million. All citizens, especially young people, an expression of the constitutional right to information. Global information space, there is a real eye, which is now one of the issues concerned and alarmed the public, of course, an unhealthy interest in the information, the effectiveness of the conflicts and contradictions aggressive information suicide promoting easy ways to 9 thousand, erotic content more than four thousand sites, computer games, violence and evil, the most militant spirit cruel war, killing, shooting, bombing, etc., the presence of Internet sites, the national information space intervention. The information to be quickly over the Internet, the majority of users are young people. 200,000 people Odnoklassniki.ru, 90,000 nearly Facebook, more than 40,000 Moy Mir, more than 15,000 Bkontakte.ru are regular users of the site. It should be recognized, Uzbekistan Doira.uz, vsetut.uz, odnoklassniki.uz, sinfdosh.uz, muloqot.uz, olam.uz total crash of the above amount does not yet registered. These numbers are national site for young attractive, meaningful, quality, interesting and exciting and give serious attention to the issue. National site go ahead, other foreign sites such as "attractive" and expansion of the national sites will be the first to apply. Liberalization of the information industry at the same time, the long-countries in a variety of political, ideological and other forces about 120 public attacks on the organization is working in the interests of their harmful mass communication means, the abuse of freedom of information, the young generation of information threats to life through awareness and beliefs formed youth diversion, to take their minds and hearts to make increase is not a secret. Disadvantaged young people of the world, a number of legal mechanisms to protect the flow of information created. In particular, the international practice of "cyber crimes" of the Convention, "safe for minors on the Internet and online resources" recommendations of the Parliamentary Assembly of the European Union, "the Rights of the Child," the UN Convention, "Youth Protection" Germany, "a minor public information the negative effects of

protection works, "Lithuania and" the protection of children's health and development of harmful information "to the laws of the Russian language. National legislation young unhealthy information protection mechanisms. In particular, the Republic of Uzbekistan "On the basis of the state youth policy" Law "in violation of the ethics among young people in the Republic of Uzbekistan, including violence, shameless and any actions aimed at promoting the same man", "On guarantees of the rights of the child" The term "pornography, violence and abuse, offensive to human dignity, a harmful effect on children and crime that led to the mass media, literature distribution, and ban films" have been identified. Recently, the "Education Center" meeting "Globalization of Information and Youth Spirituality" on the last video in the Legislative Chamber of Deputies, an expert in the field of information and experts, scientists, representatives of youth violent attacks of ideas and information relevant organizational and legal framework for protecting young people stressed the need to improve. Globalization of today's information age, spiritual and moral upbringing and education in order to increase the effectiveness of a number of suggestions. The information age, the young people flocking to take advantage of the information, in particular, receive protection from unhealthy information and communication tools you will need to know the use of knowledge and experience. In this regard, they are adults, especially parents and teachers in need of spiritual support. In addition, the participants by the younger generation of media literacy and the use of the Internet culture, and made specific recommendations on the development of the national segment of the Internet. The conference was in the process of globalization of information space to improve the spiritual and moral education of young people to develop a comprehensive action plan, the implementation of large segments of society: the state and the government, civil society, non-governmental organizations, local self-governing bodies, parents and noted that the purpose of the involvement of teachers. In fact, there are threats in the information, instead of the national information space limit. Thus, young new information created, they

are one of the main objectives of protecting the sanctity of the spiritual world. At the same time, the practice of our deputies and developed democratic countries of the world on the basis of the information against the expansion of the legal mechanisms for the improvement of the system of urgent legislative procedure will be necessary. In fact, the morality of the youth participants will not be allowed to work with indifference. The Legislative Chamber of the Oliy Majlis deputy, member of the faction.

To sum up Islom Karimov said that everything has advantages and disadvantages thus we must control our new generation because they are our future.

## **CLOUD COMPUTING**

***G.Nurmurodov, G. Maksumova***

***Summary.*** *Cloud computing is becoming a powerful network architecture to perform large-scale and complex computing. In this paper, we will get answer to questions about Cloud Computing, Iaas, PaaS, SaaS? In addition, future perspectives of cloud computing.*

*Key words: cloud computing, Web-based, remote, redundancy, visualized, infrastructure, platform, software, private, public, hybrid*

### **Introduction**

Let us say you are an executive at a large corporation. Your particular responsibilities include making sure that all of your employees have the right hardware and software they need to do their jobs. Buying computers for everyone is not enough. You also have to purchase software or **software licenses** to give employees the tools they require. Whenever you have a new hire, you have to buy more software or make sure your current software license allows another user. It is

so stressful that you find it difficult to go to sleep on your huge pile of money every night.

Soon, there may be an alternative for executives like you. Instead of installing a suite of software for each computer, you would only have to load one application. That application would allow workers to log into a Web-based service, which hosts all the programs the user would need for his or her job. Remote machines owned by another company would run everything from e-mail to word processing to complex data analysis programs. It is called **cloud computing**, and it could change the entire computer industry.

Body

Cloud computing architecture

When talking about a cloud computing system, it is helpful to divide it into two sections: the **front end** and the **back end**. They connect to each other through a network, usually the Internet. The front end is the side the computer user, or client, sees. The back end is the "cloud" section of the system.

The front end includes the client's computer (or computer network) and the application required to access the cloud computing system. Not all cloud-computing systems have the same user interface. Services like Web-based e-mail programs leverage existing Web browsers like Internet Explorer or Firefox. Other systems have unique applications that provide network access to clients.

On the back end of the system are the various computers, servers and data storage systems that create the "cloud" of computing services. In theory, a cloud computing system could include practically any computer program you can imagine, from data processing to video games. Usually, each application will have its own dedicated server.

If a cloud computing company has many clients, there is likely to be a high demand for a lot of storage space. Some companies require hundreds of digital storage devices. Cloud computing systems need at least twice the number of

storage devices it requires to keep all its clients' information stored. That is because these devices, like all computers, occasionally break down. A cloud computing system must make a copy of all its clients' information and store it on other devices. The copies enable the central server to access backup machines to retrieve data that otherwise would be unreachable. Making copies of data as a backup is called **redundancy**.

#### Service models

SaaS, or Software as a Service, describes any cloud service where consumers are able to access software applications over the internet. The applications are hosted in “the cloud” and can be used for a wide range of tasks for both individuals and organizations. Google, Twitter, Facebook and Flickr are all examples of SaaS, with users able to access the services via any internet enabled device. Enterprise users are able to use applications for a range of needs, including accounting and invoicing, tracking sales, planning, performance monitoring and communications (including webmail and instant messaging).

Platform as a Service, often simply referred to as PaaS, is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet. PaaS services are hosted in the cloud and accessed by users simply via their web browser.

Infrastructure as a Service (IaaS) is one of the three fundamental service models of cloud computing alongside Platform as a Service (PaaS) and Software as a Service (SaaS). As with all cloud computing services, it provides access to computing resource in a virtualized environment, “the Cloud”, across a public connection, usually the internet. In the case of IaaS the computing resource provided is specifically that of virtualized hardware, in other words, computing infrastructure. The definition includes such offerings as virtual server space, network connections, bandwidth, IP addresses and load balancers. Physically, the pool of hardware resource is pulled from a multitude of servers and networks



usually distributed across numerous data centers, all of which the cloud provider is responsible for maintaining. The client, on the other hand, is given access to the virtualized components in order to build their own IT platforms.

### Deployment models

A private cloud is a particular model of cloud computing that involves a distinct and secure cloud based environment in which only the specified client can operate. As with other cloud models, private clouds will provide computing power as a service within a virtualized environment using an underlying pool of physical computing resource. However, under the private cloud model, the cloud (the pool of resource) is only accessible by a single organization providing that organization with greater control and privacy.

The most recognizable model of cloud computing to many consumers is the public cloud model, under which cloud services are provided in a virtualized environment, constructed using pooled shared physical resources, and accessible over a public network such as the internet. To some extent they can be defined in contrast to private clouds which ring-fence the pool of underlying computing resources, creating a distinct cloud platform to which only a single organization has access. Public clouds, however, provide services to multiple clients using the same-shared infrastructure.

A hybrid cloud is an integrated cloud service utilizing both private and public clouds to perform distinct functions within the same organization. All cloud computing services should offer certain efficiencies to differing degrees but public cloud services are likely to be more cost efficient and scalable than private clouds. Therefore, an organization can maximize their efficiencies by employing public cloud services for all non-sensitive operations, only relying on a private cloud where they require it and ensuring that all of their platforms are seamlessly integrated.

### Conclusion

Considering the recent advances and offerings in Cloud Computing, it is clear that this technology is here to stay. Currently all of the big players in the IT industry such as Google, Microsoft, Amazon, etc... have some sort of Cloud Computing offering, and although there are not currently any standards for Cloud Computing IBM has started **The Open Cloud Manifesto** as a step towards standardizing Cloud services.

Gartner Research has also indicated that Cloud Computing will be as influential as e-business and has continued to feature it in its top strategic technologies.

### **REFERENCES:**

1. Carr, Nicholas. "'World Wide Computer' is on horizon." USA Today. February 25, 2008.
2. Hickins, Michael. "Cloud Computing Gets Down to Earth." eWeek. January 21, 2008. - P. 14.
3. <http://www.howstuffworks.com>
4. <http://www.wikipedia.com>
5. <http://www.google.com>

### **ABOUT FILTERING WEB SITE'S CONTENT**

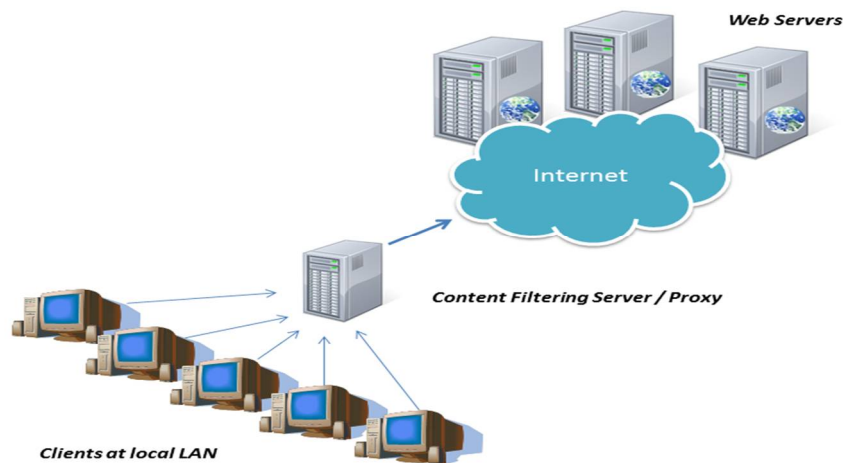
*U.M.Rayimkulov, N.K. Khodjakulova*

*Summary.* The article considers the filtering web site's content.

*Key words:* web, filter, Internet surfing, anti-virus, real-time

A *Web filter* is a program that can screen the contents of an incoming Web page to determine whether some or all of it should not be displayed to the use. The filter checks the origin or content of a Web page against a set of rules provided by company or person who has installed the Web filter. A Web filter allows an enterprise or individual user to block out pages from Web sites that are likely to

include objectionable advertising, pornographic content, spyware, viruses, and other objectionable content. Vendors of Web filters claim that their products will reduce recreational Internet surfing among employees and secure networks from Web-based threats. Web filtering software can hide of some sectors of the public not to block. Before working with web filtering software antivirus or anti-virus software installed on your computer.



Currently, the most frequently used filters are used in E-mail or Web pages. Content filtering will use for purposes of safe, but content filtering will use for implementation of the programs.

Real-time content analysis can be a bottleneck in Web filtering. This work presents a simple, but effective early decision algorithm to accelerate the filtering process by examining only part of the Web content. The algorithm can make the filtering decision, either to block or to pass the Web content, as soon as it is confident with a high probability that the content should belong to a banned or an allowable category. The experiments show the algorithms can examine only around one fourth of the Web content on average, while the accuracy remains good: 89% in the banned content and 93% in the allowable content. This algorithm can complement other Web filtering approaches to filter the Web content with high efficiency. Massive volume of Internet content is widely accessible nowadays. One

can easily view improper content at will without access control. For example, an employee may watch stock information during office hours. Web filtering products can enforce the access control. The up to date products have widely adopted content analysis besides the URL-based approach. Content analysis works with the URL-based approach to relieve the efforts of maintaining the URL list and to reduce the number of false negatives. The analysis classifies the Web content to a certain category first, and makes the filtering decision, either to block or to pass the content. Despite the ongoing research on image and video content classification, text classification is typically the most efficient approach to Web content analysis. Many text classification algorithms have been around with high accuracy. They are often assumed to run off-line, so their execution time is rarely discussed. However, the efficiency of these algorithms is critical because slow content analysis in Web filtering incurs long user response time. The issues of accelerating the analysis should deserve attention. This work presents a simple, but effective early decision algorithm to accelerate the filtering from the observation that the filtering decision can be made before scanning the entire content, as soon as the content can be classified into a certain category. A fast decision is particularly important since most Web content is normally allowable and should pass the filter as soon as possible.

Some Web filter products also provide reporting so that the installer can see what kind of traffic is being filtered and who has requested it. Some products provide soft blocking (in which a warning page is sent to the user instead of the requested page while still allowing access to the page) and an override capability that allows an administrator to unlock a page.

While a Web filter can screen out a certain amount of malware, security experts advise other forms of protection as well, such as the installation of desktop and network antivirus software. A Web filter is often installed as part of a proxy server and firewall.

Content filters can be performed through use of the software or solution-based on hardware.

Gateway is of the first protect device the internal and external perimeters. It manages incoming and outgoing data in sectorial local or protected technology (ICT) and provides protection of ICT by using data filtering provides checking information on established basic criteria and decides to sign packages into system. Branch will display all packets that is passing through the network, and test packages by accordance with the rules specified in both directions, and solves permission for them. In addition, the gateway performs protection between two networks, that is, protects a network from open external network. Advantages of protective equipment that listed below, especially function of filtering packages are more effective for protection against DOS attacks.

Packet filtering controls:

- Physical interface. Where does come the package;
- IP address of source;
- IP address of the recipient;
- Transport ports of source and recipient.

Data processing system in the the order permitted by copyright ownership can guarantee access to methods.

There are three method of controlling access:

The first of these is based on the use of filter arrows. The arrows point of view of software packages to send addresses, packet analysis algorithm is carried out. The second is based on the use of packet filter. In this case, it is prohibited that installation of free using that leaves borders in network or it's part. All packages are held in check, defined which packages should be spent or brought back. Third, the gateway of applications are used. This is the most comprehensive and valuable protection. Access to the research carried out at the DB, then gather all the information necessary to do it. Establish free use accesses will only after a

thorough examination. During the day time, which can be controlled. The time that may be used during the day will be controlled too.

Hardware or software tools are used for filtering. It divides filtering process signals or data stream in a few need parts.

Data selection condition. The filter refers information that access to given conditions.

Broadcast total current required criteria have been called the filtering process of separation of the signals. Dividing signals from total channel that suitable to required conditions are named as filtering.

Television created the need for filtering the following conditions are used.

Filtering will be used when is existed following requirements.

-Separation signal that coated on carrier in modulation.

-Extraction signal that combined in multiplex for transmission by unique physical channel

- Processing signal, which should be to change its form or characteristics

- benefits a.

extraction needed signal from strong noisy signal.

In Graphic Editor, filter is event that can be applied to the image. Some of the filters can change the vision of the image that you cannot guess.

## **WEB APPLICATION VULNERABILITY**

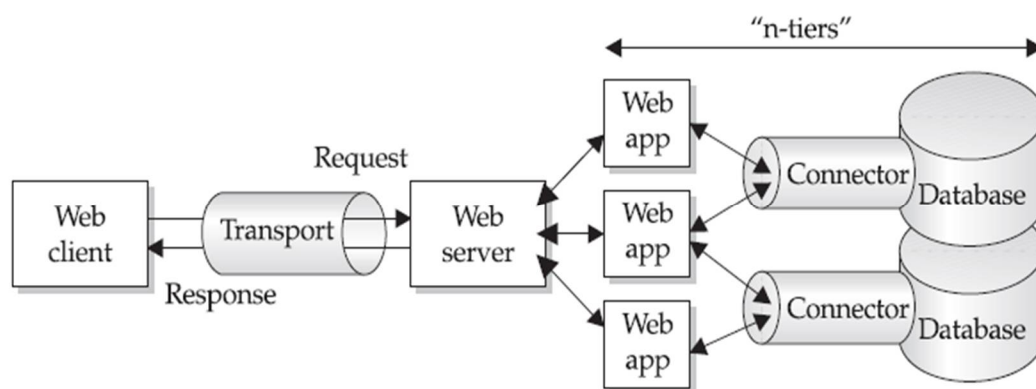
***B. Shakirov, D.A. Radjabova***

***Summary.*** *The most common web application vulnerabilities. In article reflected information about vulnerabilities in web applications, their causes and how to prevent the system/application and write safe code.*

***Keywords:*** *attack, Web application, HTML, SQL injection, Cross Site Scripting, HTTP, session hijacking, authentication, server, client, SSL.*

## Web application

Web application architectures most closely approximate the centralized model of computing, with many distributed “thin” clients that typically perform little more than data presentation connecting to a central “thick” server that does the bulk of the processing. What sets Web architectures apart from traditional centralized computing models (such as mainframe computing) is that they rely substantially on the technology popularized by the World Wide Web, the Hypertext Markup Language (HTML), and its primary transport medium, Hypertext Transfer Protocol (HTTP).



## Some statistics

According to KSN data, in 2013 Kaspersky Lab products neutralized **5 188 740 554** cyber-attacks on user computers and mobile devices.

Kaspersky Lab products neutralized **1 700 870 654** attacks launched from online resources located all over the world.

**58% of companies experienced web-based attacks.** The result was almost the same in the 2013 report, with 57%.

In terms of costs, the study reveals that **the percentage of annualized cyber crime cost caused by web-based attacks, depending on the country, ranges from 13% to 19%**. The study from 2013 showed a range from 10% to 18%, meaning that we have a small increase in proportions. Other categories of attacks

are: denial of services, malicious insiders, viruses worms and trojans, malicious code, phishing and social engineering, malware, stolen devices, botnets.

### **Most dangerous web vulnerabilities**

#### ***SQL Injection***

SQL injection attacks attempt to use application code to access or corrupt database content. This is accomplished via a Web request where the Web user input is incorrectly filtered for [string literal](#) escape characters that can be embedded in your SQL statements (like " or \*) or more generally not strongly typed or sanitized, and thereby unexpectedly interpreted and executed as SQL.

For instance, bad person speculates that the SQL code looks something like this:

```
SELECT field List FROM table WHERE field = '$EMAIL';
```

Here, \$EMAIL is the address submitted on the form by the user, and the larger query provides the quotation marks that set it off as a literal string. Attacker do not know the specific *names* of the fields or table involved, but he do know their *nature*, and he'll make some good guesses.

When he enters badguy@example.com' - note the closing quote mark - this yields constructed SQL:

```
SELECT fieldList FROM table WHERE field = 'badguy@example.com';
```

When this is executed, the SQL parser find the extra quote mark and aborts with a syntax error. How this manifests itself to the user depends on the application's internal error-recovery procedures, but it is usually different from "email address is unknown". This error response is a dead giveaway that user input is not being sanitized properly and that the application is ripe for exploitation.

Since the data he is filling in appears to be in the **WHERE** clause, he changes the nature of that clause *in an SQL legal way* and see what happens. By entering anything' OR 'x'='x, the resulting SQL is:



```
SELECT field List FROM table WHERE field = 'anything' OR 'x'='x';
```

Because the application is not really thinking about the query - merely constructing a string - our use of quotes has turned a single-component **WHERE** clause into a two-component one, and the 'x'='x' clause is **guaranteed to be true** no matter what the first clause is.

**Prevention:** Protecting against injection is “simply” a matter of filtering your input properly and thinking about whether an input can be trusted. But the bad news is that *all* input needs to be properly filtered, unless it can unquestionably be trusted.

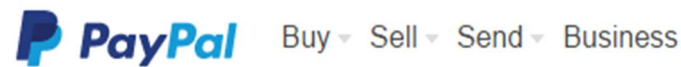
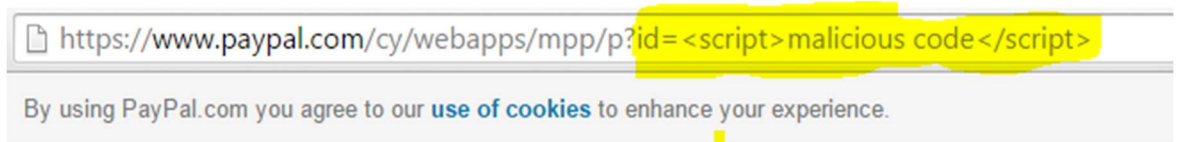
### ***Cross-Site Scripting (XSS)***

Often used in conjunction with [phishing](#), social engineering, and other browser exploits, XSS attacks inject malicious HTML or client-side scripts into Web pages viewed by other users, thereby bypassing access controls that browsers use to make sure requests are from the same domain (same origin policy).

By these means, an attacker can gain elevated access privileges to sensitive page content, session cookies, and a variety of other client-side objects through a XSS attacks. Some XSS attacks can be tracked to DOM-based or local cross-site script vulnerabilities within a page's client-side script itself, often called non-persistent or reflected XSS vulnerabilities.

By the way of example, let's Consider this:

- Alia is a Registered and frequent user of a Online Payment Website - PayPal.
- An Attacker Notices a XSS Flaw in a webpage of PayPal. This Webpage would display anything that you enter in an Input Field or Link.
- The Attacker Crafts a Special URL which sends such input to the Website that it includes the Attacker's JavaScript on the Page.



- Now the Attacker does Mass Mailing, Generating Mails, which seem to be from PayPal and contain this Malicious URL. Once such Email Reaches Alia.

- Alia clicks on the Link. The Web Page calls the JavaScript which Alia had placed using the Link. This JavaScript can Steal Alia's Cookies, which have been placed by PayPal and send it to the Attacker. Your Web Browser will not block Access to the Cookie it since it was accessed by the PayPal's Website itself.

- The Attacker now has access to Alia's Cookie, which will lead to the Account being compromised.

**Prevention:** There is a simple web security solution: don't return HTML tags to the client. This has the added benefit of defending against HTML injection, a similar attack whereby the attacker injects plain HTML content (such as images or loud invisible flash players) – not high-impact but surely annoying. Usually, the workaround is simply converting all HTML entities, so that `<script>` is returned as `&lt;script&gt;`. The other often employed method of sanitization is using regular expressions to strip away HTML tags using regular expressions on `<` and `>`, but this is dangerous as many browsers will interpret severely broken HTML just fine. Better to convert all characters to their escaped counterparts.

### ***Session hijacking.***

The Session Hijacking attack consists of the exploitation of the web session control mechanism, which is normally managed for a session token. Because http communication uses many different TCP connections, the web server needs a method to recognize every user's connections. The most useful method depends on

a token that the Web Server sends to the client browser after a successful client authentication. A session token is normally composed of a string of variable width and it could be used in different ways, like in the URL, in the header of the http requisition as a cookie, in other parts of the header of the http request, or yet in the body of the http requisition.

The Session Hijacking attack compromises the session token by stealing or predicting a valid session token to gain unauthorized access to the Web Server.

Types of Session Hijacking:

1. Active Session Hijacking:

- Active session Hijacking involves hijacking a already authenticated session.

- Active Session Hijacking means that original user has logged in his account or profile and then attacker steal the cookies to hijack the active session and then disconnect the original user from the server.

- In Active Session Hijacking, attackers use client side scripts to steal the original users cookies by involving social engineering tactics which includes emails, private messaging on forums and on other social networking websites.

- Why we call it active session hijacking because attackers need to interact and need some actions to be performed by the victim to steal the session successfully which can raise the suspicion level.

2. Passive Session Hijacking:

- In passive session hijacking attackers does not hijack active session instead they capture the login credentials while the original user is trying to establish a new connection with the server, and attacker is sitting silently on the same network and recording the login credentials.

- Passive Session Hijacking involves the use of network sniffing tools that captures data packet and exploit the vulnerability of ARP protocol by poisoning

the network. Attackers analyze those captured data to retrieve login credentials of the user.

- Why we call it passive session hijacking because attackers does not need to interact with the user and make him perform any specific actions. There is less risk of suspicion level.

## **SIMULATION OF THE PROCESS OF EXAMINATION IN THE STUDY OF ENGLISH LANGUAGE**

*Shihnazarova G.A., Naim N.A., Zokhidova G.E.*

***Summary.** On the basis of the proposed model an automated training system was developed that allows novice users to learn a foreign language and advanced user to raise the level of the English language.*

***Key words:** teaching system, module, adaptive training system, modeling, testing, intelligent system, process of examination.*

In recent decades, foreign languages are the object of attention and study not only scientists, but also ordinary people. It is noted the increasing role-played by foreign languages, in the implementation of the impact on the consciousness and activity of the general population. Also, be aware that knowledge of foreign languages is very important in the field of personal and professional communication rights, which allows him to be one step ahead of others.

Pursuant to the decree of the President of the Republic of Uzbekistan dated December 10, 2012 № PD-1875 "On measurements to further improve the system of learning foreign languages," the Cabinet of Ministers decides: to approve the State educational standard system of continuous education "requirements to the level of preparedness of graduates at all levels of education in foreign languages".

Modern research in the use of computers in teaching developed mainly in several major areas, which can be described as follows: intelligent tutoring systems; educational multimedia and hypermedia; learning environments, micro

worlds and simulation; use of computer networks in education; new technologies for teaching specific subjects.

Optimization of building adaptive learning system is to determine the sequence of study subjects and logical connections between them, as well as in building an optimized system of examination. At the initial stage of designing a training course planned for the study of learning material is divided into separate training elements.

There are quite a number of student model, but they are not take into account physiological features and characteristics of the student and, as a rule, are not used in determining the structure of educational resources and content, which reduces the effectiveness of computer-based training systems. The set of training systems for a variety of subjects and a variety of means for their development. An analysis of the capabilities of a large number of programs turned out that most of them are intended only to produce tests and testing. The possibility of such systems range from simple, allowing only the testing results and save it, and then provide them to the teacher, to a sufficiently complex, equipped with various means of analysis of learning outcomes, design reports by various criteria, set the parameters of questions parameter tests, and access rights etc. Some systems can be used in a network. Different systems and the types of questions: often it is possible to create only single-variant issues. Systems that are more sophisticated allow you to use several types of questions: multiple-choice, open, on the finding of compliance.

Systems that are more sophisticated allow you to use several types of questions: multiple-choice, open, on the finding of compliance. Examples of such programs are system MasterTest, TestMaker, the network system of electronic testing, SunRavTestOfficePro, TestCommander, Assistant, Examiner, AnyTest, TeachingTemplates and many others.

The following classes of programs are development tools actually learning systems that allow testing except to connect the theoretical material. Some of them

allow you to communicate with the theoretical test questions themes: for example, when an incorrect answer to the question the student can get an explanation of what is his fault or return to the study of related theoretical material. Examples of such programs are Adonis, Cadiz and Mentor.

The problem of construction testing programs as an integral part of intelligent tutoring systems due to the following advantages as a way of testing knowledge test:

1. Easy to solve the original problem of building a system.
2. The ability to supplement the test system in use.
3. Enough simple scheme of practical use.
4. attractive to users due to the time and effort spent on verification of knowledge.

It is known that the test itself is most simply implemented as a computer program. In programming, it is - a textbook example, included in any tutorial on object-oriented programming.

Under the test program here refers to a program that asks the user a question and several answers to it. Testing programs may vary in the details of its construction, but the general principle and its implementation in all such programs is the same.

The proposed model of computer-based testing allows each user to increase the level of knowledge of the English language. Figure 1 shows the model of examination, including the following models: testing, save the results, data acquisition and learning environment:

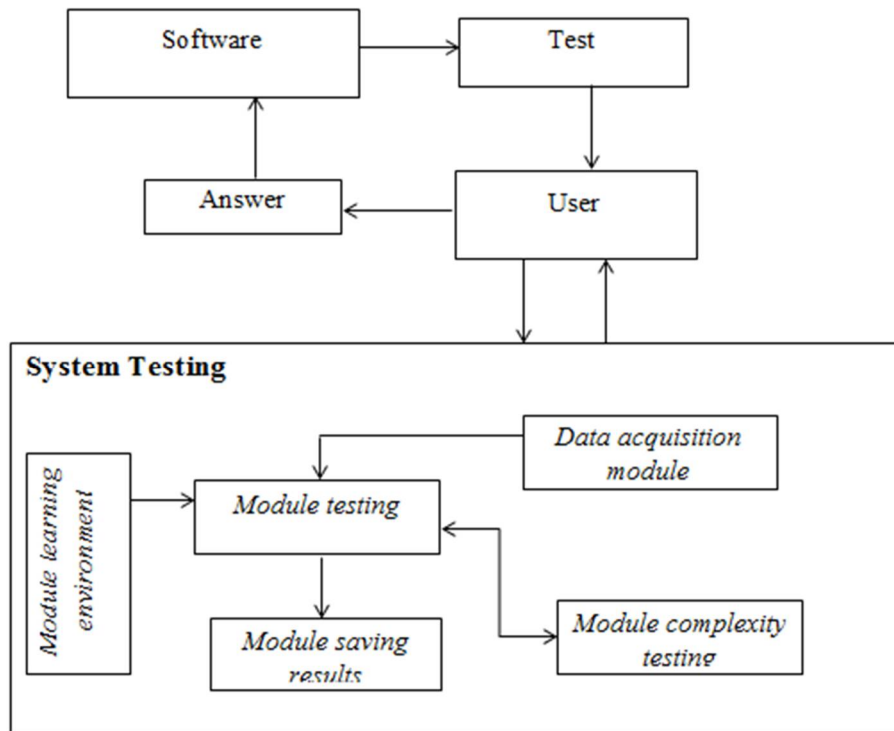


Fig. 1. The model validation process knowledge

M1: Registration. Each user who wants to pass the tests should be registered.

M2: Module testing. After logging in, the user can start to pass tests on levels of complexity or start learning English on subjects and then take the test

M: 3 module complexity testing. In parallel, the complexity of the evaluation system and user response. The first step is to change the static weighting coefficients correct answer to a particular question. The database is divided into groups according to the level of complexity. Changes are made to the control system test - it already forms the test although random, but so that the questions were submitted in accordance with the level of complexity. Generally, the level of complexity increases with the number of the question. Passing the test is already permitted in any order - to the earlier questions, you can come back.

M4: Module learning environment. Module to inject confidence information on the subject of English. Learner may at any time to learn foreign languages by topic.

M5: Module saving results. Data about users and the results will be stored base data that can see at any time. The idea to admit such possibility closely leads to creation of testing programs with artificial intelligence elements. In such systems, the answer of the user influences not only type of a following question, but also on a database. For this purpose, the local control system of the testing program should have an additional analytical subsystem.

#### REFERENCES:

1. Brusilovskiy P.L. Postroenie i ispolzovanie modeley obuchaemogo v intellektualnix obuchayushix sistemax // Izvestiya RAN. Texnicheskaya kibernetika. – 1992. – № 5. – P. 97–119.
2. Yankovskaya A.E., Semenov M.E. Intelligent System for Knowledge Estimation on the Base of Mixed Diagnostic Tests and Elements of Fuzzy Logic // Proc. IASTED International Conference on Technology for Education TE '2011. Dallas, USA, December 14-16, 2011. P. 108-113.
3. Frolov Y.V., Makhotiv D.A. Competence-based Models Specialists Training Quality Assessment // Higher Education Today. 2004. no. 8. P. 34–41.
4. <http://www.lex.uz>

#### ADOPTION OF MODERN INFORMATION TECHNOLOGY IN TEACHING PRE-SCHOOL AGE CHILDREN

*X.A. Shukurov, G.R. Razzakova*

*Summary.* The article reveals the content of the concept of pre-school education, which plays an important role in the subsequent development of the child as a whole person. Main attention is focuses on the analysis of concepts such as "education" and "Educational program".

*Key words:* education; early childhood education; educational programs; technology; pedagogical process.



Education – both targeted organized process and the result of the intellectual development of the individual, the assimilation of its experience of generations in the form of a certain system of knowledge and skills [1:4].

Informatization process in pre-school institutions is due to the requirement of modern developing society, which needs to its members were willing to work ten times more productive and creative, provided that all the science intensity of media – from personal computers to the global Internet communications.

Existence of IT in the modern world and ability of the majority of teachers to be creative, encourage them to seek new and innovative forms and methods of work with children and parents.

It is no secret that the majority of today's parents spend a lot of time in any social networking communities, which indicates the relevance of the topic and the possibilities of using Internet networks.

Preschool education – education received by students, raised-nicknames in the implementation of educational programs in the network of pre-school educational institutions or under the supervision of parents is the first teachers and is obliged to lay the foundations for the physical, moral and intellectual development of the child in infancy [2:2].

Educational programs – documents defining the content of a certain level of education and orientation [2:58].

Teaching process is specially organized interaction of teachers and pupils, aimed at achieving the set goals and leads to a pre-planned change of state [1:3].

Introduction of technological approaches in the design and implementation of the contents of the basic comprehensive program of preschool education possible at preschool, which will in turn generate graduate preschool integrative personality traits necessary for successful socialization and learning in today's schools. To update the content of pre-school education and the introduction of modern educational technologies in the activities with preschool children, it is reasonable to organize a number of activities that promote innovation in preschool education:

- competitions "The best kindergarten year", "Educator of the Year";
- establishment of a support and learning, pilot sites, resource centers based on innovative preschool;
- implementation of research work on the development of gifted and talented children of preschool age;
- development of competitive projects to create modules of subject-developing environment in preschool.

Introduction of modern technologies in the educational process will provide pre-school education development in accordance with modern requirements.

Also we can give advice to parents about proper planting child while playing on the computer, the recommended time for the computer.

Mailing lists can be episodic:

- report on the parents' meeting; answers to submitted questions via e-mail;
- individual recommendations;
- acquaintance parents scripting events, the distribution of roles in the preparation of the request costumes, decoration of the hall, the group;
- getting parents about teacher planned events: contests, open classes, matinees;
- recommendations for communication with experts: psychologists, speech therapists (Internet, e-mail); to create a personal website or a page and others; recommendation: on request and payment of goods and services via the Internet; on viewing photos of the event on the website of the teacher, together with the children;
- view presentations prepared by the tutor or other teachers; publications about reading tutor and other teachers in the pages of the Internet;
- assist parents in finding the necessary methodological and fiction for families of pupils.

Besides organizing mailings possible:

- Direct (via WEB camera) communication with parents and teachers, a webinar.

- Forum - Page site for interactive communication and discussion of selected topics.

- Parental involvement in building a website or preschool teacher (photos, forums, etc.).

- Assistance in the search for the sources of the Internet and the creation of file cabinets: motility, riddles, rhymes and so on. Help in choosing illustrative material on the Internet; to find additional informative material.

- Create a library that is of interest not only for teachers but also for parents.

- Parental involvement in ordering tickets through the Internet site (cultural and educational institutions).

Thus, the modern pre-school education is difficult to imagine without the resources of the Internet. The Internet carries enormous potential of educational services - e-mail, search engines, electronic conferences have become an integral part of modern education. On the Internet you can find information on early learning and development of innovative schools and kindergartens, foreign institutions of early development, to establish contacts with leading experts in the field of education. Therefore, in recent years there has been a massive introduction of the Internet, in not only school, but also pre-school education.

Application of computer slide presentations in children's education has the following advantages: implementation of perception of the material; opportunity to demonstrate various objects using multimedia projector and projection screen in multiple enlarged. Combining audio, video and animation effects in a single presentation helps to compensate for information received by the children of the educational literature; activation of visual function, the visual capabilities of the child; computer presentation slide films are useful for displaying information in the form of printouts in large print on the printer as a handout.

It should be noted that the use of a multimedia presentation possible in cooperation with the parents of pupils during parent-teacher meetings, workshops, public reports, round tables and other events.

Using the work of the teacher in the computer and multimedia projector develop and improve the quality of its creative educator, growing level of professional competence. The desire to diversify the activities of adult children to make the interaction more interesting and informative, displays them on a new round of dialogue, mutual understanding, develop personal qualities of children. Thus, the Informatization of education teachers opens new ways and means of teaching. The use of IT in education makes it possible to significantly enrich quality educational program to upgrade and improve its efficiency.

#### **REFERENCES:**

1. Vinogradova N.A. Doshkolnaya pedagogika. – Moskva, 2008. – 221p.
2. Voronin A.C. Slovar terminov po obshey I sosialnoy pedagogike. – Ekaterinburg, 2006. – 135p.

#### **DISTANCE LEARNING**

*N.J. Yuldashev, N.A. Sharafutdinova*

**Summary:** This paper analyzes the way of using e-learning higher education. The paper argues that, e-learning teaching has many advantages and the models of traditional teaching can't compare with it. There are also some disadvantages of using e-learning technologies in the classroom. This paper points out the problems in current teaching methods and offers some important suggestions, which can be implemented in the teaching in higher education.

**Keywords:** education designed, teaching methods, advantages, disadvantages.

Distance learning is a way of learning remotely without being in regular face-to-face contact with a teacher in the classroom. Such learning has its roots in students learning through correspondence courses. At undergraduate level distance learning usually means students engaging with learning materials at home or work.

As technology of visual images and virtual reality become more integral to society, teachers have selected this change by incorporating e-learning technology like sound, video and slideshows into the education process in higher education. E-learning is able to engage student interest and present many topics through familiar e-learning and increases enthusiasm for learning. E-learning is provided in a digital format that allows students to actively interact with the material. However, e-learning is more flexible than most traditional media, but as usual, here are both advantages and disadvantages using it for instruction in the classroom. This essay analysis current situation of teaching in higher education, pointing out existing problems and causes of these problems, and also offering measures to solve these problems, to speed up development of e-learning teaching methods and up-grade teaching efficiency.

The widening of participation in higher education is means that increasingly students have to pick up more and more of the direct cost of their education upfront. Whilst many students will continue to enter higher education whatever the costs, there will be increasing numbers who will need to look at the money they will need to find up front to fund their studies, and compare it with how much they will get back in increased earnings over their lifetime as a result of gaining the qualification from those studies. Clearly many students graduating with a higher education qualification will do so in the expectation that they will be able to use that qualification to gain higher earnings. In others words the qualification will have a “resale value” to prospective employers – the amount in salary that an employer will pay in order to take on someone with that qualification.

Historically, most distance education courses were vocational in nature, but today courses are offered for academic, professional, and vocational purposes for students of all ages. There are numerous specialized programs, such as those for blind persons and for parents of small children with hearing impairments. Distance education is available in practically any field, from accounting to zoology. Courses are offered in geology, high school diploma, journalism, blacksmithing, child day care management, yacht design, and many fascinating subjects. Distance education courses also vary greatly in scope, level, and length. Some have a few assignments and require only a few months to complete, while others have a hundred or more lesson assignments requiring three or four years of conscientious study.

Distance education is especially suited for busy people who wish to increase their knowledge and skills without giving up their jobs, leaving home, or losing income. You learn while you earn. Many courses provide complete vocational training; others prepare you for upgrading in your present job, without losing wages, experience or seniority. You receive individual attention, and you work at your own pace. In recent years, technology has played a significant role in transforming the traditional distance education school into a dynamic, interactive distance learning method using toll-free telephone lines, as well as a diverse array of personal computers, video devices, CD and DVD ROMs, online courses over the Internet, interactive devices, and other modern technological innovations. The future for distance study promises to be exciting!

Distance learning:

- allows for increased accessibility to timely and relevant information
- provides a platform for students to actively interact with the information by not limiting discussion to a set time and place
- encourages more thoughtful formal discussions and informal communication between students and with the instructor

- provides and encourages the use of web-based information sources to retrieve timely information in rapidly changing fields of study

### **Advantages and Disadvantages of Distance Learning**

Like any kind of educational program, distance learning comes with a host of pros and cons. Before you enrol in any kind of distance learning program, make sure to carefully consider these sure you'll be getting an education that meets your personal needs, strengths and career goals.

#### **Distance Learning Advantages:**

- **Lots of flexibility.** With distance learning courses, students can complete their course work from just about anywhere, provided there is a computer and internet connection. This allows students to work when and where it is more convenient for them without having to squeeze in scheduled classes to an already busy life.

- **No commuting.** Taking a course online can be one way to cut down on costly gas or public transportation. Since students can often work from home to complete their class assignments, both time and money are saved in cutting out the trips to and from class.

- **Numerous choices for schools.** Even if you live in a community with few or no colleges distance learning allows you to choose from a wide variety of schools to complete your education. You may find online schools that specialize in your particular field or one that can provide a great general education. Either way, your options for education will be greatly expanded.

- **Lowered costs.** Prices for online courses are generally cheaper than their on-campus counterparts and you will not have to worry about commuting, moving or getting meal plans on campus, some additional benefits to learning from home.

- **Learn while working.** As distance learning can usually be completed on your own schedule, it is much easier to complete distance-learning courses while working than more traditional educational programs. Keeping your job gives you

more income, experience and stability while completing your degree giving you less to worry about and more time to focus on your studies.

### **Distance Learning Disadvantages:**

- **Lack of social interaction.** If the classroom environment is what you love most about learning you may want to take a step back and reconsider distance learning. You'll likely get some interaction on chat rooms, discussion boards and through email, but the experience will be quite different than traditional courses.

- **Format is not ideal for all learners.** Not everyone is an ideal candidate for online learning. If you know you have problems with motivation, procrastination and needs lots of individual attention from an instructor you may want to think long and hard before enrolling in an online learning program.

- **Some employers do not accept online degrees.** While a majority of employers will, some still see a stigma attached to distance learning. Realize that your online degree may not be the ideal tool for some job fields or for future learning.

- **Requires adaptability to new technologies.** If you have never been one to love working with technology you will probably get a lot less out of an online course than your more tech-savvy counterparts. Make sure you feel comfortable working with computers and with online programs before you sign up for a class.

- **Not all courses required to complete the degree may be offered online.** It makes sense that more practical majors like nursing aren't offered entirely online, after all, part of the degree is learning to work directly with patients. Find out all the requirements of your degree to see what may need to be completed offline.

### **How to succeed as an Online Student or just an e-learner.**

Online courses are an excellent way for busy professionals to gain advanced training and certifications or switch career paths. They can also be very effective for first-time job seekers who need specialized training. However, before signing up, here are a few factors that can ensure an online student's success.



Time management may be the biggest factor in succeeding at your online course. Successful online students have to be very proactive in their studies and take responsibility for their own learning. To master time management, first determine what time of day you think you will be most focused on your studies. Are you a morning person or a night owl? Do you concentrate best after a cup of coffee or after lunch? Once you narrow in on a time of day reserve a designated allotment of time to dedicate to your course. Stay committed to that reserved time and treat it like an appointment that cannot be budged.

While there are many reasons to take an online course – one of the most frequent reasons students choose these courses is because of the convenience. Whether you have a full-time job, do not want to fight traffic or are raising a family – balancing school and personal obligations can become a juggling act. The beauty of self-paced, online courses is that you can study around your schedule – so be sure to set study time during your down time – even if that means 11 p.m.

An ideal study environment is just that – ideal. Some students need absolute silence while others can't seem to concentrate without noise in the background. No matter what your preference is, a well-lit place that is free from distractions is recommended. Note that you will make much better use of thirty minutes of disruption-free study than an hour's worth of commotion-filled learning. If you can't escape in-home interruptions, try the library or a coffee shop. Schedule your designated study time when you can be in a distraction-free environment, your chances for success will increase, and the time you need to devote to your course will decrease.

Do not be afraid to ask questions. As an online student, there are several ways to get the answers you are seeking. If your course offers instructor support (and I would recommend courses that do), you can always direct inquiries to your teacher. Top-notch courses tend to provide first-class support so that students never feel lost or alone during the e-learning process. However, online chat rooms, if provided, are another great resource for students seeking answers. Online chat

rooms give students a forum to meet other students taking the same course and ask questions or discuss assignments. More than likely another student taking the course has had or will have the same question. If you need an immediate answer – do your best to find the answer yourself. You will likely satisfy other lingering questions in the process and often times the journey to the answer teaches you more than the answer itself.

Remember that non-credit, continuing education and certificate courses are designed to provide the skills necessary to acquire professional calibre positions for in-demand occupations. The more effort you put forth in these online courses to comprehend the lessons taught the more likely you are to succeed after the course is finished. Extra effort during the course will lead to an easier transition in your new positions or with your new responsibilities. E-Learning has a lot to offer students who dedicate the time and focus to extracting everything the course has to offer.

It is the contention of this paper that until the problem of the lower retention in distance education is firmly tackled; distance education will not compete successfully with conventional education in terms of either student recruitment or funding from government or employers. What is more this paper suggests that the signs are that current trends to move to e-learning in distance education are likely to worsen both retention and market penetration at least in the short term unless urgent action is taken to address both issues.

There is evidence that retention in distance education can be improved through measures such as “proactive motivational support” and that such student support can be cost-effective for both institutions and students. It will be vital for the future of distance education that effective student retention processes are implemented in both the conventional and e-learning environments.

## **REFERENCES:**

1. Маслова В.А. Введение в когнитивную лингвистику. Учебное пособие. М., 2004.
2. C. Kearsley and R. Bomeyer. Preparing Teachers to teach online, 2004.
3. Cross J.P. The advantages of attending online college course, 2011.
4. <http://www.articlecube.com/>
5. <http://www.britishcouncil.org/>

## **II SECTION– SOFTWARE ENGINEERING**

### **SMART HOME SYSTEM**

*A.Abdugafforov, F.Safarova*

*Summary.* This article is about smart home system, the stages of creating system. Furthermore, the advantages of Smart Home system as well as the information about interface between home systems are given in the article.

*Keywords:* central management system, interface between chips and computer, program, creating stages of system.

#### ***Smart home system***

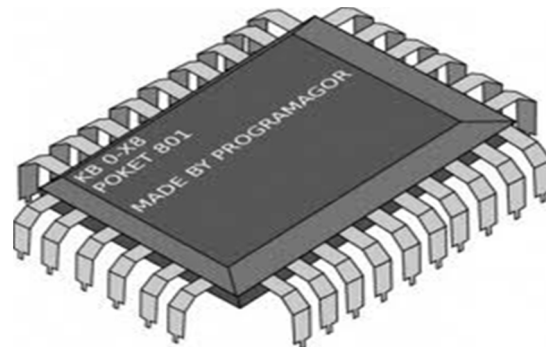
Today people try to control and operate almost everything, especially, technologies and different systems. In this case, smart technologies help them to do it. Using such kind of technologies is being suitable and common. For instance, smartphone, smart TV and others, but have you ever heard about smart home system? It is the systems, which helps people control and manage their home whenever and anywhere. In such kind of homes, all systems of the home are connected to central management system. This main system is operated by people`s mobile phones. There may be question “HOW?” among several people. It

is very easy. Several steps are done to manage it.

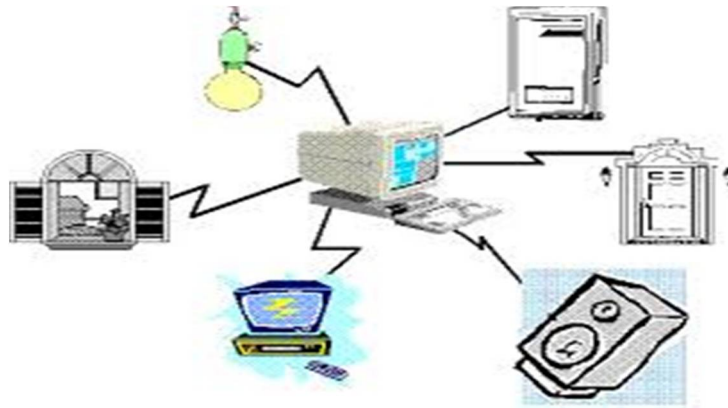


First step is preparing program. A special program, which controls systems of the home, is created (it can be done in any high programming language: java, C++ and others).

Next step connected with chips. In this step, created programs are written to chips and they are set up above-mentioned systems.



Then the interface between chips and computer is installed in order to control systems by computer. After that, Wi-Fi and Bluetooth connect androids with computer. When people are in home it is better that, they use Bluetooth, because they do not pay for anything, but it does not work for long distance. As a result, people need another type of interface. In this case, Wi-Fi is acceptable. People can operate all systems of their homes when they are not in home by using Wi-Fi connection.



“Do people need this type of system?” it is common question for every new created program or system. In many countries, a great number of people have to go to work early and sometimes they forget to switch off gas or electrics or to close windows as a result of hurry or spend their time to do them. If people use smart home system they can do these on the way.

Furthermore, many cripples live in many homes. They cannot open and close windows, manage some electrics. Smart home system helps them to do such kind of works.

There are several advantages using smart home system.

Firstly, Smart home system prohibits wasting natural resources. If someone forgets to switch off electrics or gas system, these resources are wasted, but it may be not very huge damage. The great damage is that this situation led to some troubles such as fire or flood.

Secondly, in every country people must pay for using electrics, gas and other resources. It is the fact that, nobody wants to pay extra money for them. People can forbid paying extra money by using this system. Because they can control how much they spend and how much they must pay in anywhere by using program in their mobiles or tablets.

Another advantage is prohibiting robbery. Sometimes locking door or windows is forgotten and it is very easy to steal for robbers, but you can lock doors by this system if you have gone already.

Moreover, cripples do not find any difficulties with looking after themselves. They can do already all independently because of smart home system.

To sum up smart home system is very convenient for save home different damages. Although a lot of money is spent for it, the usefulness is very high.

## **PROBLEMS OF LAUNCHING ELECTRONIC GOVERNMENT**

*Sh.T. Agzamov, Kh.A. Nigmatova*

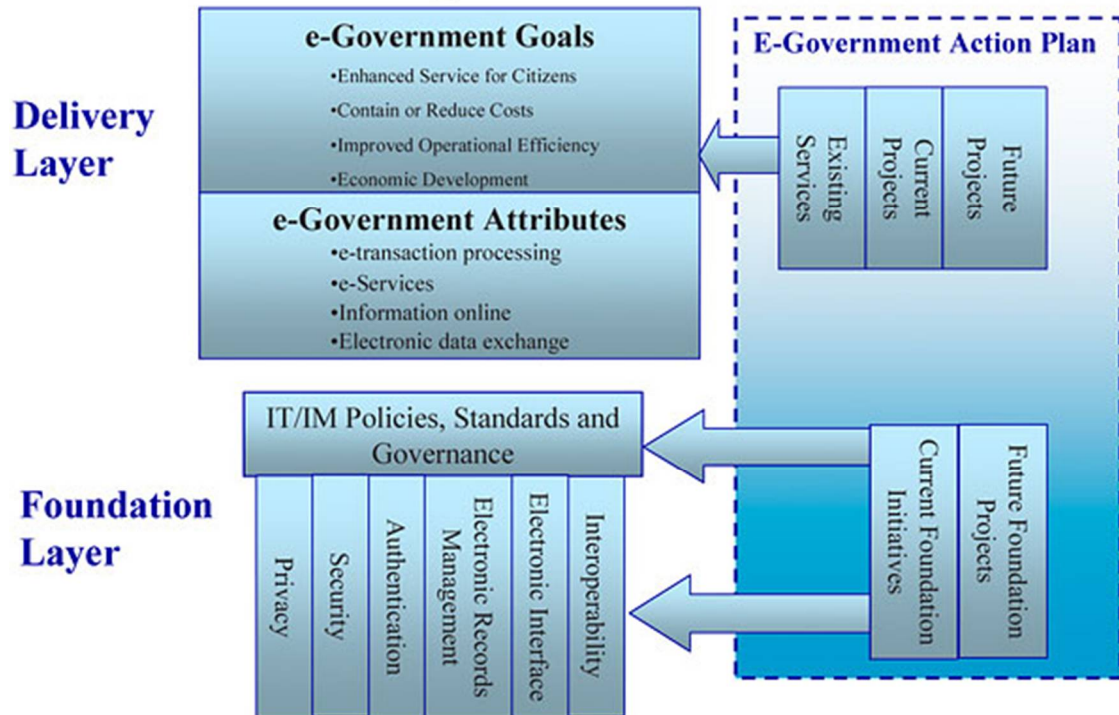
*Summary.* The following article considers the main role of electronic government in governmental structure, various actual problems of electronic government and complex tasks directed to its solutions.

*Key words:* ICT, launch, e-government, citizens, management, organizations, service, communication, data.

With high pace development of ICT in the world, appears need of launching new technologies, ideas and innovations in government structure for elevation of efficiency of government management, providing services to citizens and organizations. According to experiments of leading countries of the World can be assured that, being available of governmental services in electronic version has huge superiority to citizens and to government itself, as well. Launching electronic government reduces expenditures and makes country maximum effective and comfortable for citizens.

Department of economical and social development OON regularly publishes reports about readiness of countries in the world for using electronic governments.

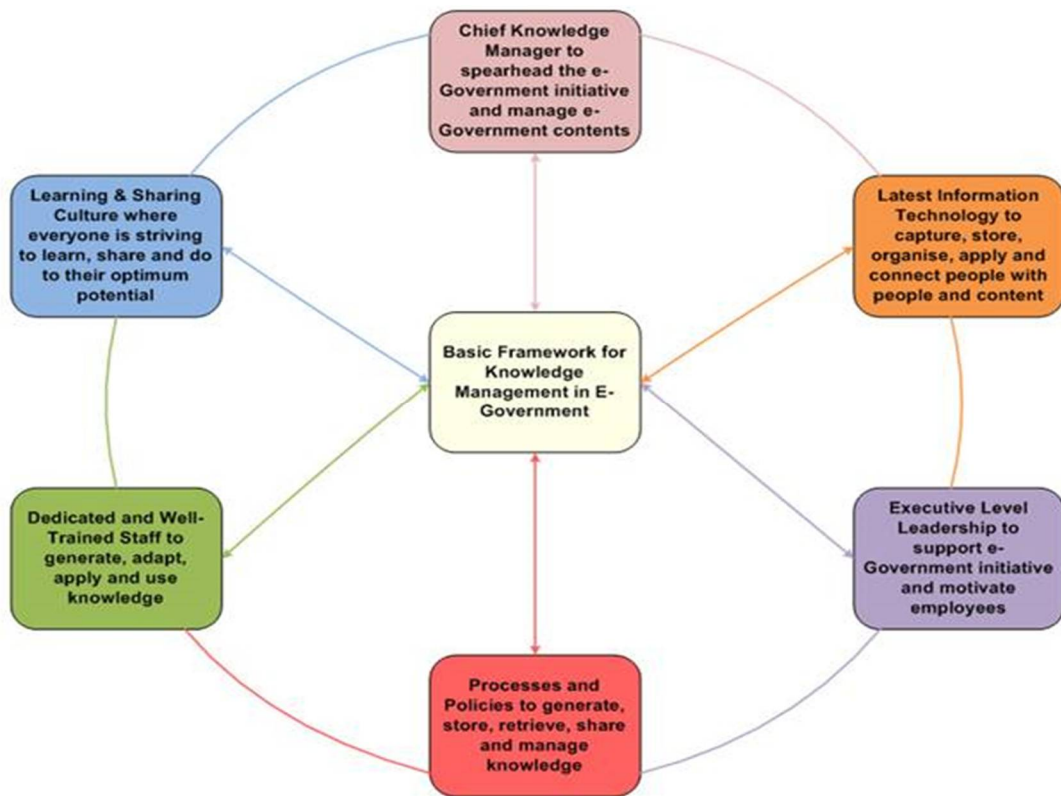
## e-Government Delivery Framework



On the other hand, there should be given some problems of launching electronic governments connected with population and staffs.

- Absence of motivation of citizens in usage;
- Untrustness of citizens towards electronic ways of communication;
- Low rate of computer skills among population;
- Low rate of awareness, passive participance of citizens;
- Lack of qualificated staffs in this sphere;
- Absence of motivation in some state organs about launching new things in its specialist;
- Technical problems (weak documentary of technology, absence of explanation of processes and operations);





One additional problem is information without data base.

To solve these problems, there should be held regular measures directed to teaching future development. One of the example of attracting professionals in terms of launching huge IS in Uzbekistan is LG CNS.



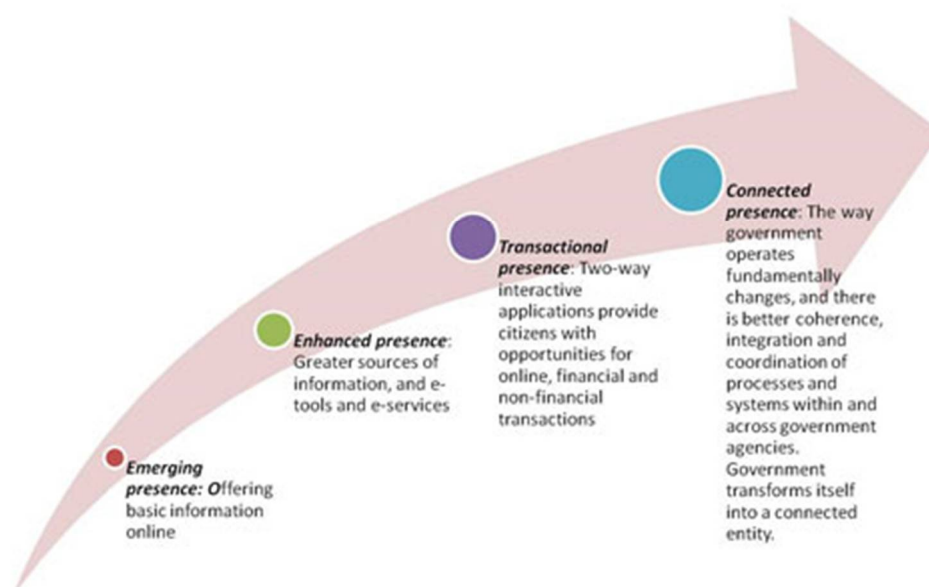
There should be created united communicative circle in terms of blogs or discussion forums, discussion to attract ideas in electronic government. In order to solve technological problems, attention should be paid to harden methodical guarantee.

There should be worked out some methods accordance to KPI and usage of interactive civil services, therefore accordance to aim indicators and representative's realizations of projects in systems "Electronic government".



At this moment, we can notice big changes; we are only on the second step out of four about launching electronic government. There are held some trainings submitting developing of a level of staffs' professionalism. Thus, there are some things that are being developed such as interactive services, regulatory documents, principles and decrivals. The importance is, these are working. The rest is a question of time.

## Stages of e-government



### THE FURTHER SOLUTIONS FOR THE CURRENT PROBLEMS WITH E-DICTIONARY

*M. Babadjanov, U. Mamajonov, A. Abdiyev*

**Summary.** *The article addresses the setbacks in the development of IT in Uzbekistan and e-dictionary project offering great assistance into practical approach in IT sphere. Key problems and barriers preventing our IT specialists from developing further into global standard.*

**Keywords:** *programming, e-dictionary, database, globalization, software and hardware, telecoms*

## **Introduction**

In today's rushing life, IT (information technologies), which we are in, is one of the thriving fields in the world as well as in Uzbekistan. In our country, there are wide range of opportunities for IT people, namely for programmers and people involved with telecoms, to succeed in their studies and researches. In addition to that, there are gradual improvements in that process that some software products are finding their way to the world markets. On the other hand, as far as I am concerned these achievements and the pace of changes in IT are not compatible with the rushing world of IT, which is releasing daily innovations and hourly innovative product. Particularly, it is clear that, our programmers having great potential but are not in adequate level comparing with others, for instance programmers from India, South Korea or even programmers from Kazakhstan. Certainly, inescapable questions come up there. For instance, what are the primary reasons for those sort of setbacks in the IT system? Alternatively, How to cope and deal with those barriers? That is definitely due to language skills.

As we are deeply involved in IT sphere here in our studies, there are always steps we should go through. Firstly, technical side of the subject, practice and realization. To be in same wave with the rest of the world, gaining very updates specialist should have knowledge of English in very good level and it is absolutely vital that every people involved in IT ought to know not only English, but also the technical side of it. We have to take into consideration it that we cannot progress further without knowing English in legitimate level. Especially, in Uzbekistan the language barrier preventing our young generation to go into global scene. Thus, we are carrying a handful projects to bolster the IT department, where IT people are facing substantial problems regarding English language. And, one of our works intended to help IT people was the e-dictionary, which is highlighted below. On its maiden version, the dictionary became very popular amongst students and came in handy to them.

## **Objective**

During our studies, we witnessed that many young learners are facing few challenges regarding to English as they learn programming, especially the technical side of it. We could see that there is not any popular and satisfactory English-Uzbek dictionary and if there is, it was produced for commercial purposes and it is not affordable for young students. Thus, we decided to help them practically and started our research. After a while, we come up with an idea that we decided to produce an e-dictionary that is helpful for everyone as well as IT people. At the beginning of the project, we created an e-dictionary with 23 000 English words, 27 000 Uzbek and 11 000 Russian words.

### **Specifics**

The app is designed for desktop. And, one of the advantages of the app is that for the sake of simplicity it works with fixed database and it does not require any additional software to work on your computer. To launch it, you just need to press on the \*.exe file of the app in your computer. Even though this is the first version of the app it has many distinctive features, namely it has 40 grammatical topics for learners of English for self study. And, it has a section where you can learn high-frequency words and common phrases, which are used daily basis. In the same time to learning the grammar and words, the student can take exam to harden their knowledge in the other testing section.

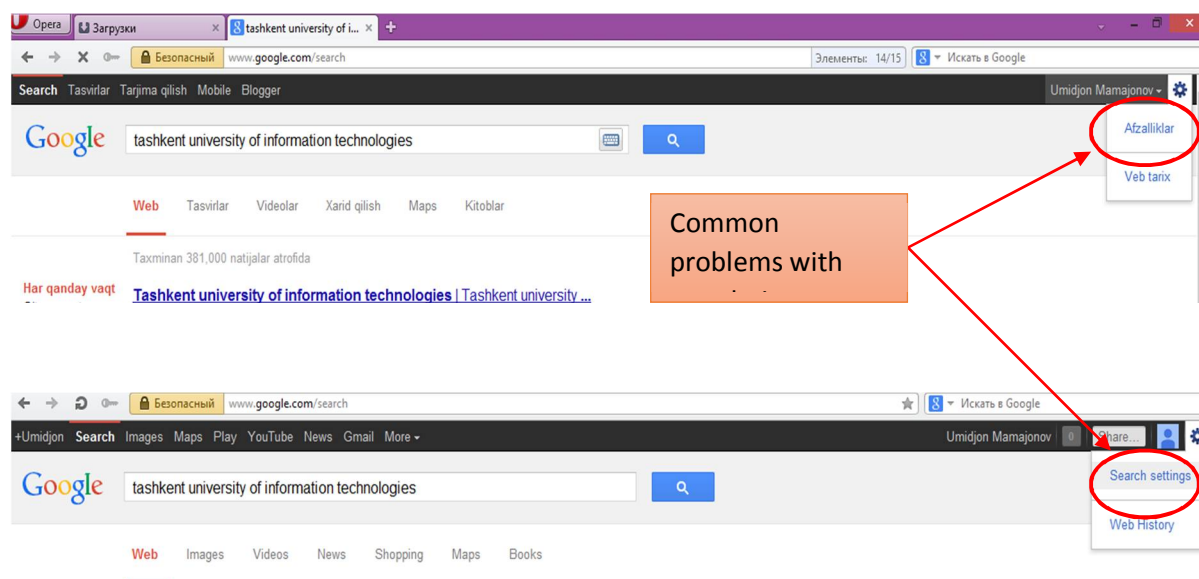
### **Achievements**

Today this app is very popular amongst young learner of English and facilitating their way of learning. In addition to that, so far, many students from the different parts of our country, for instance from Andijan, and from Kharezmi, contacted us and said they were very pleased with this kind of assistance and gave us very important feedbacks to improve this app.

### **Future of the project**

It is pleasant that, today many top software and hardware products are being produced with default Uzbek language. However, in many cases, technical words are translated to Uzbek incorrectly. Many experts practicing in this field and

connected to our local enterprises repeat these mistakes due to lack of sources. As you can see it below:



If we do have helpful vocabulary type dictionaries, which is heavily engaged with IT sphere, it should come in handy to international corporations to add Uzbek language to their mass-market apps and . Hence, we are improving our app and extending the number of technical words. In addition, we are working on to get user interface more advanced in order our app to be more comfortable for IT people and for public.

## Conclusion

We are happy to help English learners to improve their language skills and facilitating their way of learning. As the audience of the app increases, we have to get more work done to improve our project to satisfy them and we are on this way. We are struggling to turn our app into a professional work. And we hope that in the future many volunteers join us to support this project.

## REFERENCES:

1. Thomas Friedman, “The World is Flat”, New York, publisher The New York Times, 2008.

2. Herbert Schild, C++ The Complete Reference, The McGraw-Hill, 4<sup>th</sup> Edition, 2003.
3. Cplusplus.com/doc/tutorial
4. Pierre Chatelier, From C++ to Objective-C, Copyright, 2008.
5. Clifford A. Shaffer, Data Structures and Algorithm Analysis, Edition 3.2, Virginia, 2012.

## **INTRODUCTION OF E-BOOK C++**

***D.Ibragimova, M. Shokhakimova***

***Summary.*** *The following article is devoted to the Introduction of e-book C++.*

***Key words:*** *e-book, e-document, Data store, application*

XXI century is the age of new technologies. Automated information systems are used almost in all humans activities for instance in the management of aspects of economy, in researches, in business and so on. Presidents decree “About measures of further development and implementation of information communication technologies” on March 21, 2012 has become the most important program in enlarging the scale of work in this sphere. The use of information technologies is increasing year-by-year, computer technique and e-document circulation is developing steadily. Communication technology is getting the most convenient and fast means of information exchange and offering services. Existed information systems are intended to enjoy user’s confidence, effective use of variety of services and effective time consuming.

Information technology is a process of using complex of methods and means of altering information into qualitative form, collection of information, processing and transmission. The purpose of information technologies is producing new information, which helps a person to get necessary information, analyze it and make right decisions. Using of information technologies in education gives learners opportunities to use animations and other capabilities of computers. Such

examples of using information technologies can be shown almost in all spheres of life.

Several years ago we imported all software from foreign developed countries. Later our specialists in this sphere started producing their own software and today we can import our software products.

The evolution of information technologies has several stages and it is one of the most important and effective ways of using information resources of the society.

Automated office of modern information technologies is an organization and support of information exchange of the enterprise using computer networks and other means for working with information. Therefore especial programs have been created. One of them is Microsoft office program pocket. It includes word text Editor, E table excel, program preparing graphics for power point presentation database management system Microsoft Access. There are a lot of software means which can support all types of information technologies. Let's look through several of them. **Data store** is a one of the mandatory component of information technologies. Data store in the automated office keeps all information about manufacture of the firm. It's impossible to imagine the development of information technologies without computer networks. Computer network is a complex of computers and terminals linked to the single system through communication channels. Information technology is directly connected with information system which is the main media for it, because information technology is ordered processes which perform different operations, actions and algorithms of different complexities.

There are some tools and means of information technologies such as Xeroxes, faxes, scanners and others. These tools help to correct and change the information. Nowadays using computers and computer systems in exchanging information is useful. Modern manufacturing requires information fast and in a proper form from all over the world. And now we use mobile phones not only for

sending and receiving information but also for variety ways as making voice calls , sending texts, e-mailing and others. But its not enough. Nowadays we cannot imagine manufacturing without computer systems. For example, computer technologies are used in all procedures from selling air tickets to space explorations.

We are now living in what some people call the digital age, meaning that computers have become an essential part of our lives. Young people who have grown up with PCs and mobile phones often called the digital generation. Computers help students to perform mathematical operations and improve their math skills. They are used to access the Internet to do basic research and to communicate with other students around the world. Automated information system helps people in each sphere, like business, medicine, social life, economy and etc.

**E-books.** Unfortunately for us computers can't understand spoken English or any other natural language. The only language they can understand directly is machine code , which consists of 1s and 0s (binary code). Machine code is to difficult to write. For this reason we use symbolic languages to communicate instructions to the computer. For example C++ was developed in the 1980s at AT&T. It is used to write system software, graphics and commercial applications. C++ is a version of C which incorporates object oriented programming: the programmer concentrates on particular things (a piece of text, a graphic or a table, etc.) and gives each object functions which can be altered without changing the entire program. For example, to add a new graphics format, the programmer needs to rework just the graphics object. This makes programs easier to modify.

E-books are easy to use as I say. Despite majority of them, have video lessons. They can be very helpful for users, because they have audio video materials which enable users to watch and listen the procedures, how to use the language and so on. I have chosen C++, because it's very widespread language and it is easy to use. I have created e- book C++ for Uzbek students on the initial stage.

- So now I want to tell you why I choose this project. When I entered this university I had new subjects. But programming language C++ was the most interesting and difficult to learn. But I learnt it well with help of my teachers. And in order to help the 1st year students I created e-Book for learning programming language C++. It facilitates students learning process and will be helpful tool in solution different problems:

#### Algorithm

- 1. Concerning homework exercises
- 2. Function of C++
- 3. Programming language C++
- 4. Massive
- 5. Video lesson
- I use components and forms of Adobe Flash Professional CS6.
- After collecting these information I choose compiler.
- In creating interface forms will help.
- I thought a lot about the design of my project.

And this is the final result





The following actions must be done to use the program:

- First open program
- When you enter, you see button ENTER.
- When you press ENTER, it enables you to access the main part.
- As you can see below e-book is given in PDF format.
- By clicking twice, you can see it.



As a conclusion I want to say that increasing number of e-books will contribute to the enhancement of students' literacy in different spheres of life. Nowadays people are not interested in reading ordinary books, if we want to attract readers attention, we will have to use different multimedia programmes and e-books, as using audio and video material will help readers to memorize things better and longer. From the point of view of psychologists visible and colorful things are more attractive and memorable rather than white black things. I think my e-book will be a source of information for the students of TUIT as well as for college students who are learning to create programmes using the programming language C++. Creating national books and manuals is one of the main tasks which was set in the National program of training personal in our country, so I think my book will be a tiny contribution to the development of IT in our country .

## **INTELLECTUAL PROGRAM CONTROLLING BY VOICE**

**A.E. Otaxonov, Yu.S. Abulkasimova**

*Summary.* This paper is devoted to change upcoming voice into letters, and also to find max probability words from received letters.

*Key words:* Waves of letters, Acoustic model, Language model, Speed of CPU, pattern recognition, Linear predictive coding, Mel Frequency spectral analysis, frame rate, window size.

Speech is the most natural means of communication between humans. It can be done without any tools or any explicit education. It is one of the first skills we learn to use. Babies quickly learn how to react to the voice of their mother and they even quicker learn to produce noise when they are in need. When speaking with somebody, one does not have to focus on this person. One can look in a different direction or even perform some other task while communicating. Speech is also the

most important way of communicating. It has always been before mankind invented writing, the spoken word was the only way of passing knowledge. Despite all our ways of communicating, like e - mail and chat, speech is still the number one means of communication, a fact once again proven by the immense popularity of cellular phones. So it is only logical that machine interface designers in their quest for a natural man-machine interface have turned to automatic speech recognition and speech production as one of the most promising interfaces. In the last 40 years researchers from areas like psychology, linguistics, electrical engineering and computer science have worked on this subject. While the first systems could only differentiate between 'yes' and 'no' , currently, speaker independent systems exist with a vocabulary of over 60 000 words that can recognize continuous speech (that is complete sentences or paragraphs)with an accuracy of 95% or higher. Although different techniques have been developed for automatic speech recognition, ranging from knowledge - based systems to neural networks, the main engine behind this progress and currently the dominant technology, has been the data driven statistical approach based on Hidden Markov models.

Why is automatic speech recognition such a difficult problem that, after 40 years of research, it still has not been solved? At first sight it may seem just a matter of classifying sounds using some typical characteristics of these sounds. This approach, called the acoustic approach was indeed tried, but only with limited results. Finding explicit characteristics of speech sounds that suffice to classify them proved extremely hard. A second approach to recognizing, that does not directly rely on a set of characteristics is the statistical pattern recognition approach, which has already been successfully applied to problems like the automatic recognition of handwriting. The pattern recognition approach did prove to be fruitful, but only after advanced models were developed.

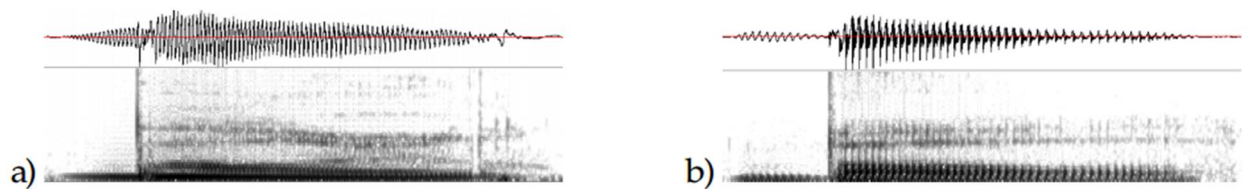


Figure 1 - The word ball spoken by two different speakers: (a) female and (b) male  
 Figure 1 shows why the simple pattern recognition approach of classifying signals with a similar shape as the same sound, is not powerful enough to perform speech recognition. The figures show the word ball spoken by two different persons. The upper half of the figure shows the raw speech waveform, the lower half shows processed versions of the signal that highlight its formants, which are characteristic for a sound. So speech is person dependent, which is no surprise, as different voices sound different.

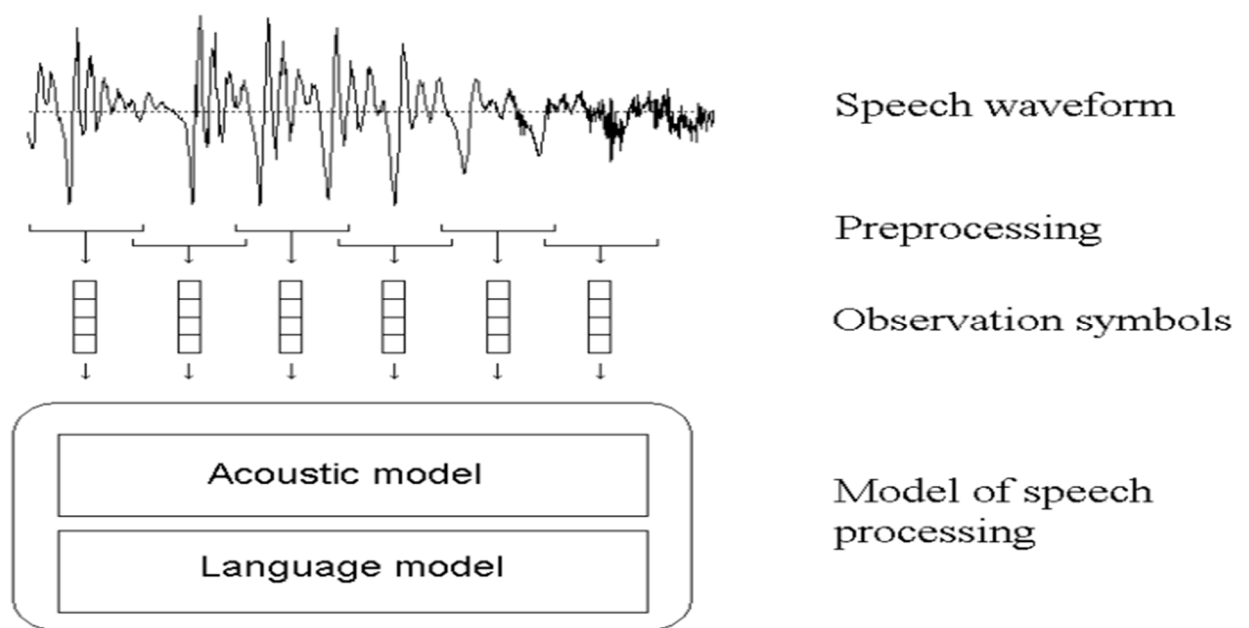


Figure 2 - overview of the speech recognition problem.

Acoustic processing: The first step in speech recognizer design is to decide what acoustic data  $\mathbf{O}$  will be observed. Therefore a front end is needed that will transform the original waveform into a sequence of symbols  $o_i$  with which the recognizer will deal. Strictly speaking this is not necessary, speech recognition could be done by performing pattern recognition algorithms directly on the speech

signal, as this signal contains all information. But as mentioned before there are many possible variations in a speech signal and visually similar waveforms do not necessarily indicate perceptually similar sounds. Therefore some preprocessing may be useful to reduce the amount of noise introduced by the environment and the recording hardware and to reduce correlation in the input signal and to extract relevant features. Many different ways to extract meaningful features have been developed, some based on acoustic concepts or knowledge of the human vocal tract and psychophysical knowledge of the human perception. Much work has been done in the field of signal processing; the most important methods here are Linear Predictive Coding and Mel Frequency Cepstral Analysis.

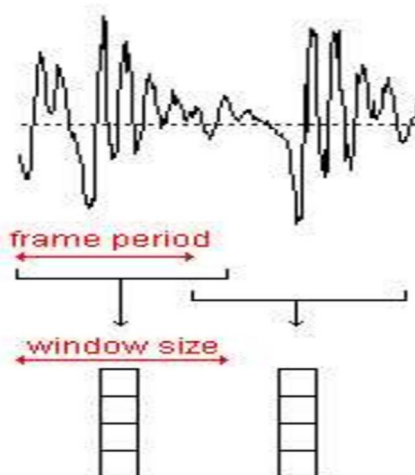


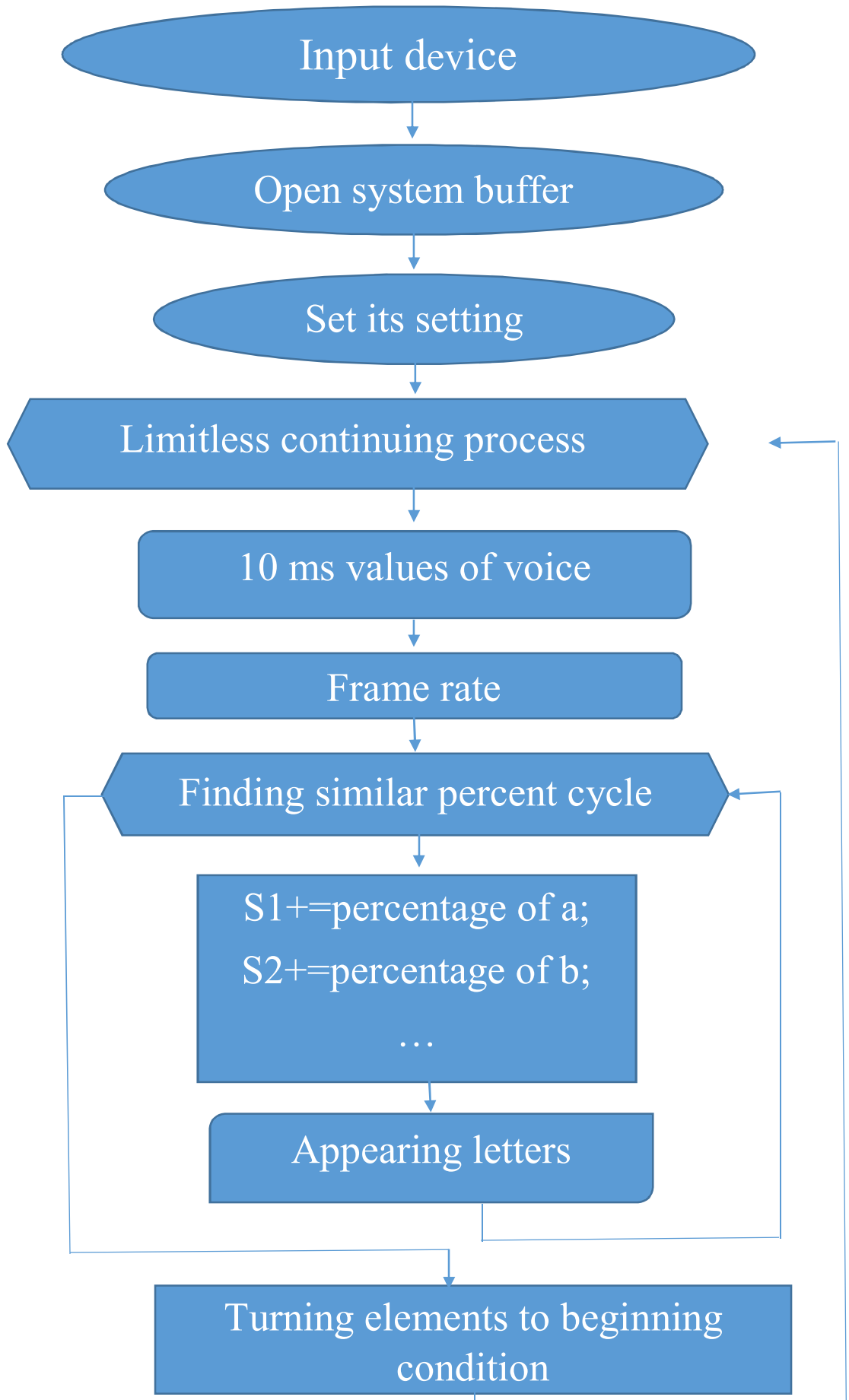
Figure 3 - feature extraction.

Figure 3 illustrates the overall feature extraction process. A sampled waveform is converted into a sequence of parameter vectors at a certain frame rate. A frame rate of 10 ms is usually taken, because a speech signal is assumed to be stationary for about 10 ms, as can be seen from figure 3. The segment of a waveform that is used to determine each parameter vector is referred to as a window. The window size and the frame rate are independent. Normally, the window size will be larger than the frame rate, so that successive windows will overlap to make up for discontinuity in the signal introduced by the discrete sampling of the signal.

**My method:** My computer is able to fulfill 2 500 000 000 operations a per second, but a user cannot use all of them. Because here it goes a large amounts of

system operations and controlling devices, exchanging information, and so on. So computer can give us its possibility of only 100 000 000 deeds a per second to practical use. At first sight this may appear more than we need but each alphabet involves from 40 to 80 values sequences. To find and count this distance  $100\ 000\ 000 / 8\ 000 = 12\ 500$  deeds is left. Because it expects 8 000 values a per second and when it only does max count 12 500 it can reach on time next value. Besides these there is also word model it counts and checks words with base and returns back max probability words. This model is able to use in a lot of programs, it is written as a sequence of specific functions into the library of Hariflar.h. This model is an Acoustic model and it determines sound wave phrases, the data from the period as a whole the role and value of the case a member of its letters. Of course, there may be a variety of environmental and traction voices and also can be a variety situations that the algorithm can't be capable of calculating the right circumstances. That is why I created a function modification to reduce the cases. In addition, many of these sources will be talked about the different types of models. These models are principal similar and greater amounts of computer possibilities. All we know, that a lot of calculating interferes with the performance of other applications. My model differs from other models with following functions. In it, the number of cycles are reduced to improve the efficiency and therefore to reduce lots of operations, the value of waves is based in advance into the base "a.dll". During the processing of this software only compares "a.dll" basal values with the values of caught voices, of course after a specific implementations. With this cause of more reducing calculations, it sets own settings when pressed button "on". Computer management functions is wrote as a sequence of one by one programs with the purpose not to interfere sound process. But all of these softwares are managed by the voice recognition program. If you appeal to the program by its name, the program is also able to respond by voice.

# Algorithm



## REFERENCES:

1. Automatic speech recognition using hidden Markov models 2003 September.
2. Naveen Srinivasamurthy, Antonio Ortega, Shrikanth Narayanan, *Efficient Scalab Speech Compression for Scalable Speech Recognition*.
3. <http://www.tldp.org/HOWTO/Speech-Recognition-HOWTO/index.html>
4. <http://www.zachary.com/s/xvoice>

## 36 TEST

*A. Bakhodirov, S.K. Juraeva*

***Summary.** Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation.*

***Key words:** application, program, test, language, multiple choice, software testing, entrance examination.*

‘36 test’ is the bilingual grammar test application which test you’re the English and Uzbek language skills and gives you multiple choice of questions. A collection of questions are which given in entrance examinations. Grammar guide application is a complete reference on the rules of English and Uzbek usage. Every grammatical rule is explained in clear. It is known all of us today the educational system is becoming more and more convenient to study. Our new developed application (project) has online forum to discuss about any questions that they have trouble with it and can get necessary information, lessons which they need from another part of application. This is a mobile application that gives you a lot of questions; we hope this app is useful for all who intended to learn both languages



fluently. It is a self-study reference and practice book application for advanced level students. If we talk about the collection of questions, as a said they are higher study exam questions in application you will be given thirty-six questions and an hour with this you feel yourself as being in a August exams.

Good timer always reminds you time and dignity of seconds. If you can not mark all of them the application will automatically consider them wrong answer. It causes to fall down your points which shown in your profile with internet connection. In digital computers Software testing is considered as old as the hills in the history of this world. Software testing is an important technique of accessing the software for its quality and for the services which will be further provided by the software. About 40% to 50% of development efforts are consumed in the software testing process, it consumes more effort for systems that require higher levels of reliability, rather it can be simply said that software testing is a significant part of the software engineering. The ultimate goal of software testing is to help the software designers, developers, and managers to construct systems with high quality. Thus research and development on testing aims at efficiently performing effective testing – to find more errors in requirement, design and implementation, and to increase confidence that the software has various qualities. On one hand it can be said that the software testing is mainly a process of finding the loop holes in any software. Testing technique research leads to the destination of practical testing methods and tools.

Testing is an important and critical part of the software development process, on which the quality and reliability of the delivered product strictly depend. Testing is not limited to the detection of “bugs” in the software, but also increases confidence in its proper functioning and assists with the evaluation of functional and nonfunctional properties. Testing related activities encompass the entire development process and may consume a large part of the effort required for producing software. In this chapter we provide a comprehensive overview of software testing, from its definition to its organization, from test levels to test

techniques, from test execution to the analysis of test cases effectiveness. Emphasis is more on breadth than depth: due to the vastness of the topic, in the attempt to be all-embracing, for each covered subject we can only provide a brief description and references useful for further reading. In our software testing you will economize your time and your money, you can easily solve tests and correct your mistakes. In general you can use it everywhere and every time!

## **LEARNING ENGLISH LANGUAGE THROUGH WORDSTEACHERUZ PROGRAM**

*Ibragimov A.F, Radjabova D.A*

**Summary:** WordsTeacherUz idea is to force the user to learn the words without stopping working at the computer. Thanks to the program WordsTeacherUz one can learn foreign languages fastly, easily, without any effort and for free.

**Keywords:** *Task Bar, PupopMenu, WordsTeacherUz, Microsoft Access.*

Since the declaration of independence of Uzbekistan international relations with the countries of the world community have moved to a new level. In the period of globalization, the integration of political and cultural life, contributing to the strengthening of international relations in various fields, knowledge of foreign languages, especially English as a language of international communication plays an important role nowadays. It's the language of W. Shakespeare, Charles Dickens it's the language of computer technology. "He, who knows no foreign language, doesn't know his own one" said great poet Goatee.

As it's the age of computer technology all terms connected with the sphere of information technology are mostly in English. To understand it one should learn English. There are 3 basic methods of learning foreign languages:

- 1) Immersing Yourself in the Language
- 2) Focusing on the Most Important Things

### 3) Using Language Learning Software and Apps

You want to find out how you can learn a new language quickly, without expensive classes or language learning software? There are really no secrets or shortcuts - you just need to commit to your new language, be willing to work hard and not be afraid to make mistakes. Start with Step 1 below to find out more.

Some experts believe in order to learn foreign languages you should increase your vocabulary and others assist grammar should be learnt first of all.

Both of these ideas are also true. However, if a person goes to English speaking country, what happens then?

Without any English grammar lessons, one can speak English easily in 6 months. No one can deny it. As for me vocabulary is more important than grammar. Even some of the native English speakers don't know English grammar. I don't want to say grammar is unnecessary. In order to make sentences and speak correctly we need grammar.

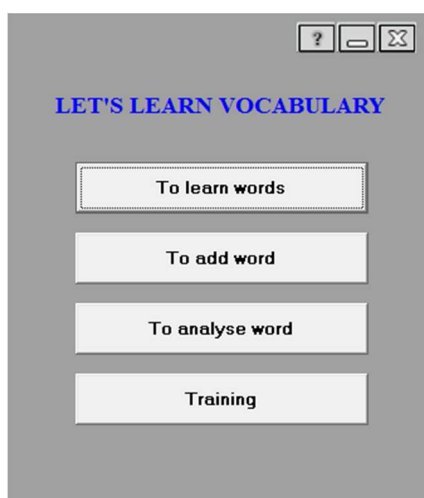
Each of us has his own choice how to learn English with grammar or without.

In the study of any foreign language vocabulary is great importance. But how can it be difficult to sit down and learn a lot of new words. Nowadays most people are so busy that they do not have a free time to such seemingly pushover. Moreover they do not have time to prepare for the next lesson because of their employment.

And once I came up with the bright idea - why not learn the words in the process. But it had to be done so that the person could not wriggle out of the study, for example, close the program and forget about it all. Thus was born the idea of the program for learning words. In fact, immediately and implemented.

We can't imagine our life without computer nowadays. Today a lot of people have computer or laptop in their houses or work places. So article vocabulary is one of the most effective methods of using computer technology experience.

The program is designed WordsTeacherUz for learning foreign words, phrases, expressions rather short, not looking up from the process of working on the computer.



The essence of the program are as follows:

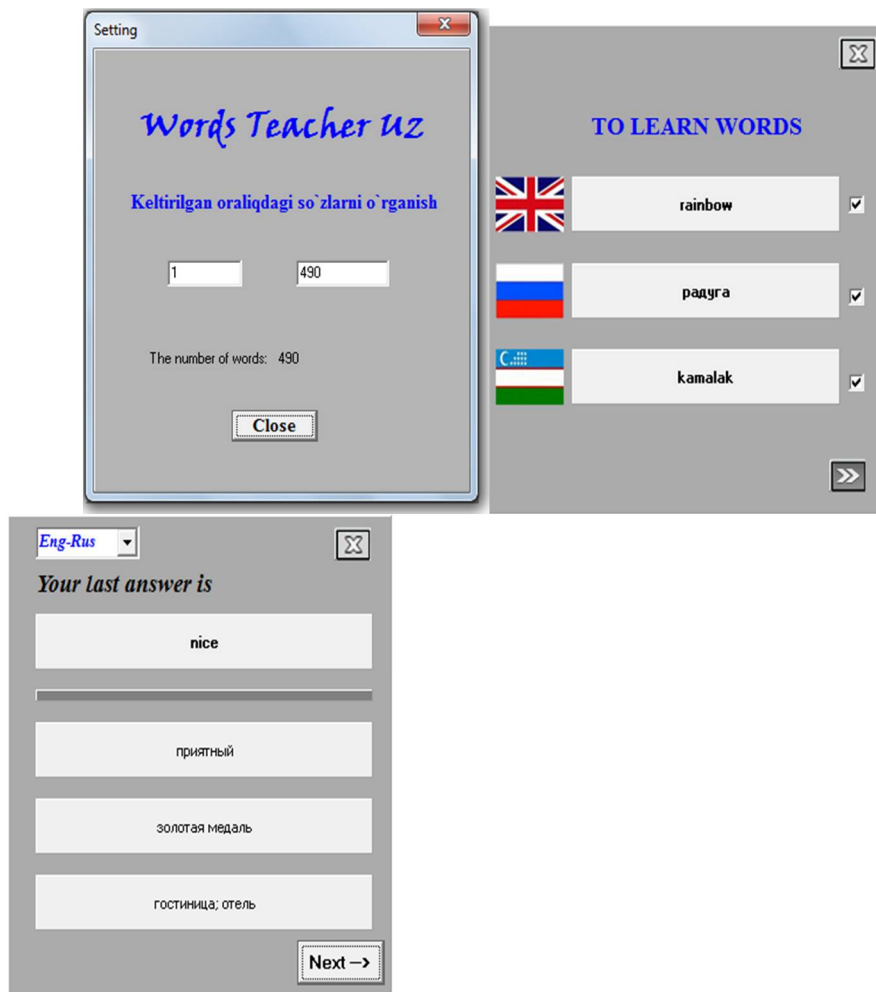
- \* The program works for 15 minutes automatically on the screen in the lower right corner. In the window 3 word answers are displayed.

- \* The user selects the option that seems true to him and find out whether he knows the meaning of the word or not. In case of an error the correct answer of course is shown.

- \* Only after selecting an answer (whether correct or not) and up closed symbol will be able to close the window to appear again after a 15 minute.

Benefits:

1. You can't close - lazy can't ignore training.
2. Do not set the interval time of the speech more than a half hour.
3. Do not show words that you learned N times (set in settings)
4. There is a mode simulator
5. It gets words from Microsoft Access.
6. The following program has 6 variants (Eng → Rus, Rus → Eng, Eng → Uzb, Uzb → Eng, Rus → Uzb, Uzb → Rus).



All of the features in detail and picture are described on the page program (address below).

WordsTeacherUz - program for learning words in English. It has been designed taking into account the fact that the majority of learners of English people are busy and can't spend much time cramming words. WordsTeacherUz idea is to force the user to learn the words do not keep working at the computer.

At any arbitrary time in the lower right corner of the screen displays a small window, which contains the word, and 3 types of translation. Close window can only then, when one of the options. The program can be used to improve discipline, it is so simple it can't be closed, and the questions will continue to emerge.

For a more comfortable using the program, you must configure it. In the settings you can select the language, and pass those words that are already well learned.

During the working day or in the process of study most of us use computers and that's why this program gives us a great opportunity to learn new words.

WordsTeacherUz program works for 15 minutes automatically reminding us to learn new words. For example, a bank worker spends about 6 hours a day in front of the computer. In each 15 minutes one can learn at least only 2 words and about 50 words are learnt a day. Using the program 1500 words in a month can be learnt easily, as a scientist assist, it is enough to understand the information in the newspaper without using dictionary. If you train for 2 months your vocabulary reaches 3000 of new words. Each person with 2500 new words can easily communicate.

**TO ADD WORD**

*English*

*Russian*

*Uzbek*

**Add**

*Select language*

*Write word*

Eng	Rus	Uzb
magazine	журнал	jurnal
main (meal)	основной	asosiy
marathon	марафонский бег	marafonda yugurish
marmalade	джем	murabbo
married	женатый; замужняя	turmush qurgan
meal	приём пищи; еда	ovqat; taom

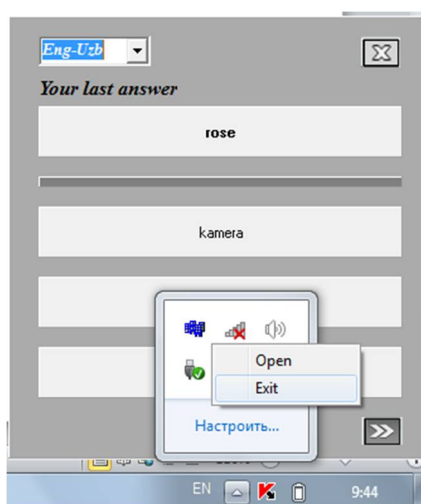
This program made through C++ Builder. As the program is united with Microsoft Access, you can easily place words to the base. For instance you can copy words from the Internet and send through paste.

WordsTeacherUz program is on the basis of the above methods.

There are a lot of advantages of WordsTeacherUz program who wants to learn foreign languages fast, easily and without any effort you can learn new words:

- during the working time
- for free
- in 6 variants (several languages)

Using PupopMenu you can leave or open the program. For example by pressing “Exit” button in Task Bar window you can leave the program.



In my opinion to know English today is absolutely necessary for every educated man, for every good specialist.

#### **REFERENCES:**

1. Deitel H.M. “C++ How to Program”, Fifth Edition, 2005.
2. Культин Н. “C++Builder в задачах и примерах”, 2005.
3. Архангельский А.Я. “Программирование в C++ Builder”, 2010.
4. [www.wikihow.com](http://www.wikihow.com)

## IN JAVA PROGRAMMING LANGUAGE WORK WITH POSTGRESQL

*F.I.Qobilov, N.A. Atashikova*

***Summary.** The Java programming language is turning into creating language program, which is based on Internet. Programming and creating software tools matters importantly as a unique role in the development of ICT. The specialists of this area are demanded for effective using of modern technical opportunities during expanding opportunities for the development of the technology. The technical capabilities express with the help of software.*

***Key words:** Postgresql, Java, Language Work, ICT*

The processes such as the development of information technologies and ever-increasing flow of information, the changes of information in the world, need to find new ways of measures in reproducing information in a time.

It is important to create a database for the process of information storage, transmission and reproducing, and to use them broadly.

**Key words:** JDBC, Boolean, String, Database, WAL, Remote Access to Postgre SQL, CRON

### JDBC

Before we start using PostgreSQL in our Java programs we need to make sure that we have PostgreSQL JDBC and Java set up on the machine. You can check Java tutorial for Java installation on your machine. Now let us check how to set up PostgreSQL JDBC driver.



- Download latest version of *postgresql-(VERSION).jdbc.jar* from [postgresql-jdbc](#) repository.

- Add downloaded jar file *postgresql-(VERSION).jdbc.jar* in your class path, or you can use it along with – class path option as explained below in examples.

Following section assumes you have little knowledge about Java JDBC concepts. If you don't, then it is suggested to spent half and hour with [JDBC Tutorial](#) to become comfortable with concepts explained below.

With JDBC, a database is represented by a URL (Uniform Resource Locator). With PostgreSQL™, this takes one of the following forms:

- *jdbc:postgresql:database*
- *jdbc:postgresql://host/database*
- *jdbc:postgresql://host:port/database*

### **Boolean**

When using the V3 protocol the driver monitors changes in certain server configuration parameters that should not be touched by end users. The `client_encoding` setting is set by the driver and should not be altered. If the driver detects a change it will abort the connection. There is one legitimate exception to this behavior though, using the COPY command on a file residing on the server's filesystem. The only means of specifying the encoding of this file is by altering the `client_encoding` setting. The JDBC team considers this a failing of the COPY command and hopes to provide an alternate means of specifying the encoding in the future, but for now there is this URL parameter. Enable this only if you need to override the client encoding when doing a copy.

`allowEncodingChanges = boolean`

### **String**

The character set to use for data sent to the database or received from the database. This property is only relevant for server versions less than or equal to 7.2. The 7.3 release was the first with multibyte support compiled by default and the driver uses its character set translation facilities instead of trying to do it itself.

`charSet = String`

The driver supports both the V2 and V3 frontend/backend protocols. The V3 protocol was introduced in 7.4 and the driver will by default try to connect using the V3 protocol, if that fails it will fall back to the V2 protocol. If the `protocolVersion` property is specified, the driver will try only the specified protocol (which should be either "2" or "3"). Setting `protocolVersion` to "2" may be used to avoid the failed attempt to use the V3 protocol when connecting to a version 7.3 or earlier server, or to force the driver to use the V2 protocol despite connecting to a 7.4 or greater server.

`protocolVersion = String`

## **Database**

Database ... they're everywhere. They are simply there is no escape. Today, few people faced with the programming of applications that use the database. Ranging from simple (and sometimes complex) text files with its own structure, finishing with a painfully familiar SQL-oriented DBMS. Here the actual Java developers could not stay away (but what else?) And wrote an interface between Java-based applications with databases. Here and below we mean the database DBMS using SQL. It happened some time ago. Because JDBC little changed for the better.

database

### ***The database name***

To connect, you need to get a Connection instance from JDBC. To do this, you use the DriverManager.getConnection() method:

```
Connection db = DriverManager.getConnection(url, username, password);
```

Considering this interface, you can draw a parallel with the famous DBI / DBD, language Perl. The similarity is very noticeable. Both of them work on almost identical pattern: having a single interface, connect the driver to work with a specific database and actually start writing. If we need to change the database - changing driver. How it is implemented in Perl, we are still a little interesting, but the JDBC consider in more detail;).

First, install the driver itself, we use the database. Let it be PostgreSQL. Any JDBC driver can be a jar-archive. In order of their program could use it, you need to CLASSPATH environment variable contains the path to it.

Choose any way, focusing on the fact whether you will continue to move to another DBMS. If so, I think, the second method is preferable. Especially for those who write programs for the public. In addition, it is peculiar to want to choose what to use.

Warning, if you have made one of these methods, but in the performance of your program, you get the error No driver available - this is likely to mean that you just do not have the driver path in the CLASSPATH.

```
jdbc:postgresql:database;
```

```
jdbc:postgresql://сервер/database;
```

```
jdbc:postgresql://сервер:порт/database;
```

Where the server - the address of the server where the database is located, the port - it's tcp-port on which you want to connect and dbname - is the name of

the database that we want to use. It should be noted that the DBI / DBD this line has the form:

```
dbi:postgres:dbname=database;
```

```
host=сервер;port=порт;
```

As can be seen, they are very similar. Instead, postgres / postgresql can be anyone you chose the driver to work with your database, such as mySQL.

Replication is a basic technology for any database server because the downtime or the data loss can result in reducing accessibility, productivity and product confidence. Using data replication from a master server to one or more standbys decreases the possibility of any data loss. With PostgreSQL, you can easily create a database cluster with one or more standby servers, which are ready to inherit and perform operations in case the master server fails.

## **WAL**

Using WAL (Write-Ahead Logging) data is the fastest available way of replication with a great performance, so-called asynchronous replication. In this case, the master database server works in archiving mode just writing the data to the storage. While the standby database cluster operates in recovery mode, reading the master's WAL files. These files are transferred to the standby DB promptly after writing is completed. In such a way, if master server totally fails, the WAL content streams to the standby cluster with just a few seconds delay.

So, let's see how to get advantages of PostgreSQL database clustering and high availability by setting up the hot standby (or streaming) replication, i.e. asynchronous binary replication to one or more standbys, queried as a read-only databases.

You are able to set a DB cluster in a two ways:

- automatically (via one-click widget)
- manually (following the step-by-step instruction)

### **Remote Access to PostgreSQL**

You have an opportunity to work with your databases remotely from your computer via Public IP without having to login to our dashboard. Here's a how-to for PostgreSQL users. It can be used both for Java and PHP environments.

- **Create an environment**
- **Remote connection to PostgreSQL**

### **CRON**

The database servers include a cron folder with the config file, where cron jobs can be configured.

For example, here you can set the scheduled backups of your database. For MySQL, MariaDB and MongoDB servers, there are already cron settings, which can be used to run the default backup script. These settings just need to be uncommented and edited based on the custom requirements. The detailed information on Cronjob configuration can be found in the Setting Up a Cronjob document.

### **INTERNET RESOURCES:**

1. [http://www.tutorialspoint.com/postgresql/postgresql\\_java.htm](http://www.tutorialspoint.com/postgresql/postgresql_java.htm)
2. <https://jdbc.postgresql.org/documentation/80/connect.html>
3. [http://www.javaportal.ru/java/articles/JDBC\\_java\\_BD.html](http://www.javaportal.ru/java/articles/JDBC_java_BD.html)
4. <http://docs.jelastic.com/ru/connection-to-postgresql>
5. <http://docs.jelastic.com/database-configuration-files>
6. <http://docs.jelastic.com/postgresql-database-replication>

**NEWS FOR SIMPLICITY IN THE FIELD OF LEARNING ENGLISH**

*Summary.* Information about software programs, which are used very often by English learners among the Uzbek. New software program "Diction", Inner functions of "Diction".

*Keywords:* object-oriented programming, understandable graphical user interface, embedded mode of database engine, RTF file format, Java programming language.

Nowadays there are so many kinds of Uzbek-English or English-Uzbek dictionary software programs with different names and graphical user interfaces which Uzbek computer users who are English learners could use and such dictionary programs are going to be created. Among software programs there are so many types of text editors such as "Microsoft Word", "WordPad", "Note", "NotePad++" and others. Even some of them are able to check for syntactic mistakes in text too.

Computer users who are learning English and want to improve their vocabulary usually use dictionary software programs to find out its translation in Uzbek, pronunciation, spelling and meanings with other words. And they use some word editor with the aim of writing a biographic text about themselves or an essay in another theme. When some word makes them hesitate with its Uzbek meaning as they typing the words which are in their mind or viewing some text on computer, at once they will open (run) a dictionary program they have, type that word on it to search for meanings or other information about that word. User might do it for several times until the end of the text. Mostly such using two separated computer programs makes user be diverted for a while and sometimes user might make mistakes.

New software program "Diction" for personal computers includes some parts of two types of software programs mentioned above and has several comfortable capabilities for the Uzbek users who learn English. This program is aimed to help

users to write essays in English without any mistake, to save it, to open and edit which are saved, to use English-Uzbek and Uzbek-English dictionary in the same window and quickly. Users will be provided by these functions to get the minimal degree of diversion, learn right spelling of English words, easy and fast searching in dictionary, saving time, making English easier, getting adapted in some field of English by using functions "My dictionary" and "making own notes".

"Diction" has purposes to be created as follows:

- Make English learning easy;
- Hold users attention without diversion;
- Save users time (even slightly);
- Help user to write essays independently without making spelling mistakes;
- Improve user's vocabulary;
- Help users to stay up to date and learn news quickly in the field of English language and English in some field.

The graphical user interface of "Diction" is designed to be understandable to anyone at first sight and supports two types of languages. These languages are Uzbek and English. And there are many useful functions in this program, so let's check up them:

### **Check for spelling mistakes**

Mostly users make some spelling mistakes unexpectedly against syntactic rules by typing words lacking one or more letters or by spelling words incorrectly when they are typing an essay in some theme. Like in text editor "Microsoft Word" program checks for spelling mistakes at the moment of typing an English word in the text editor part of "Diction". Words which are not spelled incorrectly will get red at once. By this action user's attention will be attracted by the red words and user will be warned about the mistakes.

### **Quick view**

Sometimes a user has hesitation or has no idea about the meaning in Uzbek of any word in some text that user typing or viewing opened that exists. With the purpose of working out such cases "Diction" provides quick translations or meanings of a word in text. At the moment of selecting any word in the text (providing double click on that word) this function introduces meanings in Uzbek, phonetics and explanations in Uzbek of the selected word. The information will be shown on a new window.

### **Text processing**

As in many popular word editor programs, there is a saving capability in "Diction", on the purpose of using information (getting information, editing or send to another computer that text) that is typed in the text next time. And in "Diction" user can open and edit text that is saved too. The text user typed will be saved in any folder, by name as user's wish under RTF (Rich Text Format) file format.

### **Dictionary**

Dictionary is one of the two main parts of this program. There is English-Uzbek and on the contrary - Uzbek-English quick dictionaries in "Diction". User can use English-Uzbek dictionary on the "Quick view" side of the program too. When user looks up some English word from dictionary user will be provided information about meanings in Uzbek, phonetics and definition in Uzbek of that word. And user will get offered a list of English words when user looks up some Uzbek word in dictionary. If user selects one of the words in the list he (she) will get information as looking up an English word.

### **Making own notes**

As learners go deeply in English they will meet modern, new, local meanings of some word, abbreviations or phrases. In that case they will feel the need to write that information somewhere to avoid forgetting them. Users are satisfied with such needs in "Diction" by making own notes. In addition to definition in Uzbek of every word, phrase or expression in the dictionary, user is able to make (and save)



own notes for them. Those notes will be shown after definition in Uzbek of words in the dictionary.

### **My dictionary**

The vocabulary of every language is getting larger and larger by generating or deriving new words, phrases, phrasal verbs, sayings, terms and abbreviation as the day goes. It is natural. A dictionary with constant sized data will not be useful for a long time in that condition. To workout such cases there is an additional part to the dictionary by name "My dictionary" is added in "Diction". In this part a user is able to independently and individually type expressions, words, phrasal verbs, phrases, sayings, terms or abbreviations which appeared newly and Uzbek meanings, phonetics or definitions of them. With this capability a learner can learn English in some field and hold up to date in English.

The creators of "Diction" are planning to make its functionality larger and more useful for the Uzbek English learners. Next versions of this software program is being planned to be able to translate text from English to Uzbek and opposite of this. With this function English will be simpler for the Uzbek users. The plan includes the creation of this software program for other types of operating systems(such as Android, IOS), If "Diction" will be accepted by Uzbek computer users preferably in the future. The creators hope that "Diction" will take its place in Uzbek users' lives that are learning English. And it will prove that it is the right software computer program what it's created for.

The dictionary-text editor software program "Diction" has been created by collaboration of two undergraduate students of Tashkent University of Information Technologies. The program has been coded in Java programming language using object oriented programming, and is platform independent so it can be run on several types of operating systems (Windows 2000, XP, Vista, 7, 8, Linux, Ubuntu, and Mac). Embedded mode of H2 Database Engine is used to store data of the software program.

## TEACHING PROGRAM “C++ FOR DUMMIES”

*V.A. Kim, U.A. Sultanov, M.S. Yusupova*

**Summary:** *The following article is dedicated to the teaching students, who start studying C++ programming language. Teachers for presentation during studying process also can use it.*

**Keywords:** *C++, C++ for Dummies, modern technologies, programming, transformation, values, measurements, arrays, graphics, functions.*

Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!

In century XXI modern technologies are considered those to play one of the most important roles. What was just a fantasy yesterday is reality today, what was hard to imagine then is being researched and developed now. That is why nowadays the business that is connected to modern technologies is the most profitable. And all these things are created for human usage in order to simplify people's life, provide fast and easy access to necessary information in which people are interested in.

Programming today is not just studies that might be useful in the future, but it is a real chance to earn money, become useful, recognizable, etc. Indeed, it is possible to create sites, different applications and programs for PC and mobile gadgets and others –this is what today is important and profitable. However, we have faced with a poor programming education in school which made us decide to create a demonstrational program – “C++ for Dummies”. With the help of this program, teachers can show different tasks and examples for different topics that learned by the 1st course students in TUIT. This can make studying process more efficient and understandable for fresh students, which take first steps in studying programming.

## II. Features of program.

Term “Comfort” consists of two things: design and simplicity. As this program was created mostly for students, it was easy for us to manage this task as we are students ourselves. And we hope that someday this program will be used by many people.

The base of “C++ for Dummies” is a “Copy-Paste”, i.e. we copy our values and paste them into prepared code. The main task of the student is to write correct variables, which are used in C++. If there is a mistake in lexicon or maybe in punctuation, compiler won't operate and we will get only red lines – mistakes.

Everybody knows that the best way to learn something new is to bring an example and show the way of using this information on practice. For instance, teacher explains students how to find a maximal element in an array. But he or she doesn't have a chalk to write on a desk or maybe this code is too big and it will take much time. And then this program takes effect.

“C++ for Dummies” program has both English and Russian interface , to make it more universal , for students ,that don't know English.

It can explain usage of such topics in C++: “Functions”, “Arrays”, “Graphics” ,which are names of 3 insets in main page of the program. In “Function” inset user can learn how to use trigonometrical functions, find sum, diff, factum, quotient, and by using C++ programming language solve different simple equations. By using “Arrays” inset user will have ideas about matrices , arrays and simple operations with its. In “Graphics ” inset user can see usage of how plain graphical objects are created, can draw .

## III. How to use a program.

Teacher opens the program, chooses a language which he/she prefers, passes authorization by entering data, which is used to protect from idlers:

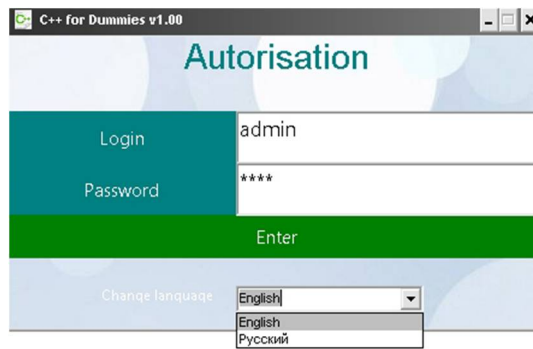


Figure 1.

Chooses “One-dimensional array” (for example):

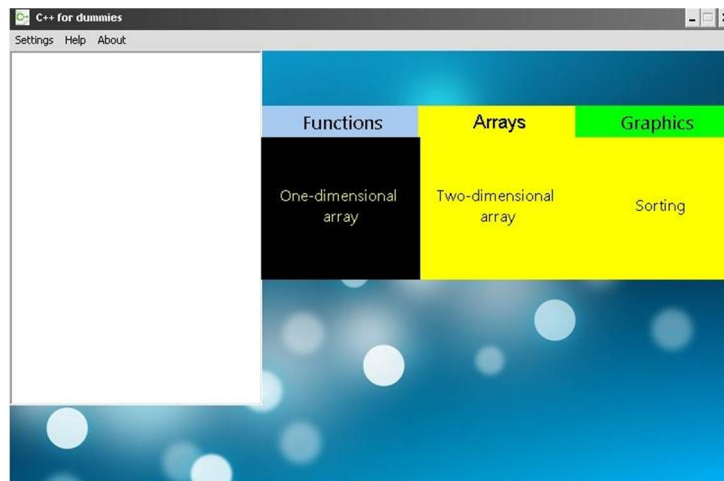


Figure 2.

Writes quantity in a box “Number of elements”:

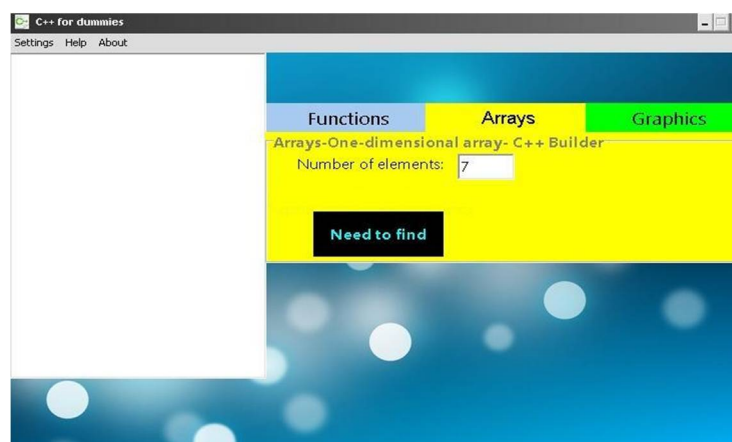


Figure 3.

Presses, “Need to find” and choose “Maximum”:

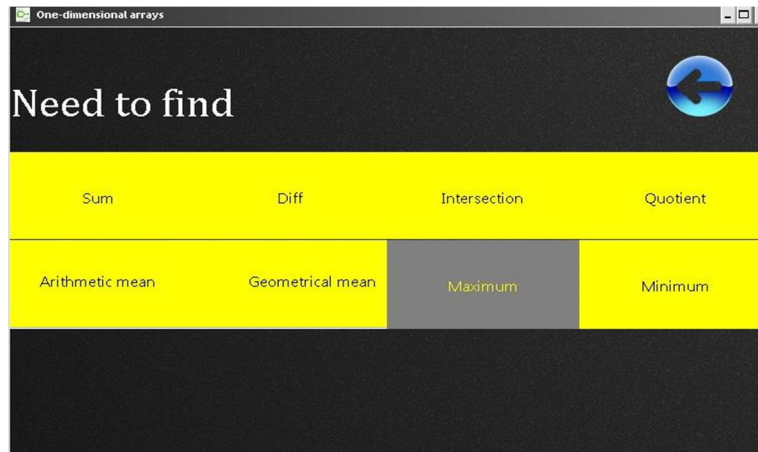


Figure 4.

And copies code by pushing a button “Copy” into a C++ compiler (Borland C++ Builder, Dev C++, etc.):

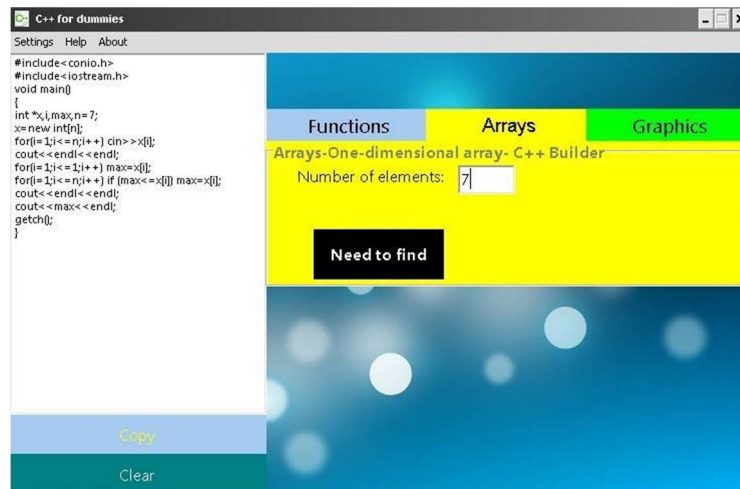


Figure 5

And answer will be shown on the screen:

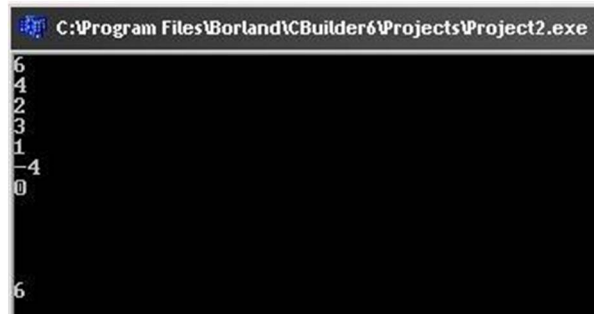


Figure 6

First we choose a language and write a password, which are used for an authorization. If we choose “English” and password is correct, some windows will be hidden, but others will be shown to us. Otherwise, if we choose “Русский”, the first ones will be shown (Figure 1).

Then we choose one of the three given ways, namely “Functions”, “Arrays” and “Graphics.” (Figure 2).

If you choose “Arrays”, we need to write an amount of the elements of arrays and decide what to do with them (Figure 2-4).

Next program will transform our actions into code and show on the left from panel. We can copy this text by using keyboard, and by a button “Copy” (Figure 5).

Finally, we paste the code into C++ and compile (Figure 6).

But previous notes were just a principle of program’s work. However, what about transformation process? There is only one action.

After we have set all our values, program will carry them into a prepared code:

```
Text + "#include<conio.h>" + "\r\n";
```

```
...
```

```
Text + "int *x,i,max,n=" + Text + ";\r\n";
```

...

, where “Text” – is a place, where our measurements were taken from.

## **ALL AVAILABLE WEB-SERVICES IN ONE FACEBOOK MOBILE APPLICATION**

***P. Kim, N.A. Atashikova***

***Summary.*** Nowadays Facebook is one of the largest and most popular social networks all over the world, including Uzbekistan. In this article we emphasis the actuality of using this social network and mobile application Facebook. In addition, I suggest my own concept of developing Facebook mobile application.

***Key words:*** web-services, Facebook, mobile application

### **Introduction**

Facebook. What is it?

Nowadays Facebook is one of the largest and most popular social networks all over the world, including Uzbekistan. The number of active users has already reached approximately 1.3 billion people. It is noteworthy that Facebook was founded by Mark Zuckerberg and his roommates, namely Eduardo Saverin, Dustin Moskovitz and Chris Hughes, while studying at Harvard University in 2004.

Like any social network, Facebook represents a resource, the main objective of which is to provide a channel of communication in the Internet. Every visitor of this huge Internet community is offered to register in order to fully enjoy all the features. The more reliable and detailed information is provided by the user, the more likely that his or her friends/acquaintances/colleagues/relatives will be able to find the user’s profile.

### ***The statistics of Facebook users***

On July 2014 the number of the users, who visited their web-page at least once during the month or specified period of time, totaled to 1.32 billion people.



Tracking the “Like” button and cookies of the users obtained this information. In March the daily audience of Facebook was recorded as 810 million. Approximately 810 million people actively use the mobile application every month. The mentioned social network processes 300 million photos and 3.2 billion ‘likes’ and comments every day.

*"New statistics of Facebook: 1.32 billion users, 30% of which visit the network exclusively via their mobile phones".*

The social network receives 62% of advertising revenue from mobile users. This is a rapid change for the company, considering the fact two years ago that it did not have a mobile advertisement at all.


It is interesting fact that out of 1.32 billion people, who use Facebook every day, 399 million people, nearly one third, visit the resource only through the mobile phone. It is also worth mentioning that the monthly audience of Facebook users increased by 14% compared to previous year, while the number of mobile application users demonstrated a raise of 31%. According to Mark Zuckerberg, the average American spends more than 40 minutes a day on Facebook.

The table below represents the list of social networks that have the audience of active users more than 100 million.

<b>Name</b>	<b>The number of registered users</b>	<b>The number of active user accounts</b>	<b>The date of statistics</b>	<b>The date of launch</b>	<b>Country</b>
<a href="#">Facebook</a>	1.4 billion	1 billion	January 2014	February 2004	
<a href="#">Google+</a>	500+ million	235 million	December 12	June 2011	



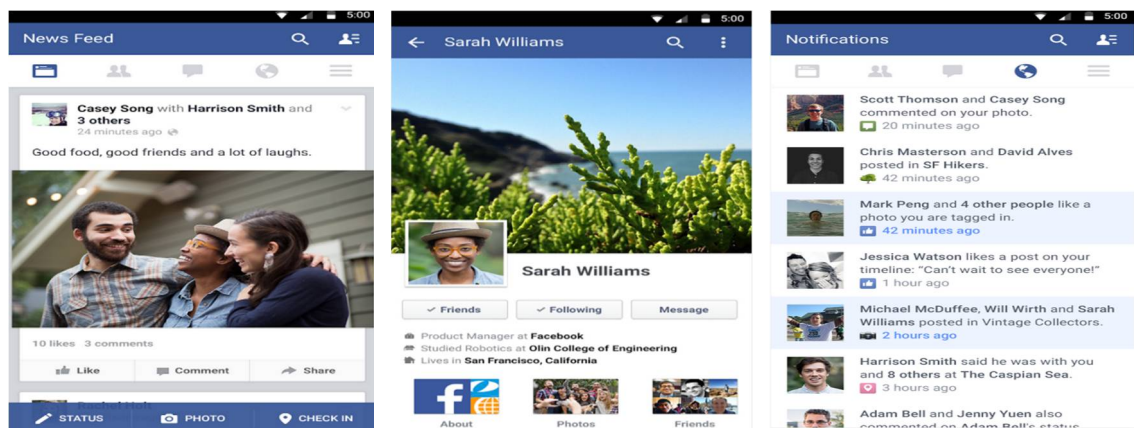
Name	The number of registered users	The number of active user accounts	The date of statistics	The date of launch	Country
<a href="#">Tumblr</a>	220+ million	100 million.	May 2013	February 2007	
<a href="#">Twitter</a>	500+ million	200+ million.	December 2012	March 2006	
<a href="#">LinkedIn</a>	200+ million.	160 million.	January 2013	May 2003	
<a href="#">Tencent Qzone</a>	623,3 million.	150 million	January 2014	2005	
<a href="#">SinaWeibo</a>	500+ million.	100+ million.	February 2013	August 2009	
<a href="#">Vkontakte</a>	230+ million.	314.7 millionvisitors per month (according toLiveInternet) 80+ million of active user accounts	January 2014	September 2006	
<a href="#">Odnoklassniki</a>	205+ million.	148 million.	April 2013	March 2006	

Name	The number of registered users	The number of active user accounts	The date of statistics	The date of launch	Country
<a href="#">Renren</a>	160+ million.	45+ million.	August 2012	December 2005	

### *Facebook's mobile application*

Facebook mobile application is available for smartphones and tablets which use all popular operating systems such as Android OS, Apple iOS, Windows Phone OS. It is considered to have an easy and quite intuitive interface. You can do the following:

- always find out the news about your friends
- update, post photos and videos
- Receive notifications when your friends comment on your publication and press "Like"



There is an interesting question: if the mobile application of Facebook is so popular, why not to combine all of the currently available web-services into the one already existing application? Of course, as a result, many IT-companies and

developers will suffer huge losses because the users will no longer need to download and install the applications, which are designed solely for one. On the other hand, imagine how convenient it would have been.

Now let us move directly to the idea and the concept of this article.

*“Why would someone create a website, if he or she can simply create a page on Facebook?”*

Social network such as Facebook provides the possibility of creating not only an account and profile, but also the corporate page of your company or firm. In fact, it can contain all the necessary information and photos about the interested activities of the business.

However what if it will be possible to make Facebook page’s functionality comparable to a full-fledged web site? Perhaps, add the possibility to edit and design your page. Additional online services can be also useful. Such innovations consequently may lead to the situation when the user would no longer think about such things as a purchase and registration of the domain name, a purchase of the hosting, and sometimes even their own server.

There would be no references and web addresses. Your website visitors will no longer have to remember the name and address of the site, because all they would need is to find you and your page on Facebook.

It would be much more convenient for Facebook users to book taxi services online, make restaurant reservations and purchase tickets to the cinema or theater without opening the new application or leaving the opened one.

Online shopping could also be improved. At the moment most of the shops have webpages on Facebook, where potential buyers could find pictures of the goods as well as the prices. However, in order to buy something, the client has to go to the website and again look for that product and make online ordering.

At the moment, such application of Facebook as Chat has not possess the possibility of making video and voice calls. Why not to add the features of such popular applications as Skype and Viber, so that there would be no need of

registering and creating account on other third-party websites. These all could have been done without leaving Facebook account.

Another useful feature could be adding the possibility of making a direct call by phone. In that case, you would no longer need to save the contacts on your phone book, but simply go to the Facebook page of your friends and call from there.

#### **INTERNET RESOURCES:**

1. <https://ru.wikipedia.org/wiki/Facebook>
2. <http://profacebook.ru/что-такое-feisbuk-facebook>
3. <http://geektimes.ru/post/230905/>
4. [https://ru.wikipedia.org/wiki/Список\\_социальных\\_сетей\\_с\\_более\\_100\\_млн\\_ионов\\_пользователей](https://ru.wikipedia.org/wiki/Список_социальных_сетей_с_более_100_млн_ионов_пользователей)
5. <https://play.google.com/store/apps/details?id=com.facebook.katana&hl=ru>

#### **AUTOMATIZATION OF THE WORK OF NEIGHBORHOOD COMITIES**

*M.A. Maxammadjonov, D.M. Alikulova*

***Summary:** The article is dedicated to the automatization of neighborhood comities work based on program named Mahalla. It gives the full description of program's main function and its components. The article has the high practical value as it presents the first ever program aimed at computerizing neighborhood comity's system. The purpose of presented program is to increase the effectiveness of comities' work.*

***Key words:** automatization, neighborhood comities, information system*

We are living in technologically developed time. New inventions and new technologies are created in different countries every day. These technologies service to improve people's life, to increase the effectiveness of work, to

economize people's time and to supply with many other conveniences, which people need. Computers are on the basis of these comforts. Computers service as one of the main means of world developing. Computer programs can show all possibilities of the computers. There are many computer programs nowadays; they are made for comforts of users. For example, people can pay every payment staying at home with e-payment program. In addition, other programs need for people. People can speak with another people; people can solve difficult logic, mathematic problems with help computer.

In many developed countries, every governmental work is done by “electron government system”. People can send their requests, offers, proposals, statements to government through web sites. All of service centers, especially, hospital, bank, passport administration, tax administration, municipal payments are paid through electron system, as it is very comfortable and easy way of payment. Nowadays, there are many spheres, which are working automatically because of computerized information. Exactly, in Uzbekistan there was accepted the law about “Transition to electron government” (“Elektron hukumat to'g'risida”)<sup>1</sup>. Electron government consists of a very big electron system. All fields of government are connected to each other with the help of created electron programs and web sites.

This program is designed to minimize paper work, automate and computerize the work of neighborhood comities. Program has a number of functions facilitating the work of organization. Consequently, it is easy to use<sup>2</sup>.

Neighborhood comity is a body, which is able to govern itself. There are many tasks in neighborhood comity. For instance, there is a possibility of appearing some difficulties to look for the information of a person who is living in this mahalla, especially, if there are thousands of people who belong to this MAHALLA. Moreover, to register inhabitants for the election process is very

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<sup>1</sup> The low of the Republic of Uzbekistan about Electron government. 2013

<sup>2</sup> Bajin I.I. Informational system of management. 2000.-688p.

difficult work for neighborhood comity. This program is designed for all duties of neighborhood comity, which tied with people.

Therefore, the program is designed for automatizing of neighborhood comity's work. Neighborhood comity can take all of information about people. To search people according to some parameters, select them is very easy and faster in this program than doing it with the help of papers.

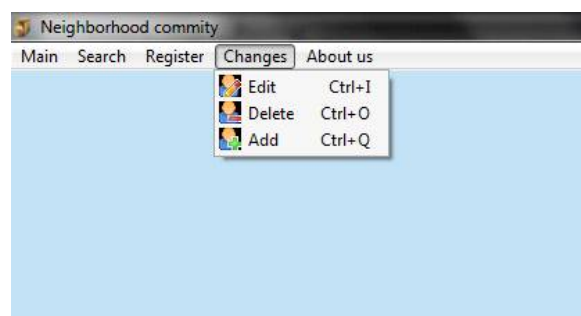
There are many possibilities and comfort abilities in this program. It is easy to use this program. Program is understandable for people of any ages. There is database in this program. The database is protected. With the help of this program, you can find a person according to his or her age, address, profession and work place.

So, let us to introduce you with the program:



*Picture 1. Entering to program*

The program is designed in C++ language. To enter the program you must choose one of them: User or Administrator. User cannot use all possibilities of this program, but only to search people, take information about them. Administrator can use any function of the program. Administrator can change the program, and can delete or insert new person.



*Picture 2. Main menu*

There is a main menu in the program. The main menu consists of following parts: Main(View all people; Print; Exit), Search(Age; Street; Name/Surname; Sex; Nation; Work; Ill-provided; Convict; Other parameters), Register(Living with register; Living without register; Not living with register), Changes(Edit; Insert, Add), About us(How to use; Program maker)<sup>3</sup>.

The menus complete exercises according to their name. The information about citizens is kept in the following way: Person (Surname, name, father's name, nation, sex, date of birth, passport number, education, street name, home number, the host of the house, work, phone number, convict, ill-provided and citizenship).

№	Фамилияси	Исми	Шарифи
1	Пўлагова	Дилшода	Муродхўжаевна
2	Юнусова	Нигора	Алиперовна
3	Холмухаммедов	Сардор	Турдимухамедов
4	Госулов	Отабек	Анварбекович
5	Расулова	Камола	Турдимухамедов
6	Турдимухамедова	Диёра	Сардор кизи

Picture 3. The list of all people

One of the high possibilities of the program is that you can search people according to the age parameters. Such function can be very useful at elections period when our aim is to find people who are 18 years old and elder. For example, you can search people of 18+ category on the 29<sup>th</sup> of March)<sup>4</sup>.

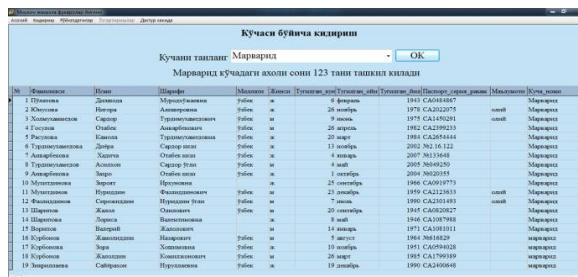
№	Фамилияси	Исми	Шарифи	Миллати	Жинси	Туғилган_кун	Туғилган_ой	Туғилган_йил	Паспорт_сиртқи_рақами	Миллати
1	Пўлагова	Дилшода	Муродхўжаевна	Ўзбек	ж	6 февраль	1943	CA084887		
2	Юнусова	Нигора	Алиперовна	Ўзбек	ж	26 ноябрь	1978	CA222075		олий
3	Холмухаммедов	Сардор	Турдимухамедов	Ўзбек	м	9 июль	1975	CA1450291		олий
4	Госулов	Отабек	Анварбекович	Ўзбек	м	26 апрель	1982	CA2399233		
5	Расулова	Камола	Турдимухамедова	Ўзбек	ж	29 март	1984	CA2654444		
10	Муродхўжаева	Зарбат	Нигора	ж	ж	25 сентябрь	1966	CA0939773		
11	Муродхўжаев	Нуриддин	Феликсжоневич	Ўзбек	м	23 декабрь	1959	CA2123633		олий
12	Феликсжоневич	Сирожидин	Нуриддин угли	Ўзбек	м	7 июль	1990	CA2301493		олий
13	Шарифов	Жалош	Отажонич	Ўзбек	м	20 октябрь	1945	CA0820827		
14	Шарифов	Ларза	Викторьевна	ж	ж	8 май	1946	CA1879988		
15	Воронцов	Валерий	Жалолович	м	ж	14 январь	1971	CA1881011		
16	Хурбонна	Жавоидилли	Наврозич	Ўзбек	м	5 август	1964	2861829		
17	Хурбонна	Зора	Халимовна	Ўзбек	ж	10 март	1951	CA094028		
18	Хурбонна	Жалолдин	Қамилжоневич	Ўзбек	м	26 март	1985	CA1799389		
19	Захидиллова	Сайёгон	Ноголжонна	Ўзбек	ж	19 декабрь	1990	CA2400648		

Picture 4. Search by age parameter

<sup>3</sup> Meyers S. The effective use of C++. 55 relevant advices of improving the structure and the codes of your programs. DMK, 2006

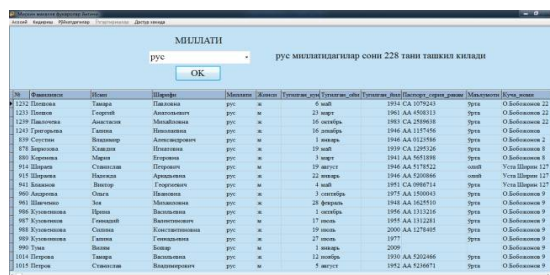
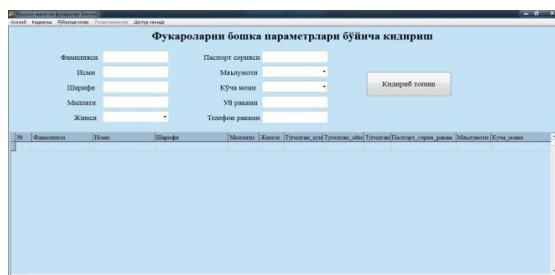
<sup>4</sup> The resolution of central commission of Republic of Uzbekistan, 2014

The menus and forms designed very perfectly. The codes are written optimally, that's why program works very easy and without any errors.



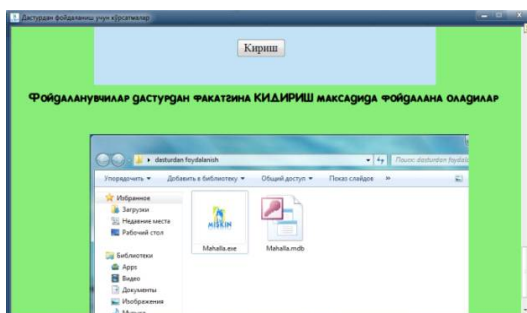
Picture 5. Search by street parameter

You can select people by any parameters<sup>5</sup>.



Picture 6. Search by nationality parameter Picture 7. All parameters

There is a manual form in the main menu to make it easy to understand the usage. There are all rules to use the program.



Picture 8. The form "About us"

Therefore, this is the description of the program. The program has put into the practice and used by Miskin neighborhood comity of Olmazor district of Tashkent. It is suggested to improve the program and to present it to other neighborhood comities after Miskin neighborhood comity evaluates the possibilities and relevance of the program.

<sup>5</sup> Strastrup B. Design and evolution of C++. 2006



## REFERENCES:

1. The law of the Republic of Uzbekistan about Electron government, 2013.
2. Bajin I.I. Informational system of management, 2000. – 688p.
3. Meyers S. The effective use of C++. 55 relevant advices of improving the structure and the codes of your programs. DMK, 2006.
4. The resolution of central commission of Republic of Uzbekistan, 2014.
5. Strastrup B. Design and evolution of C++, 2006.

## THE MOBILE APPLICATION “SERV-U”

*Sh. Mannonov, D. Gafurova, F. Musaeva*

***Summary:** The following article is dedicated to a new mobile application, which solves some society problems, such as wasting time, difficulties on destination, problem on using public transportation, limited services in Tashkent. The following mobile application presents several effective services.*

***Key words:** telecommunication, information society, telephone, mobile application, e-government”, electronic services*

Now, people do not need to waste their time on searching for contact numbers or addresses, they will never be sad because of limited amount of services. People do not have to wait for public transports anymore. The only app presents people how to be a step ahead of troubles.

Since people grow as a society as well as each individual adds its own contribution its formation and development of society. Accordingly, in each period of time, there are various solutions has been used for issues such as saving time and exchanging communication over the geographical boundaries. As the result, over the years, variety of factors were driven force on development of telecommunication technologies. Early development signs can be taken as an example of danger warning beacons with using fire and smoke in order to make a signal over the long distances. In certain extend, it reduced the time of walking for

few days. As the time evolved, the speed of transferring information was improved with the help of using birds. In spite of that, security level was quite low. As the consequence, it caused increasingly high demand on secure and reliable means of communication.

Due to the high time pressure, data and information exchange has been accelerated. It led to emergence of using telecommunication tools in information exchange. At the end of nineteenth's century, the American scientist Bell came up with the concept of "telephone" which was the most reliable and fastest among above stated communication tools. Hence, issues of telephone networks as well as expenditures caused the primary reasons of launching wireless means of communication. Thus, mobile communication came out to world.

Over the years, in its stage of development of the telecommunication technologies, it has already become life companion of every individual. People are not only enabled to communicate with the help of these devices, but also they enjoy being aware of the world news, keeping in touch with distant relatives, making new friends, earning some money and so on.

However, it is obvious that, it all can be implemented with using only mobile apps. There was not any kind of apps in early mobile phones. Along the development of types of communication, mobile apps also enhanced. As a matter of fact, as an early indications of apps, with very simple platform, WML ( wireless mark up language) and JAVA apps can be provided, it also had very small amount of functions and there were only few bits of information processing.

In 2007, Apple i-phone with its rich volume of functions caused growing demand on mobile apps. It followed by Samsung, HTC, LG companies which started to market their Android operating system mobile apps which was discovered by the Google company. Also, Apple app store, Google Play Market, Windows Phone Store and Blackberry App World were considered as the mobile app market. The smartphones supporting GPS led to make people's life easier and to be full of stimulating applications. On the way of development of the field, not

only one country or only one company is taking responsibility, but all over the world's countries and all the people are adding their contribution into this sphere. Similarly, Uzbekistan also provided a number of opportunities to this field.

After gaining its independence in 1991, the country began paying attention to the use of techniques and technologies. In fact, building information society and e-government projects can be provided as an example. "E-government" was carried out according to telecommunication technologies, communication infrastructure and network development program in Uzbekistan during the period of 2013-2020 years. Implementation of "e-government" system includes strengthening of the state as well as population and economic sub relations between the objects, a significant increase in the volume of information which the government should provide, making it possible to access to various databases, the gradual introduction of electronic document management and other innovations. However, using information fully and appropriately is significantly important. All of these drive to strengthen relations between the population and government organizations.

In today's information society, programs, which directed to improve the living standards of people and saving time as well as spending time efficiently and effectively by all segments of population, play vital role.

It is the simplest belief that if each and every individual takes part in developing the country and making easier lifestyles with a little amount of work, as the result there will be gained huge role on developing government and on enhancing lifestyle of society.

As a citizen of Republic of Uzbekistan, I am going to recommend new mobile app program in order to add my contribution to the development and prosperity of my country.

The application is named **SERV-U** and it consists of several sections, which are connected to each other. Each of them serves to avoid wasting people's time that can be used for another efficient purpose. Because just by saving the time it is possible to make people happy, improve self-confidence and enhance effectiveness

of working. The app platform is quite simple and understandable, chosen service is made work via menu button.

The first section is named “**TASHKILOTLAR**” and includes addresses, numbers and working times of organizations located in Tashkent city. It is quite easy to get information about certain organization using searching tool.

The second section is named “**XIZMATLAR**”. There is information about service prices and state of petrol stations (whether they are working or not), cinemas and their timetables of films, airline ticket offices and prices of tickets for each line. Moreover, operators will often update the information.

There is a map, which informs you how to find short direction of the given address in third section. It includes directions of all types of public transport. That means, if you are waiting for a bus, you can easily find out where the target bus is and when it will arrive to your bus station. The application alerts you, if there is any other faster possibility to get to your destination.

The application **SERV-U** enhances the speed of movement of interactive services into new phase in our country and thus it leads the country to develop both economically and socially.

## **ENGLISH FOR CHILDREN**

***G. Murtazoyev, M.A. Nazarova***

***Summary.*** *The digital revolution has had a huge impact on the education system. It has brought many changes that has transformed the way people learn and perceive information. Especially for children who rather learn by watching, it is a good way to train them by computer or tablet apps.*

***Key words:*** *autism, disorder, visual, application (app.)*

The computer and the tablet technologies have been huge contributors to the transformation of the education system. These days there is a very wide range of language learning resources beyond traditional books. New media has created a

wonderful array of choices and virtual learning is one of those nice options. Therefore, I will be continuously monitoring what is available to you and compiling what I believe are the most helpful learning resources.

Languages are always hard to learn especially for the non-native speakers. In light of this, app developer designed applications that are capable of improving the language learning process. Whichever language it is that you want to learn, you can be rest assured that you are likely to find an app that can help you make progress. In this article, I will highlight my special app that can be used to help one study language.



Color words are key vocabulary in any language, at any age. Being able to describe something by its color is something we do every day.

Teaching colors to a [\*beginning English learner\*](#) can be challenging. They may not have enough vocabulary for you to be able to describe things to them in order to [\*teach colors\*](#).

Having a wide variety of styles included in my program will really help children understand, internalize and enjoy.



This interactive, beautifully illustrated and animated app for the computer is perfect for the toddler or speech-delayed child who is learning visually. It provides many opportunities to both hear (receptive) and see. This is a huge app due to the many animations, pictures and voice.

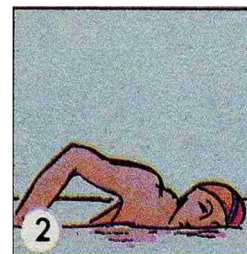
There are 15 simple verbs such as drink, eat, wash, and 12 verb + preposition forms such as tell off, set off or turn down. Each verb form is paired with various nouns to make a logical phrase. It is also a great way to teach the article “the” in a meaningful phrase context.



16 Drink.



17 eat.



2 Swim.



3 Paint

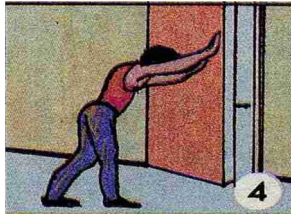


8 Ride.



9 Run.





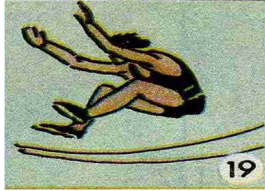
Shut



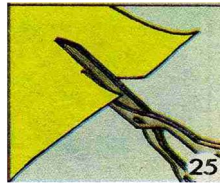
Open.



Wash.



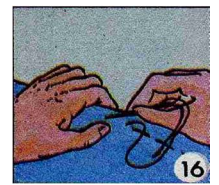
Jump.



Cut.



Drive.



sew.



Read.



Listen.



tell off.



set off.



look for.



break down



throw away.



look after.



turn down.



get off.



get on.



check out.



get out.



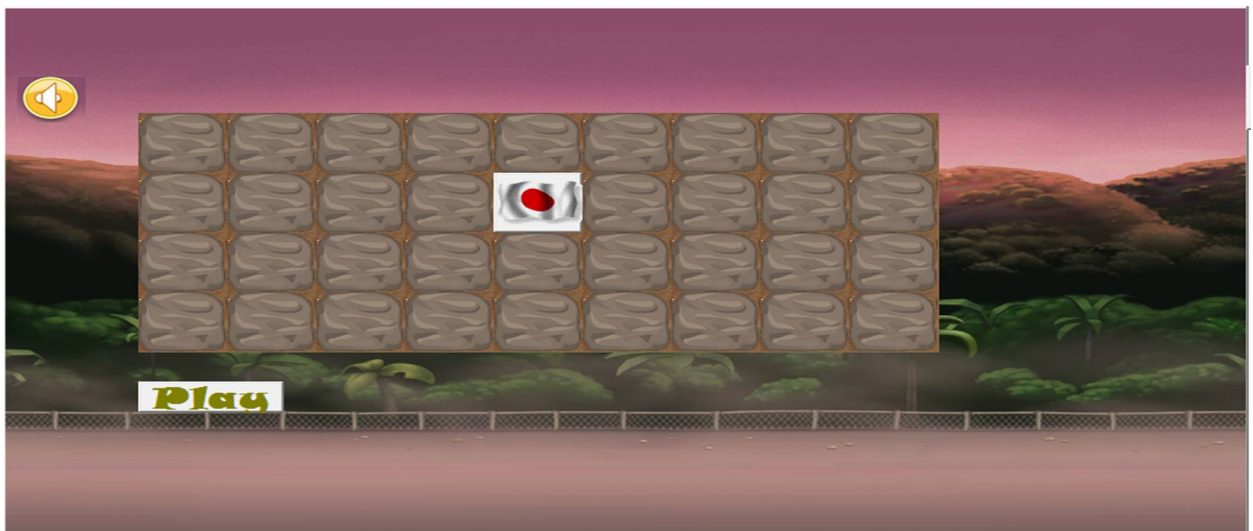
wake up.

Use the optional visual support to help your child remember what to say! This format is especially powerful for children with speech delays and autism spectrum disorders that need strong visual support with as little background clutter as possible, and for use in speech therapy sessions.

Language learning is purely a personal affair. One can never master a second language unless one tries to compare and contrast it with one's mother tongue. That is the secret of mastering a second language. If approach in the right way, it is extremely easy to learn English. This article is mostly intended for those who have been confused and perplexed by teachers and text book writers, and who are struggling hard to learn English.

### Playing games

Children learn naturally when they are having fun. Pictures are a great way to teach and revise vocabulary and there is a mini game in this app which you can play with pictures, such as simple objects, colors and flags.





Through picture presentation, people are able to reach outside their minds. Pictures that they can see always lead to the reality of their minds. However, the realities that have been presented by pictures depend on the types of the pictures.

Pictures of individual persons or thing can be used mainly at the elementary level, to introduce or test vocabulary items, for example: a man, and a car.

Pictures of situations in which person and object are “in action”

Between objects and people can be perfect teaching aid for introducing or reviewing grammar or structures.

Before we begin to learn a language as a second language, we must think about how we should to start learning our mother tongue. From the very moment an infant's eye and ear start functioning, it begins to record in its memory all the people, animals and things it sees and all the sounds it hears. Gradually the baby understands the relations between picture and sound as it hears the same sound repeatedly used to indicate the same person by elders. That is the starting point of our learning process. Picture comes first and sound follows. Sound is the shadow of the picture. No picture, no shadow. So, start learning English through pictures.

## **E-QVP: INFORMATION SYSTEM FOR RURAL MEDICAL STATIONS**

*Otajonov Q., Suleymanova G.N.*

*Summary: The article deals with the development of software complex for outpatient departments in rural places. It is also said that this software complex allows increasing working efficiency of registries at the expense of decrease in temporary and labour costs as well as improving their performance quality.*

*Key words: electronic medical records, electronic health record, RMS (rural medical station).*

Information technologies are developing with fast steps in the globalized World. IT is everywhere we are, and it serves us and makes our life easier. The introduction of IT in all spheres of our life can solve a lot of problems. For

example, due to the use of information system in the RMS (rural medical station) it is possible to create a database which will store all necessary information about patients which is very important in solving diagnostic, therapeutic, statistical, administrative and other tasks.

It's not a secret that a reception at polyclinics takes a lot of patient's and doctor's time. Apart from solving clinical issues, doctors have to register patients, examine and consult them, fill in their forms and medical [patient's] histories, make records in ambulatory cards, diagnose, prescribe medicine and make reports. And there is no doubt, that the most effective tools to simplify the work of medical staff and improve its efficiency are computer technologies. The authors of the article tried to solve the problem with the help of information system. Automation is able not only to facilitate the work, but it should release medical staff from the routine and give it a fundamentally new tool.

The first acquaintance with clinic visitors begins in the registry. It is the main department which is responsible for registering patients in the clinic. To assure an uninterrupted work process of all units of outpatient departments, first of all, it is very important to organize the work of the registries in order to control and help stream of people and shorten the time of their visit to the doctor.

The purpose of this developed software system for polyclinics is to enhance the work of the registries by reducing the time and labor costs, and improve the quality of the work.

Main tasks of registries of outpatient departments are:

- organization of preliminary and current record of patients to the doctor;
- provision of the control of people's visits to the doctors to distribute their load equally ;
- well- timed selection and delivery of medical documentation to doctors' consulting rooms, proper maintenance and storage of card files.

Uniting the whole information in a common data warehouse ensures data integrity and the ability of simultaneous access to the data. The creation of the database will lead to a sustainable reduction in data formalization and paper documents between departments.

**Cost efficiency of the system is as follows:**

- increasing the number of well- served patients;
- time reducing for medical records registration ;
- decreasing the number of possible medical errors .

The development of software complex for outpatient departments in rural places is of practical use and there some advantageous of using it:

I. As for RMS, it is a very good possibility for them to have virtual and statistical information about their patients.

II.As for doctors: the program allows bringing together all departments of polyclinics, including laboratories, procedure units, as well as the results of patients' analysis can be shown immediately on the electronic map.

But the most important thing is to enter the information. All input data about patients is formalized and selected from various lists, and if necessary, can be corrected. All paper documents like recipes, certificates, etc., are printed from the program and the doctors do not need to fill in blanks.

III.As for patients: all necessary medical information is in the database. There will be installed an information kiosk, which allows patients not only to get the results of their surveys, but also make appointments with any doctor at any time.

Summing up, we can say new technologies can inject a lot into serving patients as it is very important for our country to bring up a healthy generation and support elderly people.

**ROBOTICS IS ONE OF OUR STEPS TO FUTURE**

*O.Petrova, N.A. Atashikova*

***Summary.** In today's society process of the implementation the robots to our life is continuous. We need an educational project aimed at the development of robotics in Uzbekistan. It helps the youth learn simple mechanisms, learn to work with your hands, they develop basic design thinking, imagination, introduces them to many mechanisms.*

***Key words:** information technologies; Informatization; computerization; robotics; robot.*

## **INTRODUCTION**

Today information technologies are experiencing rapid development. What yesterday seemed impossible is now becoming a reality. Modern mobile phones have more computing power than the computers used for the Apollo 11 moon landing. Also there is a quantum computer as an example of yesterday's fantastic future.

Computers are being introduced everywhere in the different branches of production, science, economy and our lives. The role of informatics in the development of society is extremely high. It is the scientific foundation of the process of Informatization of society. It involves a progressive increase in computing power, the development of information networks, the creation of new information technologies that lead to significant changes in all spheres of society: in production, science, education, medicine, etc. On the basis of the Law of the Republic of Uzbekistan "On Informatization", the Decree of the President of the Republic of Uzbekistan Islam Karimov" on further development of computerization and introduction of information and communication technologies" is developing Informatization and computerization of society in Uzbekistan. This is not surprising. PC - helper man even in such distant at first glance the areas of technological progress as an art. The next stage is robotics.

Humanity is in dire need of robots that can help the operator to extinguish fires, to move independently in an a priori unknown, really rough terrain, carry out rescue operations during natural disasters, accidents in nuclear power plants, in the

fight against terrorism. In addition, as the development and improvement of robotic devices has arisen the need for mobile robots designed to meet the daily needs of people: the robots - the nurses, the robots - nannies, the robots- housemaids, robots - all sorts of adult or children's toys, etc. The naked eye visible is a strong tendency to the introduction of robots in various spheres of human activity - in life, in education, in research projects, healthcare, military, industry. And now in modern manufacturing and industry need specialists with expertise in this area.

Increased interest in robotics creates a high demand for specialists in this field. Therefore, at present the organization of courses, circles in robotics is the increasing importance and relevance.

### **1.1 The robotics club**

I think that we need to establish the robotics club based on TUIT where students can learn the basics of robotics. Moreover, the students of our University have creative potential. 17-18 March was the exhibition of software and technical developments, where was presented the robot of one TUIT`s masters.

The primary objectives are to help students:

1. Experience how they can use the same mathematical processes to solve different types of engineering problems.
2. Understand how engineers use mathematics to predict solutions to problems.
3. Use vectors to plan the movement of a robot.
4. Use graphical methods of vector analysis to calculate forces acting on structures.
5. Understand that engineering problems involve more than finding the best technical solution.

### **1.2 The robotics classes**

The best way to understand a topic is to explain it to another person. To consolidate students' knowledge and obtain teaching practices it is necessary to

organize clubs for students of colleges and lyceums that will teach students studying robotics.

Classes consist of three parts:

1. Practice. While designing, the youth learn simple mechanisms, learn to work with your hands, they develop basic design thinking, imagination, introduces them to many mechanisms.

2. Theory.

3. Programming. The robotics or any other modern technologies are impossible without computer science and programming.

### **1.3 The constructors for the robotics classes**

We need a constructor for training. The Lego is the most meets to requirements.

The Lego Mindstorms series of kits contain software and hardware to create customizable, programmable robots. They include an intelligent brick computer that controls the system, a set of modular sensors and motors, and Lego parts from the Technic line to create the mechanical systems.

It is more expensive than other ones, the most common, with the most developed infrastructure (a lot of courses, large-scale competitions), the simplest for master. The main weakness is the closeness and detachment from reality. Alternative the Lego Mindstorms can be Multiplo.

Multiplo is a robotics building system based on an open source philosophy that allows users to design and create high technology devices. It is currently being used as teaching material for schools and by enthusiasts of robotics.

Multiplo is organized in platforms. A platform is a set of a system's modules created to work around, and solve common robotics problems.

Multiplo is the sum of four components. Each one has the same importance, maintaining a common philosophy, aesthetic, and feel from the user's point of view.

1. Electronics: compatible with Arduino.

2. Software: besides of Arduino, it's compatible with the Open Source graphical IDE miniBloq.

3. Mechanics: based on ABS, acrylic and other materials easily customizable by being FabLab-compatible.

4. Documentation: released in Open Source formats like LibreOffice. The other variant of constructors is Fischertechnik.

Fischertechnik is a brand of construction toy. It is used in education for teaching about simple machines, as well as motorization and mechanisms. The company also offers computer interface technology, which can be used to teach the theory of automation and robotics.

#### **1.4 The robotics and youth**

The students use their knowledge gained in the subjects: mathematics, physics, design, sketching, labor, chemistry, biology, computer science, when they meeting with robotics.

The students begin to understand how to apply a mathematical formula for the calculation of a trajectory of movement, physical laws (Ohm's law) to calculate the battery charge and power motors, chemical formulas, processes for measurements and calculations.

Robotics will allow you to answer the questions of the students: "Why do I need it? This is where I come in handy? Why do I need to know Ohm's law? Where the geometry is useful in life?»

Robotics helps in practice to investigate some topics in other subjects, allowing you to free the potential of the students and to help them in the future, to help them to choice the future profession.

Project development, building robots, carrying out scientific research and experiments, the implementation of joint or group assignments will allow children to learn teamwork, goal setting, control of their decisions, statistics and reports, abstracts and presentations, performance before an audience, emotional control to the competition.

Robotics is a team work. Problems consolidate students. Solving problems together, the team will analyze the problem, develop a plan for its solution, defines each role to perform subtasks, seeking all types of resources from information up to material. In the process, students have the opportunity to show initiative, leadership and creativity.

### **CONCLUSION**

In today's society process of the implementation the robots to our life is continuous. Many processes are replaced by robots. This area of activity will become a priority worldwide in the next 20-30 years.

The President of the Republic noted: “The youth is not only our hope and future, but it is a decisive force of our today and tomorrow”.

To raise a generation of free, educated, creative thinking citizens is possible only with the modern educational environment.

One of the factors contributing to the development of pupils ' interest to specialties in technical sphere is the formation of their informed vocational choices in the organization of training of scientific and technical creativity.

So we need an educational project aimed at the development of robotics in Uzbekistan.

### **INTERNET RESOURCES:**

1. <http://en.wikipedia.org/wiki/Fischertechnik>
2. [http://en.wikipedia.org/wiki/Lego\\_Mindstorms](http://en.wikipedia.org/wiki/Lego_Mindstorms)
3. <http://en.wikipedia.org/wiki/Multiplo>
4. <http://habrahabr.ru/company/makeitlab/blog/221343/>
5. <http://informatikum.ru/robototehnika/14-organizaciya-kruzhkov-po-robototehnike-v-shkole.html>
6. [http://knowledge.allbest.ru/programming/2c0a65635a3bd68b4c43b89421216c36\\_0.html](http://knowledge.allbest.ru/programming/2c0a65635a3bd68b4c43b89421216c36_0.html)
7. <http://medialaw.asia/document/-1794>
8. <http://nhschool.ru/robot.php>



9. <http://nsportal.ru/shkola/dopolnitelnoe-obrazovanie/library/2014/11/19/robototekhnika-kak-sredstvo-obucheniya>
10. <http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=6239&context=etd>
11. <http://www.aab.uz/354>
12. <http://www.gazeta.uz/2015/03/18/tuit/>
13. <http://www.uzbekistan.org/news/archive/516/?print=1>

## COLLECTIVE PROGRAMME DEVELOPMENT

*A.Ibragimov, Sh. Abdunabiyev, M.Abdurakhmonova*

**Summary.** *All the humanity need a software, however it is not ease to create. A collective creates huge projects. Therefore, it is necessary to work in common. For that reason, the following work considers a team project management of organizations.*

**Key words:** *collective, programmer, customer, tester, auditor, instructor, consultant, chief programmer, getter.*

Most professional software projects require collaborative development. This does not mean that the time has passed single programming. Just serious modern software project, marketable, so complex that the time spent by a single developer, even if this super programmer is unacceptably high. Thus, there is a problem in team selection, organization, stability development support, a climate conducive to the successful completion of the project and cause a desire to work on.

Optimal structure of the team of programmers (hereinafter - the team) determined by the nature of the project, the conditions, under which it is performed and the peculiarities of the project participants. Nature of the project is complexity, scope, deadlines, and payment level, to determine the number, qualifications and professional participation.

The number of participants is usually determined at the planning stage. The project is divided into elementary functions, each of which is carried by one person and cannot be parallelized. It is determined by the complexity of each function and its relationship with others. Then the construction of a roadmap of the project, which shows the number of concurrently executable jobs. The maximum number corresponds to the number of developers. Since in the network takes into account all types of work, it becomes clear-known assertion that the addition of another party only hinders development. If the actual number of developers less of the non-critical functions not performed in parallel and in series, which can increase the operating time. Duration of the project is determined by the performance of the functions included in the critical path. Therefore, if the specified period is less need for workers that are more skilled.

All of the above refers to the collective work in general and not taking into account the specificity of software development. Study the nature and characteristics of the work of programmers indicate, even they unlike the other professions, a very low need for communication, significant demand growth and efficiency incentives. If we take into account their ongoing intense mental strain, high self-esteem, dislike for regulation of working time are clear difficulties in forming working group. Namely, the quality of the team, according to many researchers, the success of the project has a decisive influence.

Team working in general and programmer team in particular can be arranged in different ways, depending on the organization, in which the team works, the characteristics of the project and on the properties of the project participants. Consider the most popular types of teams, as presented in [3].

The traditional organization of the brigade is a hierarchical structure, in which the project leader subordinate to have older programmers, which in turn, supervise more junior. Each participant knows his area of work, its purpose, timing, form and delivery of the work, etc. Positive aspects of an organization - the transparency of the structure, individual responsibility, the ability of the stimulus in the form of

promotion. Nevertheless, it is not allowed for the specificity of software development, in which work is mutually dependent on, one-programmer errors often affect the results of others. The work consists of many stages, each of which requires special skills and great effort. In addition, the promotion washes highly skilled programmers from the development team in the category of administrators, worsening the overall level of the team. Nevertheless, this type of team is used, especially in large ICT companies.

In a sense, the antithesis of a hierarchical structure is a team without personalization. There is no concept of authority, team members participate equally in the distribution of work and in the execution. The basis of success of this team is a team spirit, the desire to help and lack of competition. All successes and failures are considered as the successes and failures of the team. Despite the seeming utopian such teams exist, moreover, they develop projects of high quality and their participants work willingly and with high performance. Disadvantages are the complexity of creating teams of this type, the lack of promotion prospects of participants, the difficulty of maintaining long-term stable operation. As a result, these teams often break, but participants generally do not go out of work on software projects.

The third type of team is Brooks proposed brigade chief programmer. The gist of it is that the programmer of very high class, which assists «copilot» is too high a programmer, does the main work on the project. Other participants (a total of ten in the embodiment Brooks) plays a supporting role, aimed at obtaining maximum performance is a major player. Chief Programmer takes major decisions and is solely responsible for the project. The role of the second programmer is critical reflection of the main solutions, opening their shortcomings and in the case where the principal is unable to continue work on the project is to be replaced. The main advantage of this model is the most effective use of the potential of high-end programmers. Its disadvantages are associated with a high risk of project failure, because it is tied to a single person. In addition, it is difficult to find a good

specialist. Average on this place if not entirely fail the project, so be sure to spoil it. Presented types of organizations targeted teams to work on projects within large stable working companies. Under these conditions, many activities are regulated and each employee plays a certain role in advance. In the first case is a relation of subordination, the second is equal participation, which is the lack of an explicit role in the third is the specific responsibilities in relation to the main programmer. Actual role in the team of programmers is formed somewhat differently; this is especially evident in the brigades without personalization. This type of team receives the most widespread in the development of small-scale projects using the so-called "Light" or "lightweight" approach to development, as opposed to the classic - "heavy", "heavy-weight". By "easy" approach to understand the methodology, in which the stages of analysis, planning, design, documentation, or strongly reduced or non-existent. Of course, the mere rejection of a step is likely to lead to the collapse of the project, so "light" methodology involves their compensation. Consider the organization team of programmers, adopted methodology, called the author "Extreme Programming", abbreviated as XP. [1] This kind of modification of the brigade of the second type. It clearly declares the presence of team members in certain roles. Selection of roles is based on experience and not remaining unchanged. In this role, it is selected based on the composition of the participants and not imposed on them. Each participant plays exactly one role. Next, we consider the role as the author sees them.

Programmer is the basis of the project. One of the important features of XP - the collective code ownership, in that, in addition to normal operation, the programmer must ensure that the understandability of code as a team. In addition, the XP practice of programming in pairs the programmer must be ready to do so.

Customer is also a member of the team of XP. He poses the problem, constantly refines, and controls. He must clear know the priorities of work and make decisions in accordance with them.

Tester is a supporting role, as in XP testing are required to keep the programmer and the customer. The tester monitors the regular test launches and announce their results.

Auditor is the conscience of the team. He should follow the general picture of development and monitor progress towards the goal of attracting, if it's possible, previous experience.

Instructor is a specialist, who checks the correctness of the execution of the project and interferes with it as needed. At critical moments, he must take control and lead the execution of the project to normal.

Consultant is one, who brings the team the knowledge needed to solve problems.

The big boss is the one who manages the project and makes key decisions. He eventually is responsible for all. Somewhat, differently valued role in the team, when the "hopeless project" as he called this type of project Yourdon [2]. He believes that the project is hopeless, if the value of some of its basic parameters at variance with the normal is more than double. These parameters relate period of work, the number of developers, budget and other resources, requirements for functionality and performance.

In addition, a hopeless project can be estimated by the risk of failure. In a hopeless project is over 50%. It usually comes on a small project team often built on the second type. Initially, participants are identified.

In addition to the developers, it can be customers, users, stakeholders, advocates of the project. Not all of them participants in the project but affect the attitude of the participants in the project, which is reflected in the level of dedication when working on them. It is therefore advisable to establish, who is personally what category to carry out appropriate tactics.

Desperate attempt to save the project from failure requires an extremely great effort, therefore at work it is an extremely important human factor. To support the team depends on the success or failure of the project. You should never save effort

when it comes to keep the team. An important component of the project team is openness and honesty in relationships. In the selection of the team focuses on interoperability. From the perspective of building a team, working in such an environment, it is important to consider the concept of roles. According to it, in addition to technical, each participant plays a psychological role. Let us examine them in more detail.

Chairman – chooses the way, in which the team is moving toward the target; is able to detect the strengths and weaknesses of the team, provides the best use of the potential participants.

Decorator – gives the final form action teams, defines a group discussion and common solutions.

Generator of ideas – puts forward new ideas, focusing on the main issues, try to introduce radical technology.

Critic – analyzes the problems from a pragmatic point of view, evaluate ideas, gives balanced decisions. Counterweight to the generator of ideas.

Working bee – makes plans and concepts into practical working procedures and works without attracting attention. Any hopeless project needs at least a couple of these participants.

Reliance team – supports fortitude, assists participants contributes to the rise of team spirit. In bad projects, this role is especially important.

Earners – establishes external contacts that may be useful for the team; can effectively get all the necessary resources for the project.

The final – supporting team persistence in achieving goals. Plays a dominant role in the final stages of testing and commissioning.

Note that, unlike the XP methodology, each participant hopeless project can play several roles. Approximately visible role in the normal project, but some of them may not be so evident.

There is another type of the team, which cannot fail to the mention. This type can be called as a "student" (UK). The author had to participate in its creation and

work together. For the UK it is characterized by the availability of energy, technical skills, ingenuity in solving small problems etude and sociability.

On the other hand, it is the rejection of a long monotonous labor, little experience, ignorance of many useful theoretical and practical developments, low responsibility. There are problems with motivation: the material is difficult to ensure that moral acts weakly. Often, those who work with students, they have a temptation to use it in the UK because of its cheapness and availability.

However, many of the known to the author are ended in failure, which is due to, at least, the following reasons:

- need for long-term support of a software system;
- high-quality requirements of the system;
- duration of the release version, which leads to the imposition of work on the project for a period of training load.

This means, that students had better participate in the development of sophisticated, but small craft, requiring minimal modifications, as well as in the development of large projects, in which they receive their portion of the work and do not find it difficult to design and support system. The process of building a team goes through four stages:

- formation – participants define goals and direction of the work;
- tap - establishes rules and procedures for decision-making;
- rationing - produced procedures, standards and criteria;

If the process of building a team is successful, it can be seen from the external features. For example, there is a sense of common interests and pride in the team, etc. If a solid team could not be established, there is a "suicide team" (De Marco and Lister). The great importance is encouraging members of the team. This pay attention to almost everyone who has ever managed a project. Usually there is a desire to encourage their development, but opportunities for this are not always enough. Here you need to be creative, but do not ignore any event worthy of promotion.

This can be the provision of a free mode, help in purchasing equipment, recreation, bonuses or other financial incentives, etc. The situation is worse punishment. Punishment is usually upset the team, but sometimes it becomes necessary. It is better to do simple methods and never take it easy.

A good team always attracts participants, even if they are already in it and do not act. Participants maintain contacts, exchange information and help each other. In addition, the team is always ready to come for the next project.

#### **REFERENCES:**

1. Toby S. Programming Collective Intelligence – London, August 26, 2007.
2. Jonathan J. Collective Promotion – London, September 13, 2008.
3. [www.microsoft.com](http://www.microsoft.com)
4. [www.oracle.com](http://www.oracle.com)

### **COMPARING NEURAL NETWORK MODELS FOR TIME SERIES PREDICTION**

**O.K. Khujaev, Y.O. Sultanov**

***Summary:** This article describes the use of two models of neural networks for solving the problem of time series prediction. With initial data processing method was used a sliding window. The article focuses on comparing prediction capabilities of the models Elman and feedforward neural networks. The analysis of the results of different models. The results were obtained using the library Neural network toolbox IDE MatLab.*

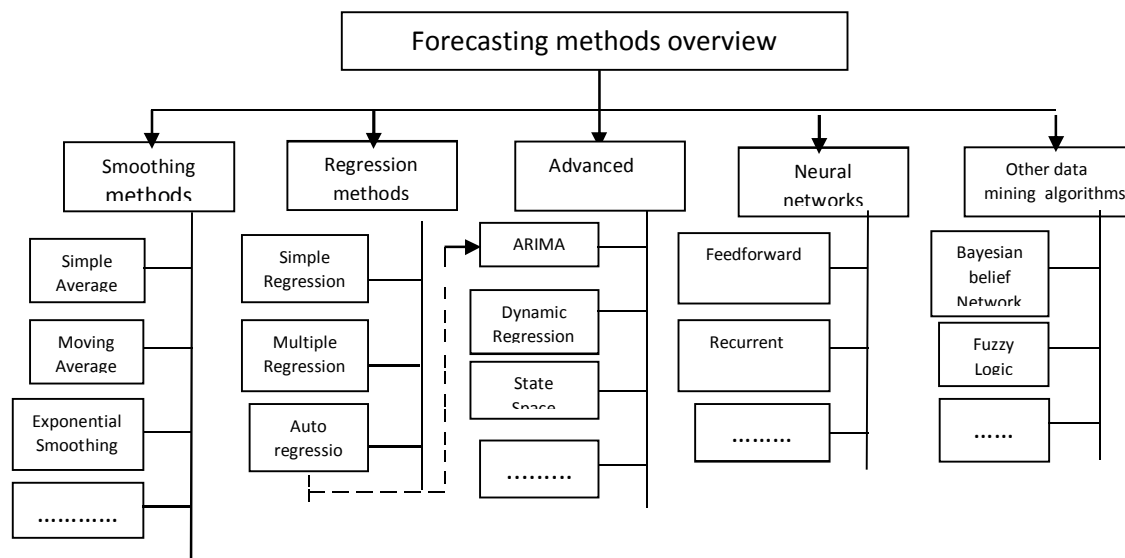
***Key words:** Elman recurrent neural networks, feedforward neural networks, sliding window, backpropagation, NIO, NARX*

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#### **1. Introduction**

There are many method of forecasting. You can see overview of forecasting methods in the schema.





*Fig.1. Overview of forecasting methods*

In recent years, artificial intelligence methods have been used widely in forecasting, such as expert system, artificial neural network, and so on. There are many models of neural networks. In forecasting most commonly used feedforward neural network and Elman recurrent neural networks, which employ a sliding window over the input sequence. This paper is focused choosing optimal architecture of Elman and feedforward neural networks for time series prediction

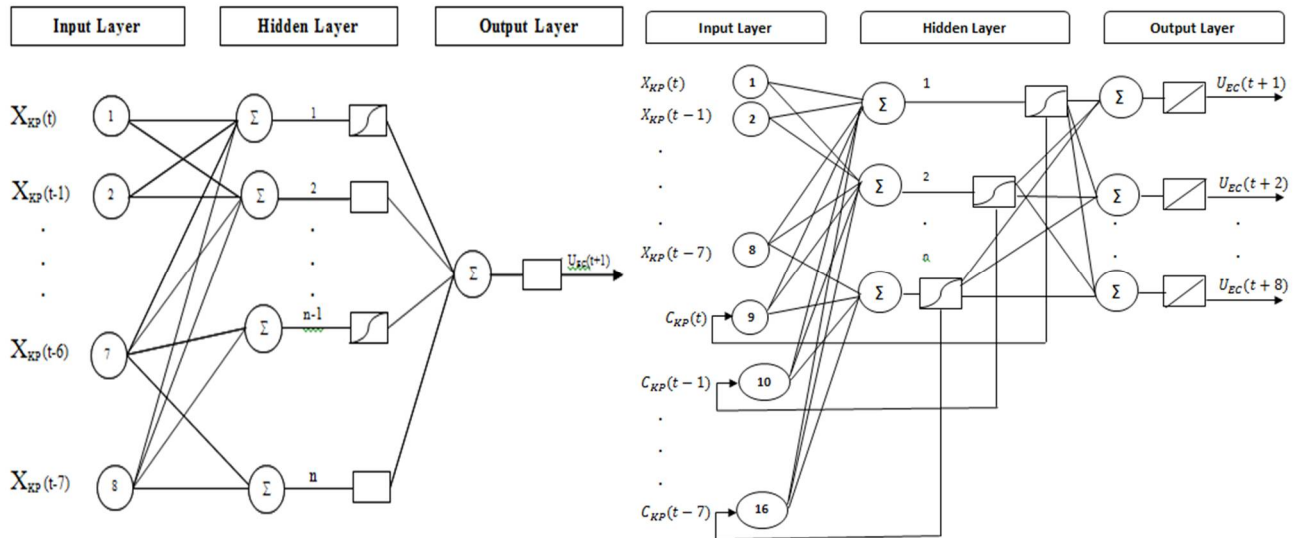
## 2. Time series prediction and sliding window

A time series is a sequence of vectors,  $x(t)$ ,  $t=0,1,\dots$ , where  $t$  represents elapsed time. For simplicity we will consider here only sequences of scalars, although the techniques considered generalise readily to vector series. Theoretically,  $x$  may be value which varies continuously with  $t$ , such as temperature, but in practice, for any given physical system,  $x$  will be sampled to give a series of discrete data points, equally spaced in time. For example time series by hour, by day, by week, by month. Method of sliding window helps us for creating training dataset, For example:  $x(1), x(2), x(3) \dots x(n)$  is a time series vector. After using sliding window which size equal to  $d$ , we can create this input output mapping dataset.

inputs	Targets
$x(1), x(2), x(3), \dots x(d)$	$x(d+1)$
$x(2), x(3), x(4) \dots x(d+1)$	$x(d+2)$
...	...
$x(n-d-1), x(n-d), x(n-d+1) \dots x(n-1)$	$x(n)$

### 3. Feedforward and Elman recurrent neural network model

The feedforward neural network contain input layer, hidden layers, output layer. In feedforward networks all neurons and input units connected with forward neurons and no connection with neurons which situated same layer and previous layer. Elman network is recurrent network and it is proposed by Elman in 1990. It is similar feedforward but in hidden layers have a feedback. You can see schema of feedforward and Elman neural network in Fig.2. which we use forecasting.



**Fig. 2. Feedforward and Elman neural network architecture**

Theoretically there will be many hidden layers but in practice commonly used one hidden layer. Number units of input layer will be equal with size of window. We can not say what how much neurons we put in hidden layer, because much hidden neurons much computation. Therefore optimal number of hidden neurons will be different for every dataset. As a activation function usually used following easy differentiable nonlinear logistic function.

$$f(x) = \frac{1}{1 + e^{-x}} \quad (1)$$

If we are forecasting a variable that may take negative values, it is better to use the hyperbolic tangent as an activation function:

$$f(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}} \quad (2)$$

### 4. Neural network training and testing

We use the backpropagation method in training. Backpropagation is one of the simplest and most general methods for supervised training of multilayer neural networks. The basic approach in learning is to start with an untrained network, present a training pattern to the input layer, pass the signals through the net and determine the output at the output layer. Here these outputs are compared to the target values; any difference corresponds to an error. This error or criterion function is some scalar function of the weights and is minimized when the network outputs match the desired outputs.

We consider the training error on a pattern to be the sum over input units of the squared difference between the desired output  $t_k$  given by a teacher and the actual output  $z_k$ , much as we had in the least mean square (LMS) algorithm for two-layer nets.

$$J(w) = \frac{1}{2} \sum_{k=1}^c (t_k - z_k)^2 = \frac{1}{2} \|t - z\|^2 \quad (3)$$

There are  $t$  and  $z$  the target and the network output vectors of length  $c$  and  $w$  represents all the weights in the network.

The backpropagation learning rule is based on gradient descent. The weights are initialized with random values, and then they are changed in a direction that will reduce the error:

$$\Delta w = -\eta \frac{\partial J}{\partial w}, \quad (4)$$

where  $\eta$  the learning rate, and merely indicates the relative size of the change in weights. The power of Eqs. 4 is in their simplicity: They merely demand that we take a step in weight space that lowers the criterion function. It is clear from Eq. 3 that the criterion function can be negative; furthermore, the learning rate guarantees that learning will stop, except in pathological cases. This iterative algorithm requires taking a weight vector at iteration  $m$  and updating it as

$$w(m+1) = w(m) + \Delta w(m). \quad (6)$$

Where  $m$  indexes the particular pattern presentation.

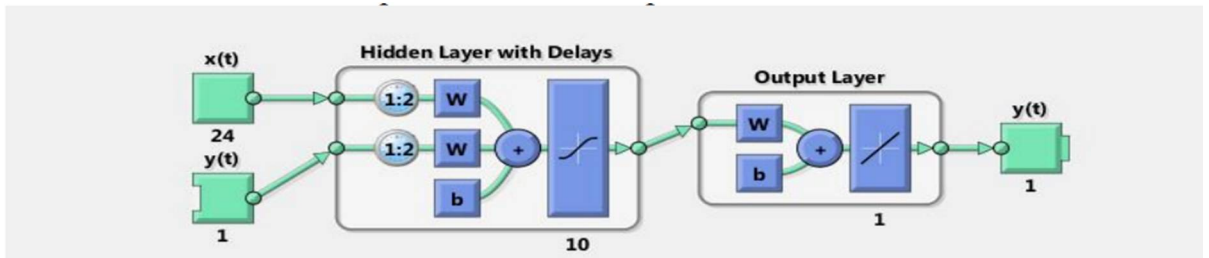
The completion of the training algorithm optimized the synaptic weighted connections to establish reliable relationships between the inputs and outputs. During the testing and validation step, these free parameters are held constant while new inputs are fed to the network to produce a series of outputs. These outputs are compared to a set of test data matching the actual produced outputs. If

the actual output deviates from the target test set output above a threshold error value, the training need to be adjusted and the neural network retrained.

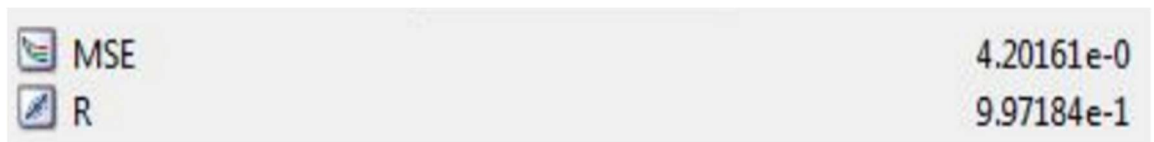
### 5. Experiments

For experiment, we have time series dataset, which hourly information about height of water of Lagun river of Venetia. This dataset contains information about height of water in 1990-1995 years by hour. We use 85% of data for teaching of network and 15% of data for testing. In teaching process we use Levenberg-Marquart algorithm of Backpropagation method. The results were obtained using the library Neural network toolbox IDE MatLab. In MatLab has special networks for time series prediction. They are: NARX(Nonlinear autoregressive with external input) network is on based Elman neural network, NIO (Nonlinear Input-Output) network is on based Feedforward neural network .

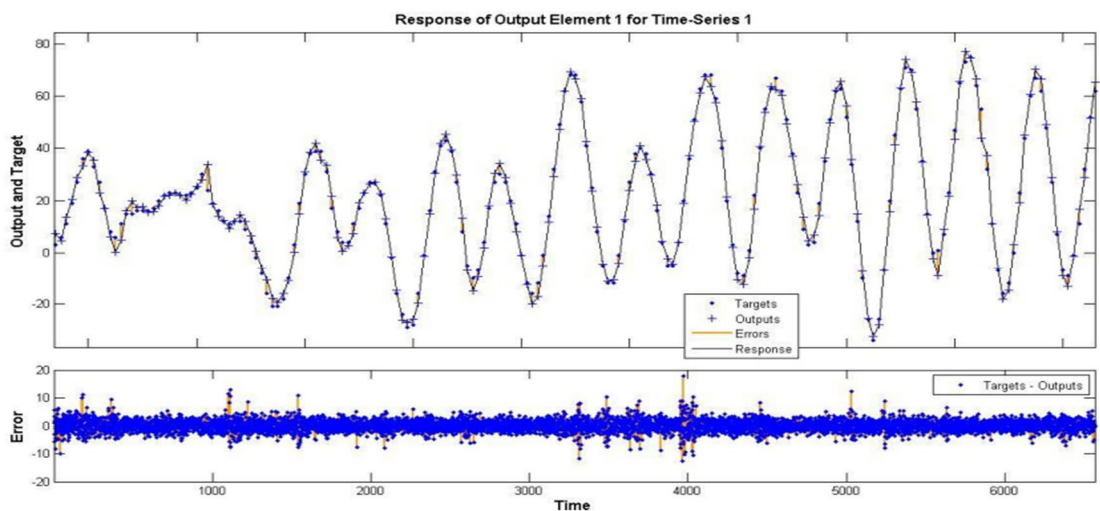
#### 5.1 Prediction results with NARX network.



*Fig. 3. Structure of NARX network*

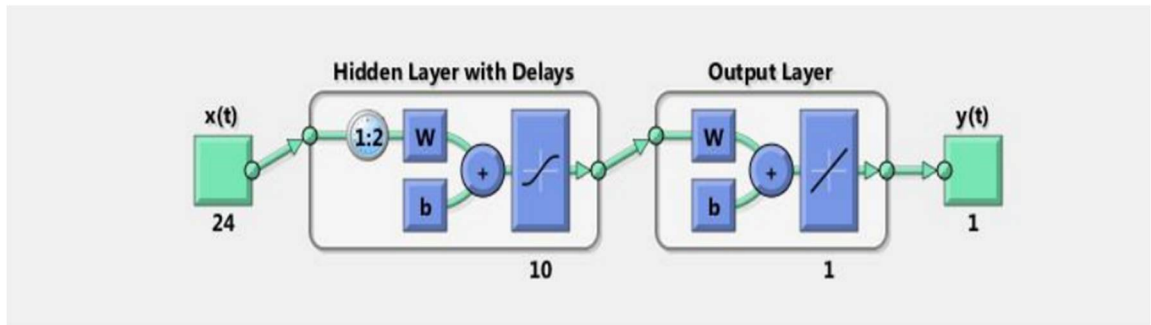


*Fig. 4. Mean square error*

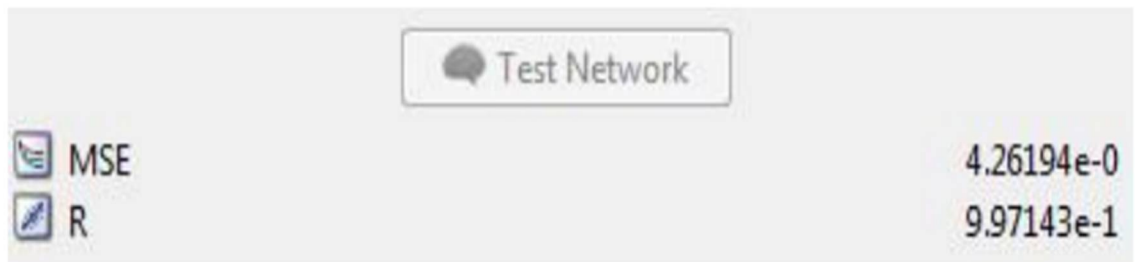


*Fig. 5. Result testing*

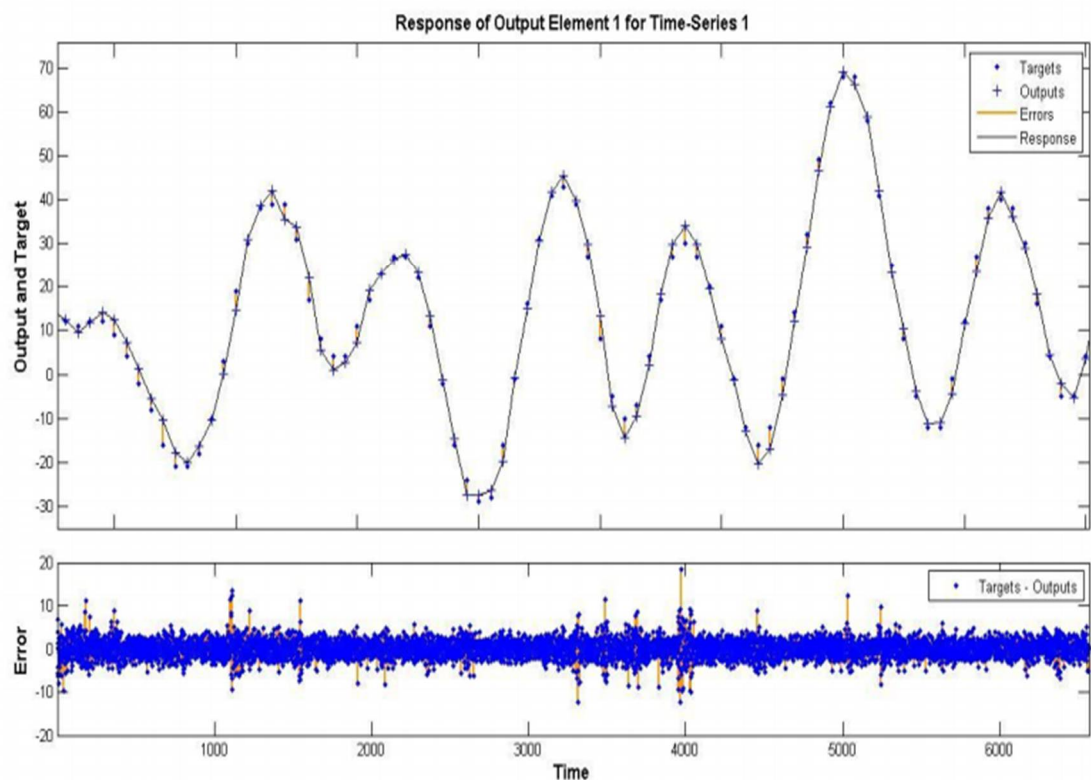
## 5.2 Prediction results with NIO network.



*Fig. 6. Structure of NIO network*



*Fig. 7. Mean square error*



*Fig. 8. Result testing*

## 6. Conclusion

Our study found that feedforward and Elman neural networks are good capable for time series prediction. For training we used Levenberg-Marquart algorithm backpropagation method for neural networks. Our experiments show us, NARX neural network model is more effective than NIO neural network model and learning process also don't takes more time in NARX neural network model than NIO neural network model. In our experiment datasets we use only last 15% data in testing. This approach give us help to choose the best architecture of the network for prediction tasks.

## References:

1. Cristopher M. Bishop. Pattern Recognition and Machine Learning. Springer Science +Business Media, LLC 2006 y.
2. Richard O. Duda, Peter E. Hart, David G. Stock Pattern Classification. John Wiley & Sons 2001 y.
3. Mehdi Khashei, Mehdi Bijari. An artificial neural network (p,d,q) model for timeseries forecasting. Expert Systems and Applications 37(2010 ) 479-499p.
4. Jeffery D. Martin, Yu T. Morton, Qihou Zhou. Neural network development for the forecasting of upper atmosphere parameter distributions. Advances in Space Research 36 (2005) 2480-2485p. Expert Systems with Applications 39(2012) 4344-4357
5. Mehdi Khashei, Mehdi Bijari. A new class of hybrid models for time series forecasting. Expert Systems with Applications 39(2012) 4344-4357
6. Zaiyong Tang, Paul A. Fishwick. Feed-forward Neural Nets as Models for Time Series Forecasting. Department of Computer & Information Sciences, University of Florida.
7. Hanh H. Nguyen, Christine W. Chan. Multiple neural networks for a long term time series forecast. Neural Comput and Applic (2004) 13: 90-98
8. Sven F. Crone, Stefan Lessmann and Swantje Pietsch. Forecasting with Computational Intelligence- an Evaluation of Support Vector Regrassion and Artificial Neural Networks for Time Series Prediction. International Joint Conference on Neural Networks, 2006 y.
9. Liang Yongchun. Application of Elman Neural Network in Short-Term Load Forecasting. International Conference on Artificial Intelligence and Computational Intelligence 2010 y.
10. Царегородцев В. Г. Взгляд на архитектуру на требования к нейроимитатору для решения современных промышленных задач. Всероссийская семинара «Нейроинформатика и ее приложения», Красноярск 2003.
11. Царегородцев В. Г. Оптимизация предобработки данных для обучаемой нейросети: критерии оптимальности предобработки. Международной конференции по нейрокибернетике, Ростов-на-Дону, 2005

# STUDYING AND IMPLEMENTATION OF FOREIGN EXPERIENCE TO IMPROVE E-GOVERNMENT SYSTEM OF THE REPUBLIC OF UZBEKISTAN

*F.I. Ruzmatova, D. Kh. Kadirbekova*

*Summary.* The article is devoted to study the e-government system of one of the developed countries in the world – Australia and its adaptation to the e-government system of the Republic of Uzbekistan. The special features of Australian e-government system, its rate in the world's e-government rating scale are analyzed. The achievements of Australian e-government system and possibilities of their adaptation in order to improve main features of Uzbek e-government system are defined.

*Keywords:* e-government, informatization, Tigers Project, AGLS, fed link, CETS system, GAPSAN service.

Because of the reforms in the field of informatization and on the basis of the tasks determined for all government bodies of the Republic, modern information and communication technologies are developing rapidly and being implemented almost in every sphere of our lives. Analysis of the international experience has shown that, economic growth of the developed countries is associated with the introduction of information technologies to the public administration system. The introduction of information and communication technologies to public administration system in the community provides more transparency.

Nowadays, in developed countries, the "single window gates" known as the third stage of the relationship, is undergoing process of transition. If to talk about Australia, which is one of the leading countries in the field of development of a new stage of e-government, taking second place for the development of e-government in the world.

**Figure1. Australian performance in the UK e-Government development index for 2001-2014.<sup>6</sup>**

Considering that our country is on the 100<sup>th</sup> place, there exists great experience to study from Australia in the field of e-government system.



Australia is one of the most developed countries. Its Governmental National Portal <http://www.australia.gov.au> is, as a universal information space, provided citizens with information and services through the 900 government Web sites, state and regional resources. Information sections can be rapidly and easily reached through clickable hypertext link "People" and "Topics". All data is stored in special filtered categories. (This can be seen in the Figure 2.)

<sup>6</sup> Egovau.blogspot.com/2014 government-agencies.





**Figure 2. Clickable hyper text link "Topics".**

The Ministry of Information Economics (National Office for the Information Economy) coordinates the activities of the ministries and agencies to introduce information and communications technologies to their structure and activities. This strategy plays an important role in the establishment of the Commonwealth in the state. Within the framework of the government, information network is located in the Government Information Access Network. For the various inhabitants of the regions, "e-government" service is provided by Tigers Project "The Trials of Innovative Government through the Regional Services", electronic system to conduct tenders through the CETS system and electronic service of publishing small government orders carried out by GAPSAN service.

In Australia there is also placed a formal outcome posts on the Internet site named Hansard, where citizens have an opportunity to get further information about activities of legislative system as well as member of parliaments, attained the highest degree of getting data about all their actions.

The government's electron domain is located on **.au** address <http://www.fedlink.gov.au>, which is considered the source of data transit channel that use protected virtual Internet.

Concerning with on-line version of documents they can be gained on the <http://www.ag.gov.au/www/protectivesecurityHome.nsf> e-link.

Furthermore, the information about protected communication structure can be found on Australian Communications-Electronic Security Instructions number 33 on the [http://www.dsd.gov.au/infosec/acsi33/acsi\\_index.htm](http://www.dsd.gov.au/infosec/acsi33/acsi_index.htm) internet e-link.

**Electronic identification.** For special government employee information about object's located on electron site link the:

[http://www.noie.gov.au/publications/NOIE/online\\_authentication/index.htm](http://www.noie.gov.au/publications/NOIE/online_authentication/index.htm)

and materials for software developers on:

<http://www.noie.gov.au/projects/confidence/Securing/Gatekeeper.htm>.

**Privacy.** Government enterprises are limited by special confidential normative documents Privacy in Australia October 2001. In addition, in Australia on the following electronic site the information about legislation of country is shown in the e-link <http://www.privacy.gov.au/publications/pia1.html>.

**Procurement.** All activities on electron procurements are followed to the act, which is established by law "Government Framework for National Cooperation on Electronic Procurement June 2002". It is given on the e-site <http://www.apcc.gov.au/apcc/publications/publicationDetail.asp?Publication>.

Australian "e-government" searching system carried out by the Australian Government locator service (AGLS). While AGLS has being used to search the information about government, the number has been reduced and at the same time realistic results have been achieved. As the main reason that Australia has been found as a high priority is shown in producing and development inter-mobile software in the government portal, as well as with the help of these software devices some is able to be connected to different services with well organized search system. Furthermore, the Australian government management system of ICT is highly implemented in daily lives of population. Some of the services provided by the Australian e-government system can also be used in our country's e-government system, such as:

- Social welfare services, grants, and loans;
- Permanent or temporary residence registration, notification of address change;
- Health care services;

- University entrance tests; the driver's rights to submit to examinations; distance learning methods with state training and other educational institutions;
- job search and professional development level of e-testing services on the labor market;
- On-line registration of loans, privileges and licenses.

### **Conclusion**

For development of the modern ICT, system in the Republic of Uzbekistan there established a plan for the period of a year time (2005) to improve an economy system in the country as well as its micro economic system. Therefore, since then some can see stable progress in all fields.

Moreover, to increase the informatization system it is very important to implement modern information technologies like computers, electronic equipments, telecommunication facilities in all spheres of the life, which gives a good chance to meet individuals' needs. Apart from this, it is necessary to have a chance of using the latest technologies to be connected with modern world in a daily life.

It is necessary to say that while e-government system is improving in developed countries, Uzbekistan is also participating on these actions with achieving good results. In our country, we have a great opportunity to establish e-government system by learning and investigating other development counties' e-government systems, which are already on top of rating scale. Only by this way, for sure, we are able to achieve goals with the help of adopting their work experience to avoiding mistakes. Of course, it depends on young generation like us, to create and improve e-government system; we must regard it as our responsibility. After this, not only our country, but also other countries can modernize their E-government system by learning and practicing our experience.

### **INTERNET RESOURCES:**

1. <http://www.gov.uz>

2. <http://www.unpan.org>. United Nations e-Government Survey 2014
3. <http://www.au.gov>. E-government in Australia
4. [www.Australia.gov.au](http://www.Australia.gov.au)
5. [www.compress.ru](http://www.compress.ru)
6. [www.gisa.ru](http://www.gisa.ru)

## **DEVELOPMENT OF SOFTWARE ESTIMATES THE VALUE OF THE INFORMATION SYSTEM**

*Salakhova K., Zokhidova G.E.*

*Summary.* Creating a software producing valuation software development - will assess the cost of creating the software quickly and easily. This will save the budget and increase productivity.

*Key words:* development, information system, COCOMO, FPA IFPUG, thousands lines of code, COCOMO II

Today in Uzbekistan, number of IT projects complete unsuccessfully is big percentage of the total number of projects. These projects were not completed in time, over budget or have been handed over to the lack of functionality to the system could be used. The sources of this problem are:

- Poor management of the project
- «Floating 'requirements
- Incorrect assessment of the project

In this article I would like to tell you about assessing the duration and cost of the project. Estimating the cost of the project is important both for the customer and for the executor of the project. It will allow to plan and manage the project.

The main causes of incorrect assessment of the project are:

- Lack of experience or methodology for project assessment
- Unforeseen problems with the means and components

- Lack of understanding of the key technical challenges of the project

Solutions to these problems is to create an automated system of valuation of the project.

To begin to talk about the existing methods for evaluating software products. Historically, the development of methodologies for assessing the complexity and cost of developing information systems in two ways: measurement of lines of code (SLOC) and functional size measurement (FPA). The following figure shows a diagram of the evolution of methods of valuation of information systems development.



Drawing - development of methodologies for assessing the cost of development

Techniques of the world's most successful and widespread are now COCOMO II and FPA IFPUG. Both techniques are based on the principle of evaluating the functional size:

- FPA IFPUG functional size estimates in function points;
- COCOMO II as described by using the functional size of the correction coefficients estimated time code and on the basis of lines of code and complexity is estimated duration of the development of information systems.

A closer look at the data model for determining the scope of work in the development of information systems. Constructive cost model (Constructive Cost Model) – COCOMO is probably one of the most famous models of this kind, developed in the late 70s, Barry Boehm (Barry Boehm). Based on the analysis of

several projects, it establishes a correspondence between the size of conventional thousands of lines of code and the "class" of the project, on the one hand, and complexity of the system design, on the other hand.

Basic COCOMO Model takes into account only the class project - a natural, semi-integrated "embedded systems". Natural projects - relatively small and developing teams, familiar with the application domain. Semi integrated projects - Average size and complexity, developed by a group of developers with different experience. Projects "embedded systems" are made at considerable hardware, software and organizational constraints.

Intermediate Model introduces 15 correction factors belonging to one of four categories: product attributes, such as its complexity and requirements for reliability; system attributes, such as limitations on memory and execution time; attributes commands, such as experienced in the application area; and attributes of the project, such as the development tools used. Advanced Model introduces an additional partition on life-cycle stages.

Over time, the COCOMO model was outdated in large part. Therefore, it is based on a model was developed COCOMO II. It improves the original model in the following main areas:

- Use the input data available in the early stages of the life cycle of a system to assess its complexity (in particular, the use of function points);
- approaches based on the re-use, including the integration of commercial products, reengineering, generating applications;
- Object-oriented approach, supported by a distributed middleware;
- Impact of Process Maturity.
- New - cyclic and generalized - model development processes;

A major shortcoming of this model is its stiffness on thousands of contingent lines of code, as the metric size software system.

An alternative to this metric sized software development was Alan Albrecht (Alan Albrecht) method function points to develop a mechanism for predicting

effort, coupled with the development of software systems. In the future, Albrecht perfected his method, which led to the formation of the International Association of Users function points (International Function Point User Group - IFPUG) and published several revisions of the method.

Currently, in the Republic of Uzbekistan, in most cases the valuation of the development of information systems and budgeting is formed on the basis of expert judgment, by analogy or "random", which often does not reflect the real value of the ordered information systems and leads to costs, both monetary and time. All this leads to the sad statistics of failed projects.

Help in this situation may develop an automatic system of evaluation software.

This system should be an evaluation of software methods, combined in one program that is able to user-selected data to evaluate the software. The system must make their own decision on what method to calculate.

Ease of use and speed of calculation automated system makes it easy to determine the cost of the project

The system itself has to perform these functions.

#### 1. Evaluation of the complexity of the base

In assessing the complexity of the base based on the technology of information systems, with the complexity of regulations is estimated in the complexity of the implementation of an information system is characterized by the previously defined functional size.

The base is the complexity of the functional assessment system without the influence of external factors.

#### 2. Determination of the coefficients

According to identify the characteristics of the system and external factors to the system are determined by the values of the coefficients. The coefficients are based on the applicable standards specified in the calculation methods for estimating software product Applied on in this development.

### 3. Calculation of the complexity of taking into account factors

On the basis of the coefficients are automatically calculated and the complexity of the basic calculation complexity of software development.

### 4. Evaluation of the design-time information system

Based on the complexity of the design-time assessment is the information system. The time estimate is based on the development of methods for estimating development time at the command of the selected methodology for assessing the initial selection coefficients. Creating a software producing valuation software development - will assess the cost of creating the software quickly and easily. This will save the budget and increase productivity.

## **ROLE OF INFORMATION TECHNOLOGY IN TOURISM CONTENTS**

*Sh. Togayev, G.N. Suleymanova*

**Summary:** *The role information technology in tourism. The stages development tourism with information technology.*

**Key:** *tourism, information technology, architecture, culture.*

The globalization and changes in modern society represent both opportunity and threat for national cultures, heritage and identity. Cities and regions are losing their traditional heritage and keeping up with global trends and fashions rather than reviving local traditions, history and values. By doing so they become less attractive places to live, work, visit, and invest in. Therefore, economic development driven by international tourism, especially in smaller communities, may be short lived and have many negative effects. The tourism industry, facing its everlasting dilemma of growth versus sustainability, can be regarded as contributing to critical trends in world development rather than an instrument of world peace and tolerance (as praised by international



organizations like UNESCO). It is clear, that the traditional approach pursued by the tourism business is in need of fundamental revision. The increased cultural diversity of today's world, together with the growing access to the heritage through the Internet, is likely to result in strong pressure for its fundamental restructuring. A technological link should be established between heritage and a sustainable tourism economy based on the cultural richness of places. Heritage should be considered as a bridge between the past and the future of a community, a reflection of founding values, history, and identity. The cultural capital embodied in buildings, artefacts, sights, songs, and rites permits the transmission of the culture of a people through time and space. The heritage industry, small in size, information-intensive and creative provides a means to interact and to learn about host communities. ICTs and Internet can favor the reconciliation of heritage and tourism, supporting a process of the empowerment of local stakeholders and of creative encounter between host and guest communities. This progress should support creativity, collaboration and appreciation of national and world heritage, taking into consideration the cultural and social capital that is necessary for sustainable community economic development.

Information technologies (ITs) prevail all functions of strategic and operational management. As information is the lifeblood of tourism, ITs provide both opportunities and challenges for the industry. Despite the uncertainty experienced in the developments of ITs in tourism, the "only constant will be change". Increasingly, organizations and destinations, which need to compete, will be forced to compute. Unless the current tourism industry improves its competitiveness, by utilizing the emerging ITs and innovative management methods, there is a danger for exogenous players to enter the marketplace, jeopardizing the position of the existing ones. Only creative and innovative suppliers will be able to survive the competition in the new millennium. This paper

provides a framework for the utilization of technology in tourism by adopting a strategic perspective. A continuous business process re-engineering is proposed in order to ensure that a wide range of prerequisites such as vision, rational organization, commitment and training are in place, so they can enable destinations and principals to capitalize on the unprecedented opportunities emerging through ITs.

Developments in ITs revolutionize both economies and enterprises. ITs are defined as the “collective term given to the most recent developments in the mode (electronic) and the mechanisms computers and communication technologies) used for the acquisition, processing analysis, storage, retrieval, dissemination and application of information. At the macroeconomic level, ITs become instrumental in the development and prosperity of regions, as they determine their competitiveness in the global marketplace. At the microeconomic level, ITs prevail all functions of strategic and operational management and impel the competitiveness of enterprises. The enhancements in ITs' processing power in the last decade revolutionize their capabilities as they constantly increase computing speed; decrease equipment size; reduce hardware and software costs; and improve the reliability, compatibility and inter-connectivity of numerous terminals and applications. A great degree of innovation is incorporated in hardware, software and network developments, whilst intellect becomes a critical asset in ITs' management. Paradoxically, the more powerful and complicated it's, the more user-friendly and inexpensive they are, enabling more people and organizations to take advantage. Hence, Hopper proposes, "in the not-so-distant future, computers will be as familiar part of the business environment as telephones are today. They will also be as simple to use as telephones or at least nearly so". The emergent information society and the knowledge-based economic powers will therefore redefine the ability of regions and enterprises to prosper in the new millennium. Inevitably, the tourism industry is also affected by the technological revolution. Both tourism destinations and enterprises increasingly need to adopt innovative

methods and to enhance their competitiveness. On the demand side, the new, sophisticated, knowledgeable and demanding consumer increasingly becomes familiar with the emergent ITs and requires flexible, specialized, accessible, interactive products and communication with principals. Hence, new best management practices emerge, taking advantage of the ITs revolution and re-engineering the entire business processes of the industry. This paper aims to analyse some of the most critical IT developments and to demonstrate how do they influence the tourism industry. It blends the theoretical background of ITs with the strategic functions of the industry and proposes a multi-dimensional framework for the incorporation of ITs in tourism.

The fusion of ITs provides unprecedented tools, which facilitate the creation of new industries, restructure existing industries and radically change the way firms and regions compete. ITs reshape the nature of competition in most economic activities, whilst they link consumers and suppliers, adding value to organizations' products. Hence, ITs change the competitive game for almost all organizations, regardless the industry they operate in, their location or size. In particular, technology affects competitive advantage as it determines the relative cost position or differentiation of organizations.

A firm can achieve several strategic benefits by using ITs, namely:

- establishing entry barriers;
- affecting switching costs;
- differentiating products/services;
- limiting access to distribution channels;
- ensuring competitive pricing;
- decreasing supply costs and easing supply;
- increasing cost efficiency;
- using information as a product itself;
- and building closer relationships with suppliers and customers.

Manufacturers not only regard investments on ITs as crucial in enabling them to outperform competitors, but also their expectations from IT systems go far beyond their operational management and focus primarily on the strategic management of enterprises. As information is a source of power in negotiations with partners, the adoption of ITs often redefines the power balance between partners, and changes their bargaining relationships. Perhaps, small and medium sized enterprises gain more advantages by using ITs, as bargaining power is gradually relocated from institutional buyers and wholesalers to suppliers, due to the more effective and interactive communication they can achieve with their target markets. Small size in combination with innovation and effective networking by using ITs also enables them to develop “virtual size” and empowers their competitiveness. Smaller firms can therefore develop and deliver the right product, to the right customer, at the right price and place, without over-depending on intermediaries. This would enable small firms to enhance their position and increase their profit margin.

Cultural tourism development currently presents some very definite unbalances. On one side, it depends on localized and hardly reproducible resources. On the other, it is governed by an industry that is increasingly both global in nature and disconnected from the sources of cultural capital. Like any industry, tourism needs profit and investment incentives to grow, but both commercial interests and government entities should work to achieve a reconciliation of the inherent conflict between heritage and tourism. The potential from tourist growth can only be fully exploited if both policy makers

and businesses remove unnecessary structural barriers to growth, by capitalizing on the opportunities that are based on cultural heritage and identity. In other words, a new strategy is required for developing cultural heritage as a viable economic sector. With time, there should be a change from the administered industrial economy to an entrepreneurial economy accompanying

and institutionalizing the information society. Heritage tourism is currently in the process of systematization of information, communication and multimedia as the means to achieve a competitive advantage and sustainability. A wareness and knowledge about a destination and perceptions about its quality and value are factors that influence the motivation of visitors and the selection of a destination. Destinations will gradually have to incorporate the online Destination Management System (DMS) that can improve promotion and management using integrated e-services. New Destination Management Systems can convey diverse, comprehensive and multimedia information on heritage destinations and surrounding products and services, and thus contribute to the destinations long-term competitiveness and sustainability.

## **MULTIMEDIA WEBSITE FOR UZBEKISTAN'S COLLEGES AND LYCEUMS**

***B.A. Khayrullaev, G.N. Suleymanova***

*Summary.* This article deals with the national scientific site, which will unite scientists, teachers, students of educational institutions of the Republic of Uzbekistan. Due to this, it will be possible to support students after their graduation, propose them different teaching materials online related to their work. The process of education on concrete sphere, different courses according to the chosen specialty, where teachers may present their online lessons to students will be presented in this site. Moreover, the online republican library, consisting of IRS's (information resource center) and ILS's (information library center) will be included in this portal.

**Key words:** *online scientific store, online library, bibliographical description, student's and teacher's accounts, scientific video - publications, electron published*

*articles and books, IRC (information resource center), ILC (information library center).*

## **Introduction**

Nowadays, the integration of ancient publications and digitization of video materials on the [www.armat.uz](http://www.armat.uz) web site in some libraries is being held. The next stage of the process will be combined with new electron issues and scientific videos. Further, the information from both periods will be stored and represented into the website. The great demand in reliable data in the Internet has made the creation of the website crucial.

## **Details**

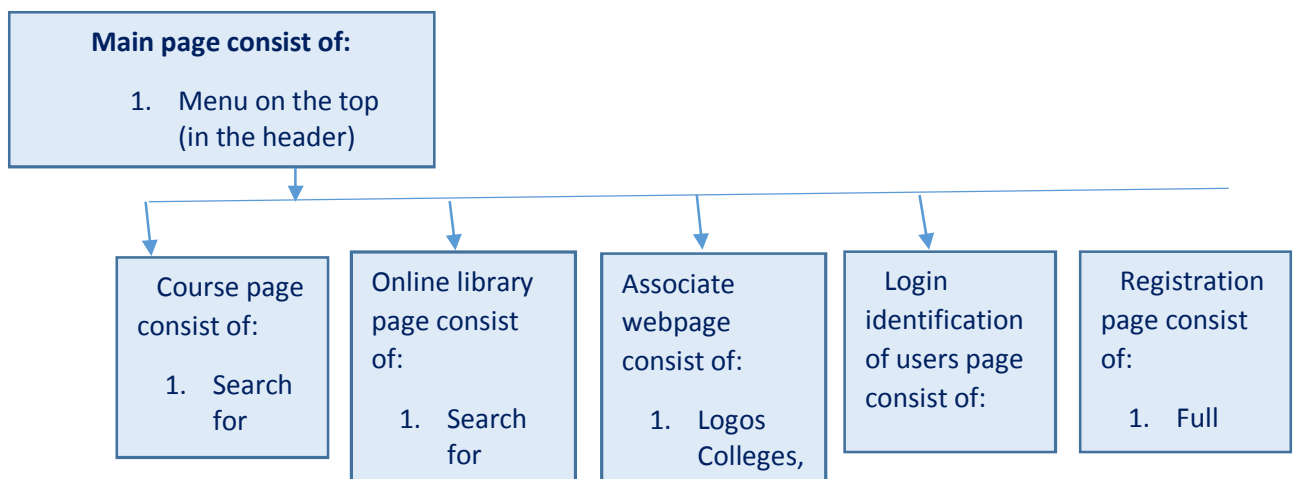
Main customer of the website is the University of Advanced Training Course, as IRC and ILC of all colleges and lyceums are subordinated to this educational center in the Republic. The first and the most obvious benefits of the web site is that it reduces the necessity of copying and buying resources for educational establishments by uniting their databases and placing in this portal. more books, journals and other publications to the educational centers. The second benefit is the introduction of online teachers' courses, where a customer will be able to work and seek for new ways of teaching methods and improve his skills.

### **Main tasks of the website are:**

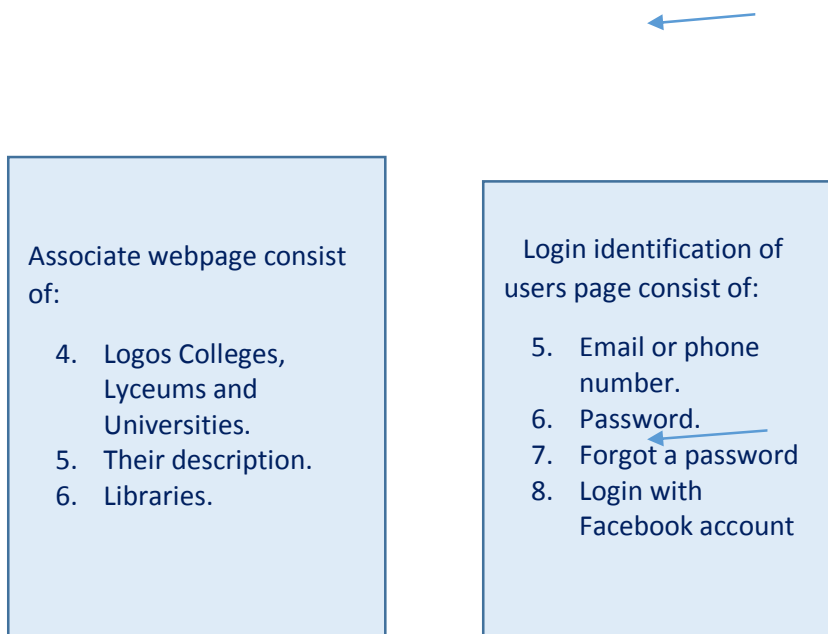
- Quick access to electronic publications and multimedia data.
- Possibility of adding new publications and multimedia resources to the date base of the website.
- Possibility of informing people about new scientific works.
- Provision with modern online courses for training learners
- Opportunity of loading books and different legal publications to the website by the authors themselves.

In consideration of modern period, Uzbekistan has all necessary technical opportunities to create such a huge system. It can be clearly seen, that the most up-to-date websites has high quality interphase, comfortable functions. The highest information capability is gained by using mobile, tablet form of the website; also, it should be created apps for Android and IOS.

### The structure of the website.



Interaction between sections and subsections of the website:



## The main page:

## The sectors and subsectors:


- Предлагающиеся
  - Языки
  - Все Предметы
- Искусство
  - Веб Программирование
  - Бизнес И Менеджмент
  - Жемчуг
  - Экономика И Финансы
  - Образование
  - Энергетика И Науки О Земле
  - Проектирование И Разработка
  - Продукты И Питание
  - Гуманитарные Науки
  - Информация, Техника И Дизайн
  - Юриспруденция
  - Математика
  - Медицина
  - Музыка, Киноагрорафия И Звукозапись
  - Общественные Науки
  - Статистика И Анализ Информации

## Descriptions of the course



[Главная](#) » [Все предметы](#) » [Компьютерные технологии](#) » [Разработка программного обеспечения](#) » [Университет Информационных Технологий \(Ташкент\)](#)

## Концепции облачных вычислений



### Концепции облачных вычислений - Дополнительная информация

О курсе:	Cloud computing systems today, whether open-source or used inside companies, are built using a common set of core techniques, algorithms, and design philosophies—all centered around distributed systems. Learn about such fundamental distributed computing "concepts" for cloud computing.
Учебный план курса:	This course will be broken up into 5 weekly modules covering the following topics: Week 1: Leader Election, Mutual Exclusion Week 2: Concurrency Control, Replication Control Week 3: Stream Processing, Graph Processing, Structure of Networks, Scheduling Week 4: Distributed File Systems, Distributed Shared Memory, Sensor Networks Week 5: Security, Datacenter Outage Studies, Wrap-up

[Концепции облачных вычислений](#) >

The website has two main pages, the first is a course page and the second is an online library page. The last has its own database from IRS and ILS colleges and lyceums, where writers may load their publications from the website, but reviewing check from the admin panel. In addition, licensing right will be confirmed after a contract.

Teachers will create the courses, and it could be prolonged to over 5 - 7 weeks depending on the course capacity. Moreover, they can load their own resources, like video, books and other tutorials to the website.

Students may join any courses, as well as they are able to download and use tutorials and watch video files.

## Conclusion

Finally, the supposed website allows optimizing educational work of colleges and lyceums and their libraries. In addition, diploma work that created by students could be accessible to others. Thereby, citizens and disabled people who live far away from libraries, they may use the website by their PC and smartphone it became possible to improve knowledge more efficient by the internet.

## **GAME PROJECT “TIME TO DEFEND”**

***D. Khamraev, Sh. T. Ibragimova***

***Summary.*** *The article describes the main possibilities of Unity3D engine, the structure and content of my second Gambling Project "Time to defend" which was written on the same engine. I would like to remind you that my first game project “Overlord” won the first place at the Olympics on a computer programs at our university (TUIT) which was jointly organized with KOICA and Samsung on December 12, 2014.*

***Keywords:*** *Unity3D, game, C# script, Time to Defend.*

### **Introduction**

***Computer game as art.*** Computer games are one of the dramatic forms, and their interactivity - it's a matter of degree of participation, but not the form. Therefore, as in other forms, computer game has five key elements: style, plot, character, theme and decorations. All good games should have some entertainment potential, and most of it is based on the laws of classical drama.

Computer games can be classified according to several criteria:

***Genre:*** Game might be belong to one as well as several genres, but in unique cases – might open a new or be beyond any genre.

***The number of players and the way they interact:*** A game with a single player - designed for one person, or with multiplayer - designed for the simultaneous game of a few people, and carried on the same computer, via the Internet, email, or mass.

**Visual representation:** the game can be used as graphical design, and on the contrary, might be a text. The game can also be a two-dimensional or three-dimensional. There is sound in a game – it is use instead of a visual representation of the sound.

**Platform:** Game can be belong to both the same platform, and multiplatform.

The name of my project is "Time to Defend". This project is a computer game in the genre of action with graphics 3D. Now it is a game with a single, but I will continue to develop the game with multipliers so that you can play with your friends. Designed on the Unity3D engine for the platform of Windows in 12.03.2015.

According to the website 3DNews, in 2011, the US government and the US National Endowment separate art form, along with the theater, cinema and others, have officially recognized computer games. After that, developers have the right, on a par with the cinema, music, painting and literature; rely on government grants ranging from 10 to 200 thousand dollars. This financial support will allow independent professionals and companies realize significant activity conceptual designs.

### **Gameplay**

In a certain time, attacking enemy tanks and you have to defend yourself and 12 barracks. You control your tank using the keyboard and mouse. Keys Q and E turn's gun tank. To control of the tank, use the keys: W - forward, S - backward, A - left and D - right. Left mouse button - fire, right mouse button - SIGHT, Scroll mouse - up and down the gun.

### **Development and release**

Author and developer of the game is me. The game is made entirely in C #. Used 37 C# scripts (classes) in 5 scenes. Many effects such as fire, explosions, rain, storm, wind, sea, grass, smoke and various sound effects are used in the game.

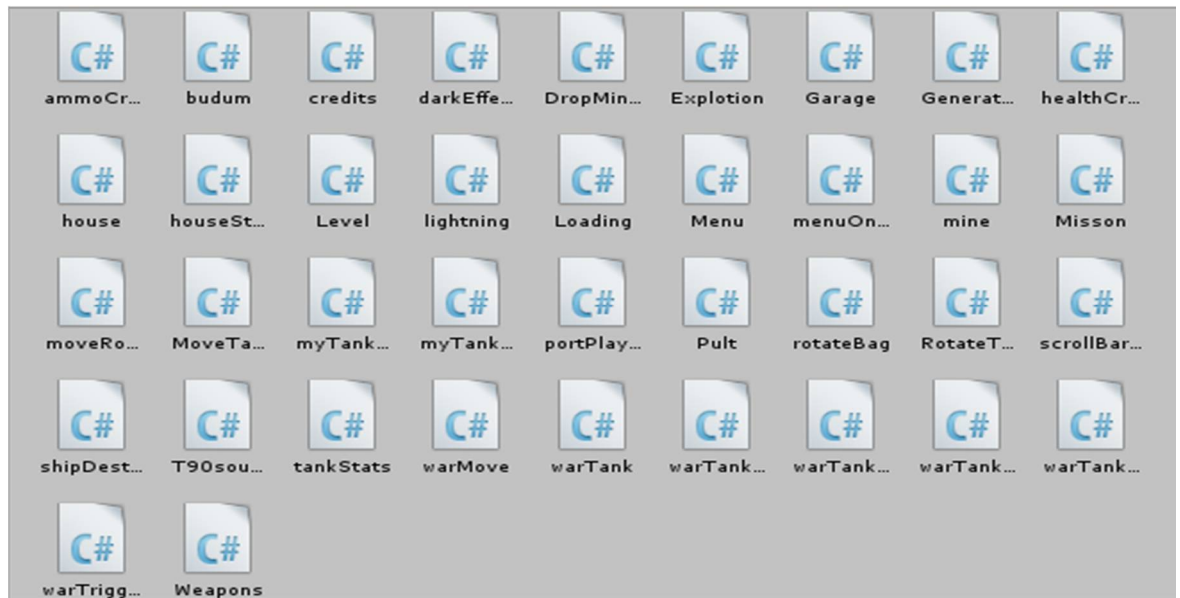
There are many game engines, but I have chosen Unity3D.

**Unity** - a tool for the development of two and three-dimensional applications and games running under Windows and OS X. Created with Unity applications run under the operating systems Windows, OS X, Windows Phone, Android, Apple iOS, Linux, as well as game consoles, Wii, PlayStation 3, PlayStation 4, Xbox 360, Xbox One. You can create applications to run in the browser using a special plug-in Unity (Unity Web Player), as well as through the implementation of technology WebGL.

Applications created with Unity, support DirectX and OpenGL. Actively engine is used as a major developer (Blizzard, EA, Ubisoft), and developers Indie-games (for example, a remake of Moore. Utopia (Pathologic), Kerbal Space Program, Slender: The Eight Pages, Slender: The Arrival, Surgeon Simulator 2013 and t. n.) due to the presence of the free version, user-friendly interface and easy operation with the engine.

Unity Editor has a simple Drag & Drop interface that is easy to set up, consisting of different windows, so you can debug the game directly in the editor. The engine supports three scripting languages: C #, JavaScript (modification), Boo (a dialect of Python). Editor supports DirectX 11, and HDR. Physics calculations produces physical PhysX engine from NVIDIA.

Used C# scripts:



### Plot

The game takes place on a secret island where enemies are found. They send their tanks on the ship Hovercraft that is placed quite a few tanks. To destroy the ship Hovercraft you need missiles and rockets. They will be ready in some time. Task is to destroy the enemy tanks before missiles will destroy the enemy ship.

The game has 9 types of tanks.



They can be opened to pass the levels get bonuses. Each tank has its characteristics: speed, strength, armor and stability.

**Some screens:**



### Garage:



### Time to defend:



## CREATING INFORMATION TECHNOLOGIES: E-BOOKS

*I. Yusupov, M. Yoqubov, N. Khodjakulova*

**Summary.** *In this article creating new electronic programs and the successful methods how to utilize them more effectively have been indicated. All the up-to-date present-day information has been gathered as a single huge e-book structure based and directed to the development and growth of the knowledge and acquirement of English and IT.*

**Keywords:** *IT (Information technologies), e-book, multimedia, C#, C++, Java*

Information Technology has been a strong catalyst for educational innovation and improvement, especially when the World Wide Web is involved. The next generation IT, namely Internet needs technological support to accommodate promising new applications, such as interactive e-book multimedia distribution. Actually, although many various types of electron resources exist presently, most of them are not worth using more comfortably as there is lack of compactness. The reason why we desired to create this ultimately compact useful IT e-book tutorial program is that it provides more useful, productively, confidential, compatible with the users.

E-learning, as a component of flexible learning, encompasses a wide set of applications and processes which use available IT electronic media to deliver vocational education and training. It includes computer-based learning, Web-based learning, software and hardware knowledge, the study of programming languages, such as C, C#, C++, Java, and digital collaboration. Our work aims to integrate interactive multimedia e-learning applications in a proactive fashion taking into account the available network resources. In this way, our motivation is to offer improved learning experience based on ultimate technology.

### **The importance of the topic**

Teaching the English language, particularly several projects of e-books consisting of confidential and accurate information in information technologies are being fulfilled in our government. However, not all the projects provide satisfaction. E-books cause the development, increase in the quality of teaching IT more productively and effectively following the time management, and simultaneously provide the chances to use IT devices, such as smart phones, tabs, laptops and other dissimilar high technology devices.

E-learning services are used to promote connections between people (e-students) and training IT resources. E-learning research is wide and growing in importance, especially in higher education. The design of e-learning systems should consider the program as mandatory for successful learning experiences, selecting the appropriate technologies and applications, and regulating proactively the information and communications technology (ICT) resources utilization.

The main importance of this article is to provide adaptive behavior to applications used on many dissimilar e-books, tutorial manuals, tests, audio and video materials, focusing essentially on the development of the knowledge in all spheres of life, particularly in Information Technologies linking with English of every single user (e-learner).



## The advantage of the project

This novel IT e-book totally differs from the other previous e-books with many different advantageous functions:

1. This e-manual is common, understandable, and does not require extra operations
2. This e-manual consists of text, audio and video materials.
3. Users can have an opportunity to choose basing on his needs
4. This e-manual is designed for the users, most of whom are using the “Windows OS” most of the time.
5. This e-book owns a system which supports the users in verifying their knowledge through responding to the multiple choices, filling the gaps and other various methods of testing.

## System’s architecture

The system architecture proposed in this article includes an adaptive module based on “C++ builder 2010”. The program has been created on “C++ builder 2010” and enables to use on all types of Windows OS platforms. The database has been coded basing on SQL, Microsoft Access.

The general scheme-architecture of the program:



All the data is kept in the database.

This program is connected to the database through the following code:

```
String file_name = "base.mdb";
```

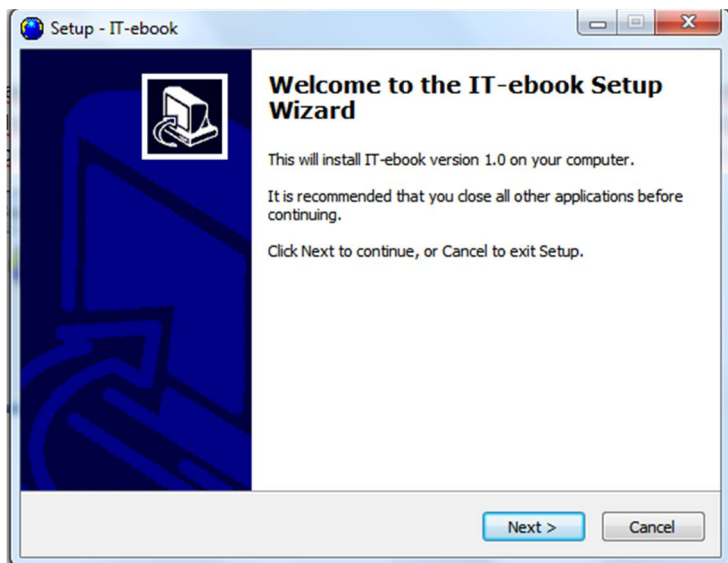
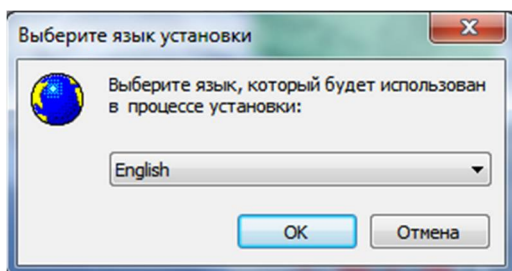
```

if (!FileExists(ExtractFilePath(Application->ExeName) + file_name))
    {ShowMessage(ExtractFilePath(Application->ExeName) + file_name + "
nomli baza topilmadi");
    Application->Terminate();
    } else
    {String   WayToBase   =   ExtractFilePath(Application->ExeName)   +
file_name;
    ADOConnection1->ConnectionString =
"Provider=Microsoft.Jet.OLEDB.4.0;User ID=Admin;Data Source=" +
WayToBase+ ";Mode=Share Deny None;Jet OLEDB:System database="";Jet
OLEDB:Registry Path="";Jet OLEDB:Database Password="*****";Jet
OLEDB:Engine Type=5;Jet OLEDB:Database Locking Mode=1;Jet
OLEDB:Global Partial Bulk Ops=2;Jet OLEDB:Global Bulk Transactions=1;Jet
OLEDB:New Database Password="";Jet OLEDB:Create System
Database=False;Jet OLEDB:Encrypt Database=False;Jet OLEDB:Don't Copy
Locale on Compact=False;Jet OLEDB:Compact Without Replica Repair=False;Jet
OLEDB:SFP=False;";
    ADOConnection1->Connected = true;
    ADOQuery1->Open();    }

```

As the database is protected, the pattern code” Jet OLEDB: Database Password=“\*\*\*\*\*”,” is used through “stars \*\*\*\*\*” (the exact code is different) in this part. When the program base or the file names in it are renamed or transferred, the program terminates its process.

To utilize the program you have to install the “setup.exe” file in your computer.



As soon as the program has been installed successfully, the program can be used through the file IT-ebook.exe

## CONCLUSION

The goal of this article is to provide the users with the most confidential, accurate, ultimate, and necessary data and information concerning information technologies supported in this e-book project. In addition, this unique e-book system causes the users to acquire and improve more deeply, effectively as well as confidently their general knowledge, particularly in the sphere of information technologies utilizing English knowledge.

### III SECTION – TELEVISION TECHNOLOGIES

#### **FEATURES OF VIDEOCOMPRESSION BASED ON DIVISIBLE AND INDIVISIBLE WAVELET TRANSFORMS AND IMPLEMENTATION OF INDIVISIBLE WAVELET TRANSFORMS BASED ON WAVELET LEGALL 5, 3**

*R. Ibragimov, M.S. Yusupova*

*Summary.* The article deals with the study of some minor issues in usage of wavelet transform as mean of video compression.

*Keywords:* video compression, wavelet transforms, problems, solutions, indivisible wavelet transforms algorithm.

Currently, due to the limited bandwidth of communication channels and the rapid development of information technologies, especially high-definition television, an important task is to create more efficient methods and algorithms for video compression in real time [1].

One of the rapidly developing areas of research is methods of compression of video sequences based on wavelet functions. They can achieve compression ratios of the order of 60-100 times while maintaining good visual quality of the reconstructed images. At the moment, mainly used divisible transformation in which processing of data occurs in 2 stages: horizontally and vertically [2]. This approach is simple to implement, but it does not take into account the spatial correlation of pixels, which reduces the possibility of their effectiveness. Therefore, an urgent task and one of the most promising areas of research is to develop methods of indivisible wavelet transformations that potentially have larger value of compression.

Image processing by divisible wavelet transform is a consistent horizontal and vertical filtering on the lower and upper frequencies of the array of image data.

Priority of horizontal and vertical transformations has no special meaning and is determined by our stereotypes.

Consider the case will be first horizontal, then vertical processing. At each step of the transformation, takes place two partitions by frequency. As an example we take a picture size  $N \times N$ . Initially, each of the  $N$  rows of the image is divided equally into low (LF) and high (HF) frequency components. As a result we have two images of size  $N \times N / 2$ . Then, each column is treated in a similar manner. Finally, we have four  $N / 2 \times N / 2$  images: LF horizontally and vertical, HF horizontally and vertically, LF horizontally and HF vertical and HF horizontally and LF vertically. Consider the divisible wavelet filtering on the example of a homogeneous test image (Fig. 1). In the final structure of the coefficient array (Fig. 2) we have set of homogeneous coefficients, which are further processed by the compressor of long series. The principle of operation of this compressor - a series of identical elements is written as a single element with the number of its repetitions, i.e. for storing large amounts of data of the same type will require much less memory [1].



Fig.1. Test image size of 320 x 240 with a value of  $Y = 30$

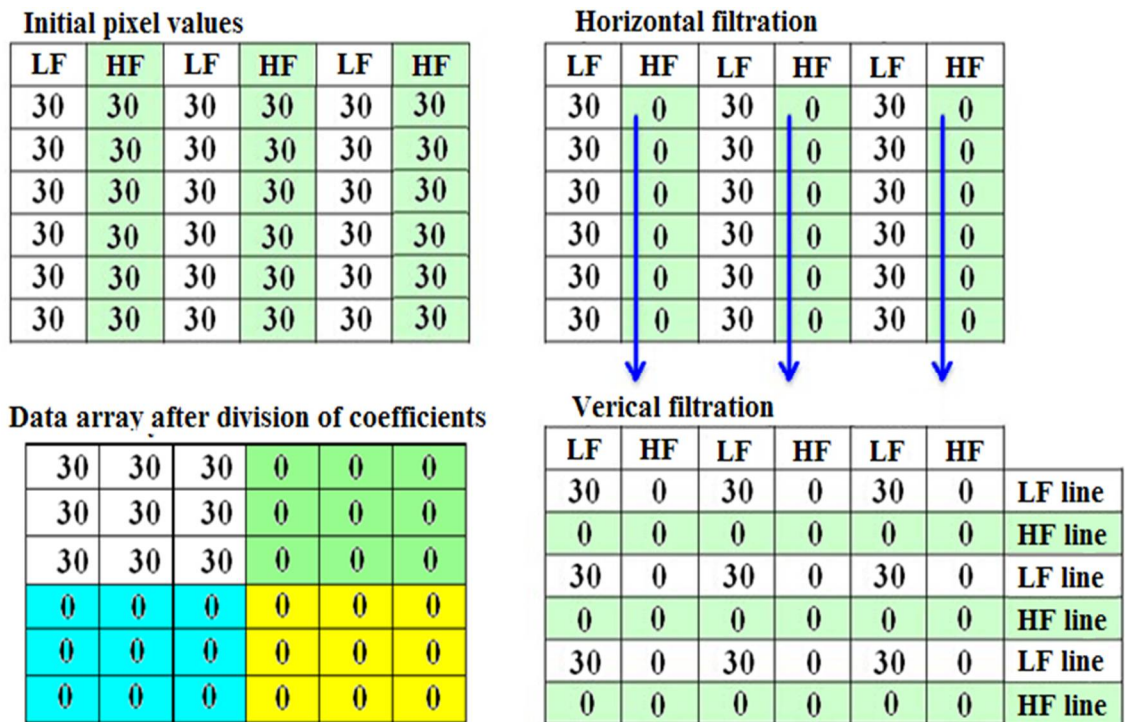


Рис.2 Divisible wavelet transform of test image

Because the wavelet function is relatively long, there is the problem of boundary conditions - for a low-pass filter in the first position the left adjacent pixel is missing and for the high-pass filter there is no right adjacent pixel at the end of the row. The same problem arises with filtering borders in vertical processing.

This problem is often solved by continuing image beyond the boundaries. Commonly used symmetric and periodic extension [1, 2]. Disadvantage of periodic extension is that the estimate is based on observations spaced apart by N samples. The result is a significant estimation error, which negatively affects the efficiency of compression. In the case of a symmetric extension, the estimation is extrapolation of the element and has lower entropy than the estimate obtained by periodic extension. Because of this symmetrical extension provides greater compression efficiency. During the processing of bounds errors occur, which cause great difficulties for interface processing of the video data based on the block

methods of motion compensation, therefore, the improvement of methods of representing the boundary of samples is a promising task.

To date, there exists an implementation of indivisible wavelet transforms based on Haar wavelet. However, Haar wavelet has only two coefficients, i.e. it has a lack of smoothness and precision of the approximation image. In the restored image, there is a serious distortion, so this method is not considered in practice for image compression, but may serve as the theoretical basis for the research of indivisible transformations.

In this paper, we consider the embodiment of indivisible wavelet transforms based on wavelet **LeGall 5/3**. The reason for choosing this particular wavelet is its relatively short length and good smoothness and accuracy of the approximation function [3]. This function is represented in the form of two 3-point filters (low and high frequencies) in the divisible version of the conversion. In indivisible transformation for the analysis of correlation of pixels used 5 pixels: processed central pixel and a couple of his environment horizontally and vertically.

Divisible transformation described by the following set of formulas:

$$\text{High-pass filter (prediction): } \mathbf{d}_i = \mathbf{B}_i - (\mathbf{B}_{i+1} + \mathbf{b}_{i-1} + 1) / 2, \quad (1)$$

$$\text{Low Pass Filter (update): } \mathbf{A}_i = (\mathbf{d}_{i+1} + \mathbf{d}_{i-1} + 2) / 4 + \mathbf{b}_i,$$

In indivisible filters the formulas (1) are slightly more complicated:

$$\text{High-pass filter (prediction): } \mathbf{d}_i = \mathbf{B}_i - (\mathbf{B}_{i+1} + \mathbf{b}_{i-1} + \mathbf{b}_{j+1} + \mathbf{b}_{j-1} + 1) / 4 \quad (2)$$

$$\text{Low Pass Filter (update): } \mathbf{A}_i = (\mathbf{d}_{i+1} + \mathbf{d}_{i-1} + \mathbf{d}_{j+1} + \mathbf{d}_{j-1} + 2) / 4 + \mathbf{b}_i$$

Due to the nature of indivisible transformation, it is not enough to process the whole array of image data. Therefore, the combined algorithm uses divisible and indivisible transformations. This can be seen from Figure 3 and explanations to it. As an example, consider a test homogenous image size of 320 x 240 with a value of  $Y = 30$ . Figure 3 shows part of the image data size of 8 x 8 pixels.

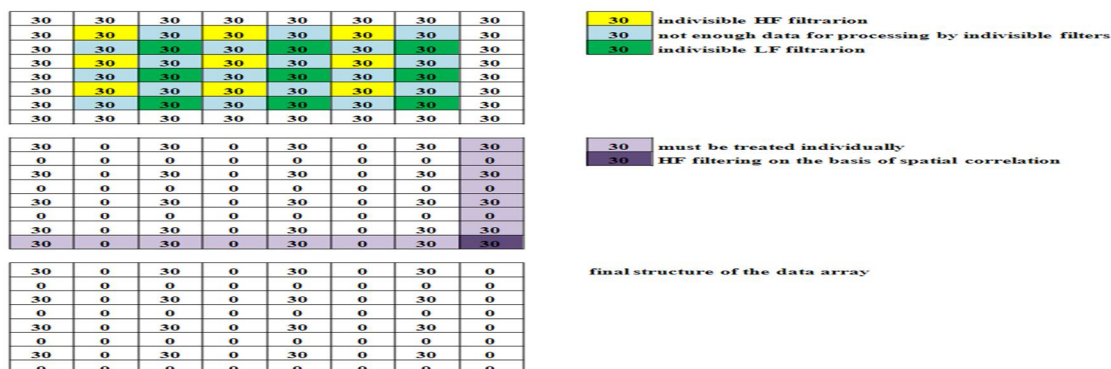


Fig.3. Combined processing of an array of image data:

- a) Processing the working area, the top and left borders;
- b) Processing the right and bottom borders, the right lower corner pixel;
- c) Data structure prepared for compression

Indivisible transformations used in the processing of the working area will not affect the portion of the data, so we have to supply them by divisible filters (Fig.3, a). For processing borders, we use symmetric extension. Processing the right and bottom borders occurs separately (Fig.3, b), as the last row and column will represent the HF components. Corner lower right pixel is processed taking into account the spatial correlation by indivisible transform using symmetric extension. The data structure resulting from a combined filtration is convenient to use compressor of long series. The decoding of image is in reverse to the encoding order.

The materials of the report provide more detailed results of research.

## REFERENCES:

1. A. N. Yakovlev, "Introduction in wavelet transformations", Novosibirsk, NGTU, 2003.
2. Ingrid Dobeshi, "Desyat lekcij po veyvletam", Ijevsk: NIC"Regulyarnaya i haoticheskaya dinamika", 2001.
3. Gavrilov I. A., Puziy A. N., Otto S.E., Bobobekova D. B. "Vliyanie vybora wavelet filtra na effektivnost sjatiya izobrazenij"//Vestnik TUIT №1-2, 2013.



## THE PERFORMANCE ANALYSIS OF SOFTWARE ENVIRONMENT FOR TV IMAGES PROCESSING

*K.S. Kalyujniy, Sh.T. Ibragimova*

**Summary.** *The article discusses the software environment's main features, such as Microsoft Visual Studio and Borland C++ Builder. Efficiency research results of the software which is used to create software processing units of TV images are given. The processing is based on the formation of the inter-frame difference between adjacent frames.*

**Keywords:** *C++, Microsoft Visual Studio, Borland C++ Builder, the TV image, inter-frame difference, inter-frame space, the assembler code.*

Currently, object-oriented software environment such as Microsoft Visual Studio and C++ Builder are widely spread to solve the problems of TV images processing.

However, it should be noted that television is a real time system so that all image-processing steps need to be enclosed in inter-frame interval of 20 ms with interlace and 40 ms with progressive one. Therefore, image processing software units must have a very high speed. That's why there is a need to analyze the main characteristics and capabilities of these software environments, and also to estimate practically the efficiency of their application in TV images processing. Let's consider the main features of the software environments in more detail.

Borland C++ Builder programming system combined the Integrated Development Environment (IDE) ideas, those implemented in Turbo Pascal and Borland Delphi programming systems and features of C++ language programming.

Modern Borland C++ Builder implementation is focused on the development of programs, which run under all types of Microsoft Windows operating systems

(OS). Borland C ++ Builder programming system fully supports the language C, which makes it possible to create software units and libraries used in other development tools in this system.

The class structure of language C++ in programming system Borland C++ Builder is based on the visual control library (VCL), which has all the basic controls and OS interface parts. Also it has classes that enable the development of applications for the client-server and the three-level architecture. Therefore, the developer can use not only all the components that is included in the VCL library, but also develop their own components based on any of the classes of this library. These new components become the part of the programming system and then can be used by other developers [1].

Microsoft Visual Studio programming system is a kind of development environment for the advanced programming language C++, made by Microsoft. Now this programming system is structured as an integrated development environment that includes all the necessary tools to develop result programs running under different versions of Microsoft Windows OS [2].

The base of Microsoft Visual Studio programming system is the library of classes Microsoft foundation classes (MFC). All the basic controls and OS interface parts in this library implemented as C++ classes. Also it has classes that enable the development of applications for the client-server and the three-level architecture (in modern versions of the library). Microsoft Visual Studio programming system allows you to develop any applications running in the OS environment like Microsoft Windows, including the server or the client programs, which connect by one of the above architectures [2,3].

MFC library classes are focused on the using of COM technology (Component Object Model)/DCOM (Distributed COM), a technological standard of Microsoft Company, designed to create software based on interacting components, each of which can be used in many programs simultaneously. The standard embodies the polymorphism and encapsulation ideas of object-oriented

programming [4]. A developer can create their own classes in C++ language and organize their own data structures using this library.

Unlike Borland programming systems Microsoft Visual Studio programming system is focused on the using of standard storage means and processing interface resources in Window, because all Windows versions developed by Microsoft. Therefore, Microsoft Visual Studio provides all the necessary tools to create professional Windows-based applications.

MFC is an implementation of a wide range of C++ classes, which orient on the development of programs running under Microsoft Windows OS. This is largely because the creator of the library, Microsoft is also the creator of the Microsoft Windows OS, on which orient the object code of library. Either the library can be connected to the resulting program with a conventional linker or if it is used as a dynamic library connected to the program during its execution. MFC library has widespread, because it can be used not only in the Microsoft software systems, but in programming systems of other manufacturers.

Thus, these programming environments have greater functionality, user-friendly interface and similar application fields, but different syntax of programming language. However, when we develop programs for television applications, a very important criterion of their work is the code's performance. That's why we make an analysis of efficiency of these programming environments on base of this criterion.

To identify the advantages of one software environment we create test algorithm determining the inter-frame difference of adjacent frames of TV images shown in Figure 1.

The algorithm works as follows: two images of adjacent frames in bmp format load in block 1. Characteristics of processing cycles on width and height of loaded frames define in block 2. Next, in block 3 subtract pixel values of the second frame from pixel values of first frame, whereupon the resulting data is stored in the output array of block 4 and recorded as a bmp file. Figures 2 and 3

shows the interfaces' appearance of analyzed programs, which created in Microsoft Visual Studio 2008 and C++ Builder 6 programming environments. In addition, Figure 4 shows the initial images of adjacent frames of video, and the result of their difference.

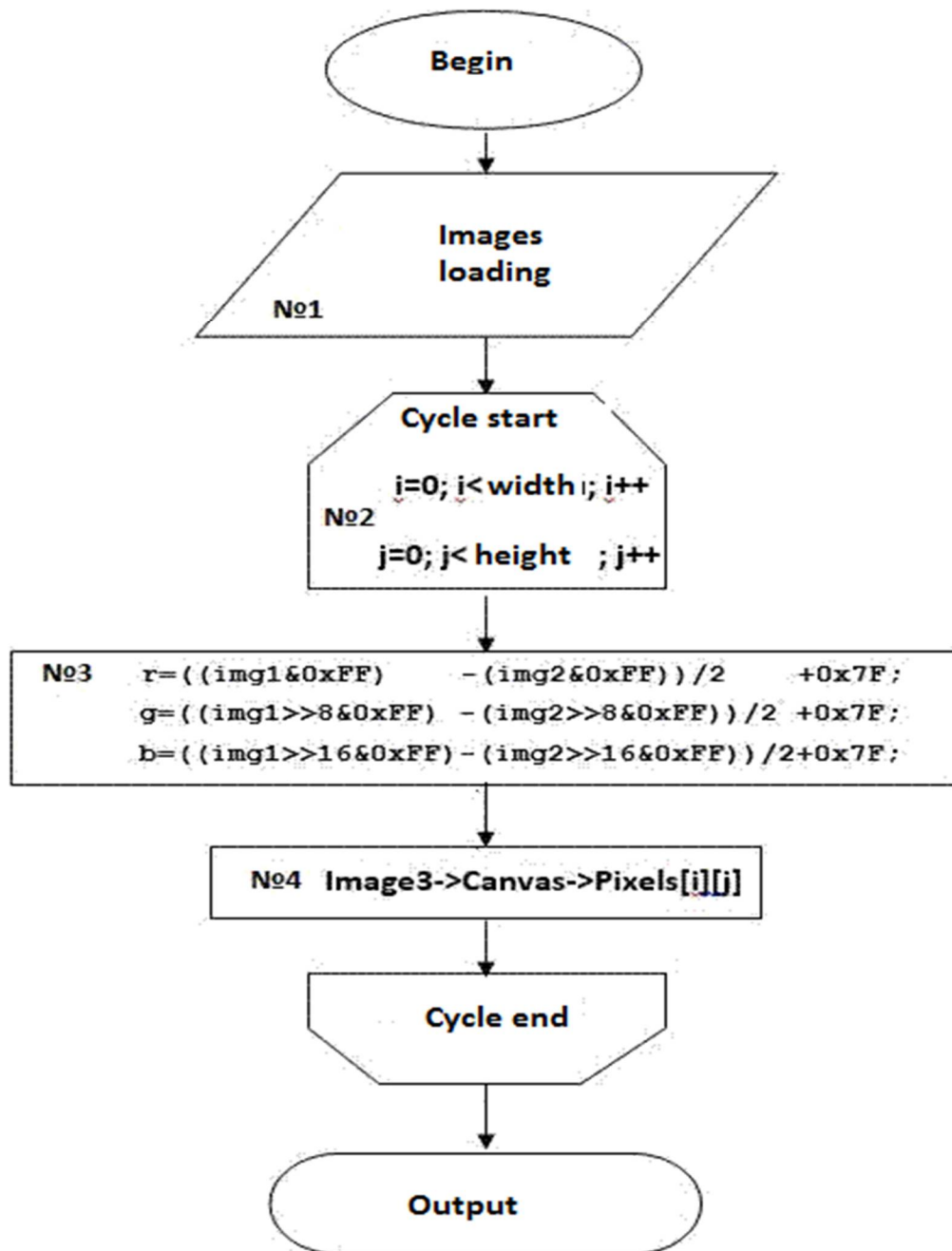


Figure 1. Algorithm of calculation video inter-frame difference block diagram.

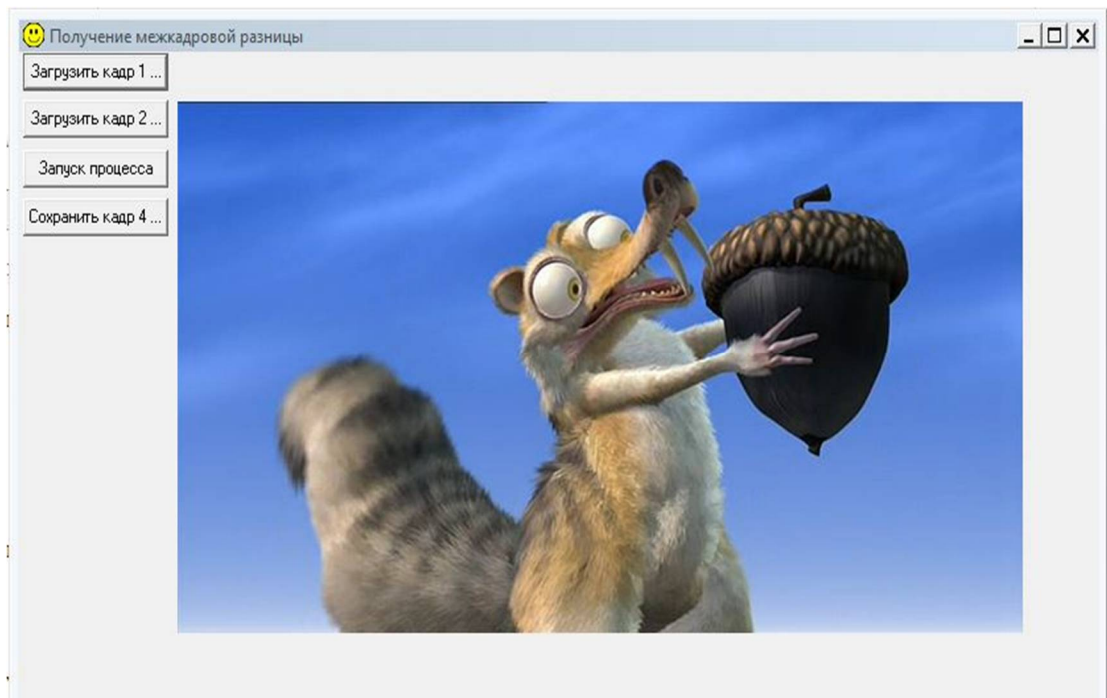
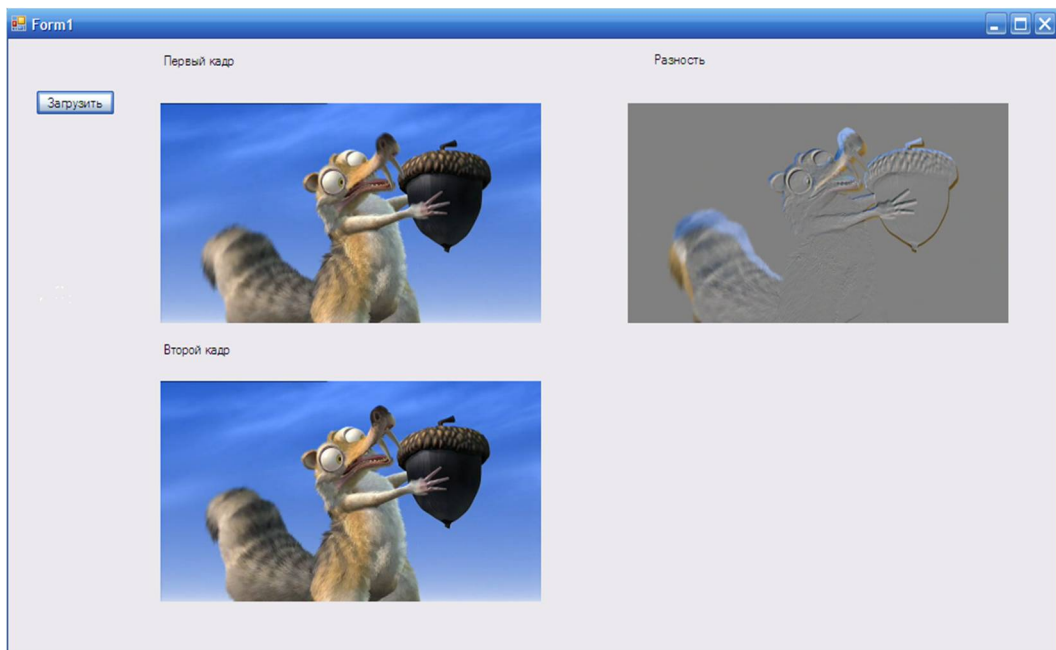


Figure 2. The test program interface carried out in C++ Builder environment.



*Figure 3. The test program interface carried out in Microsoft Visual Studio 2008 environment.*



*Figure 4. Images of adjacent frames and the result of their difference*

In the experiment, time spent on inter-frame image processing was the main criterion for evaluating the efficiency of software units. The study found that the calculation of inter-frame difference test image size of 640x352 in Microsoft Visual Studio environment took 15 ms, and the one in C++ Builder 6 spent 828 ms, which was 55 times slower. Then we analyzed the structure of the machine code of both test programs.

When analyzing the C++ Builder 6 machine code, it was found that its software units have very large code redundancy, which is manifested in using a lot of internal routines and API functions. Below are the segments of listings of assembler code both programs, and Table 1 shows the research data about the number of subprogram and functions of forming inter-frame difference of TV images unit.

Result of assembly code in Visual Studio 2008

```
for (int i = 0; i < img1->bih.iHeight; i++)
```

```
00000534 xor     edx,edx
```

```
00000536 mov     dword ptr [ebp-18h],edx
```

```

00000539 nop
0000053a jmp          0000053F
0000053c inc          dword ptr [ebp-18h]
0000053f mov          eax,dword ptr [ebp-18h]
00000542 mov          edx,dword ptr ds:[004043F0h]
00000548 cmp          eax,dword ptr [edx+17h]
0000054b jae          0000079E

```

**for (int j = 0; j < img1->bih.iWidth; j++)**

```

00000551 xor          edx,edx
00000553 mov          dword ptr [ebp-14h],edx
00000556 nop
00000557 jmp          0000055C
00000559 inc          dword ptr [ebp-14h]
0000055c mov          eax,dword ptr [ebp-14h]
0000055f mov          edx,dword ptr ds:[004043F0h]
00000565 cmp          eax,dword ptr [edx+13h]
00000568 jae          00000798

```

**raznost->raster[i][j].red = (img1->raster[i][j].red - img2->raster[i][j].red)  
/ 2 + 128;**

```

0000056e mov          eax,dword ptr [ebp-1Ch]
00000571 mov          eax,dword ptr [eax+38h]
00000574 mov          edx,dword ptr [ebp-18h]

```

```

00000577 mov          eax,dword ptr [eax+edx*4]
0000057a mov          ecx,dword ptr [ebp-14h]
0000057d lea         ecx,[ecx+ecx*2]

```

Result of assembler code in a C + + Builder 6:

**Unit1.cpp:65. img1=Image1->Picture->Bitmap->Canvas->Pixels[i][j];**

```

00401BB1  8B45 BC          MOV EAX,DWORD PTR SS:[EBP-44]
00401BB4  8B90 F4020000   MOV EDX,DWORD PTR DS:[EAX+2F4]
00401BBA  8B82 68010000   MOV EAX,DWORD PTR DS:[EDX+168]

00401BC0  E8 034B0300

CALL Project1.@Graphics@TPicture@GetBi

004366C8  53              PUSH EBX

004366C9  8BD8           MOV EBX,EAX

004366CB  8B15 70264300   MOV          EDX,[DWORD
:@Graphics@TBitmap@]

004366D1  8BC3           MOV EAX,EBX

004366D3  E8 8CFFFFFF

CALL Project1.@Graphics@TPicture@ForceType

00436664  53              PUSH EBX

00436665  56              PUSH ESI

00436666  57              PUSH EDI

00436667  8BFA           MOV EDI,EDX

00436669  8BD8           MOV EBX,EAX

```



```

0043666B 8B73 0C      MOV ESI,[DWORD DS:EBX+C]
0043666E 8BC6                MOV EAX,ESI
00436670 8BD7                MOV EDX,EDI
00436672 E8 FDB9FEFF

```

CALL [Project1.@System@IsClass\\$qqrp14 System@](#) TObjectp

```

00422074 53                PUSH EBX
00422075 56                PUSH ESI
00422076 8BF2                MOV ESI,EDX
00422078 8BD8                MOV EBX,EAX
0042207A 85DB                TEST EBX,EBX
0042207C 74 0D              JE SHORT Project1.0042208B
0042207E 8BD6                MOV EDX,ESI
00422080 8B03                MOV EAX,DWORD PTR DS:[EBX]
00422082 E8 8D000000

```

CALL [Project1.@System@TObject@InheritsFr](#)

```

00422114 EB 02              JMP SHORT Project1. 00422118
00422116 8B00                MOV EAX,DWORD PTR DS:[EAX]
00422118 39D0                CMP EAX,EDX
0042211A 74 08              JE SHORT Project1.00422124

```

**Table 1.**

*Number of functions and subprograms used in determining of inter-frame difference of 2 images*

	C++ Builder 6	Microsoft VisualS tudio
Total number of functions and subprograms	126	-
Number of internal functions and subprograms	93	-
Number of API functions	13	-
Processing time, ms	828	15

Thus, it follows from the results of studies that programming environment C++ Builder-6 creates software units with very high redundancy of machine code (the total number of subprograms is 126), which makes them inefficient and unsuitable for real time image processing. Moreover, if we include speed optimization, it virtually has no effect on the speed of inert-frame difference formation.

The research had shown that the machine code of program unit that was created in Microsoft Visual Studio had a low redundancy because it do not contain any subroutines and functions. It allows to increase the imaging processing speed of more than 55, compared with C++ Builder-6, this result indicate that Microsoft Visual Studio is a much higher efficiency. Further increasing the speed of image processing can be get with assembler software units that is the subject of further research.

#### REFERENCES:

1. Bruno Babe. Prosto i yasno o Borland C++: Transl. from Eng. – Moscow: BINOM, 1994. – 400 p.

2. Horton Williams. Visual C++ 2005. Base course. Williams, 2007. – 1152p.
3. Davydov V. Visual C++. Razrabotka Windows - applications with MFS and API- function, 2008. – 576 p.
4. Component Object Model. <http://ru.wikipedia.org/wiki/>

## TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGY

### DOLBY DIGITAL PLUS OVERVIEW

*I.A. Morzitsin, Sh.T. Ibragimova*

***Summary.** The article discusses the Dolby Digital Plus as Dolby's next-generation audio technology, which was designed for high-definition programming and media. It combines the efficiency to meet future broadcast demands with the power and flexibility to realize the full audio potential of the upcoming high-definition experience.*

***Keywords:** Dolby Digital, A/V receivers, Surround Sound, High-Definition programming, Next-generation satellite, DVT standard, Audio Channels*

Built on Dolby Digital, the audio standard for DVD and HD broadcasts worldwide, Dolby Digital Plus was designed for the A/V receiver of the future, but remains fully compatible with all current A/V receivers and digital set-top boxes. With Dolby Digital Plus, you get even higher-quality audio, more channels, and greater flexibility. Hear it all with Dolby Digital Plus.

#### ***Section 1. Channels, More Surround Sound***

> With up to 7.1 discrete channels to work with, the audio engineer has the ability to position audio for a more realistic effect than ever before. The result is a more exciting experience for you-an enhanced sensation of being in the center of the action.

## ***Sound Like You've Never Heard Before***



> The demands of audio and video delivery and storage systems are changing radically, and Dolby Digital Plus was designed specifically to meet these existing and future challenges. For high-definition programming, disc-based media, and online content, Dolby Digital Plus offers higher bit rates, more channels, and a whole new level of interactivity for advanced systems-including streaming and mixing of online content. The coding efficiencies of Dolby Digital Plus allow you to enjoy a stunning level of audio quality without sacrificing disc space for additional entertainment content. Dolby Digital Plus is based on sophisticated new extensions to Dolby Digital perceptual coding technology. With data rates reaching into the 3 Mbps range, Dolby Digital Plus is ideal for higher-bandwidth HD disc environments.



Dolby Digital Plus makes it possible for HD disc formats to deliver the new channels destined for next-generation digital cinema presentations. This allows home theaters to provide a cinema-quality listening experience. And the improved efficiency of Dolby Digital Plus enables an exciting new feature that enhances the home entertainment experience: streaming online content with simultaneous disc playback. This feature will allow you to watch a movie on a disc while listening to narratives from the director or producer streamed directly from the studio's website, mixed in with the disc's audio. With the emergence of portable media devices, such as video players, you can take the show on the road-in the car or wherever your lifestyle dictates.

## ***Broadcasting More for You to Hear***

Combining Dolby Digital Plus with innovative new video codecs, broadcasters can now deliver more channels and offer a much wider selection of exciting, high-quality video with surround sound programming. Dolby Digital Plus offers more efficient bit rates for systems where bandwidth is at a premium, such

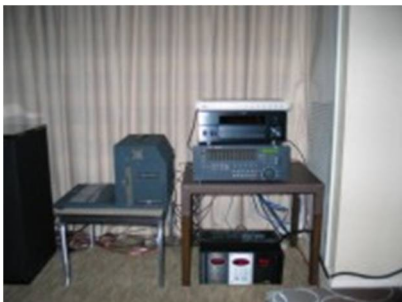
as next-generation satellite, cable, and broadcast systems. For those broadcasters with extra bandwidth, Dolby Digital Plus offers enhanced channel and quality capabilities for the new packaged media formats. In fact, the ATSC has approved Dolby Digital Plus as part of the DTV standard for future robust transmission mode for E-VSB broadcast applications.

### *Compatibility*



> Designed for the A/V receiver of the future, Dolby Digital Plus remains fully compatible with all existing multichannel audio systems that incorporate Dolby Digital. For compatibility with existing 5.1 playback systems, high-definition discs using high-bit-rate

Dolby Digital Plus for up to 7.1 channels will carry a core 5.1 soundtrack that HD DVD players will output as a Dolby Digital signal via a S/PDIF connector. Dolby Digital Plus also provides the potential for higher-quality Dolby Digital audio playback. The Dolby Digital encoder outputs a 640 kbps Dolby Digital signal, providing legacy receivers the possibility of higher audio quality than the 448 kbps Dolby Digital soundtracks featured on standard-definition DVD-Video discs. The DVD Forum has selected Dolby Digital Plus as a mandatory audio feature for the HD DVD. Dolby Digital Plus has also been selected by the Blu-ray Disc Association as an optional audio feature for the Blu-ray Disc.



We had a chance to hear Dolby Digital Plus and were impressed with the clarity of the vocals and surround mix. The demo was done in a smallish room using Definitive Technologies speakers. We saw a

scene where FDR was about to go onto stage and was whispering to an assistant. The way you could clearly hear the whispering without losing the crowd was pretty amazing. There was a scene from *Serenity* where the Reavers first chase down the crew. Even with all the action, explosions, yelling, and music, every effect was

clear and discernible. Overall, it was a very eye opening demo. We look forward to hearing more in the future.

### ***Section 2. Features***

- Multichannel sound with discrete channel output.
- Channel and program extensions can carry multichannel audio programs of up to 7.1 channels\* and support multiple programs in a single encoded bitstream.
- Outputs a Dolby Digital bitstream for playback on existing Dolby Digital systems.
- Bit-rate performance of up to 6 Mbps (limited to 3 Mbps on HD DVD and 1.7 Mbps on Blu-ray Disc).
- Reproduces what the director and producer intended you to hear.
- Interactive mixing and streaming capability in advanced systems.
- Supported by the HDMI™ (v.1.3) interface, the new single-cable digital connection for high-definition audio and video.
- Chosen as a mandatory audio feature for HD DVD and as an optional audio feature for the Blu-ray Disc.

### ***Benefits***

- Can deliver up to 7.1 channels of enhanced-quality audio. Allows multiple languages to be carried in a single bitstream.
- Offers audio professionals new creative power and freedom.
- Compatibility with the millions of Dolby Digital home entertainment systems.
- No latency or loss of quality in conversion process.
- Maintains high quality at more efficient broadcast bit rates (< 320 kbps for 5.1-channel audio).
- HDMI eliminates the confusion and complexity of multiple cords by supporting single-cable digital connections.

- Approved by the Advanced Television Systems Committee (ATSC) as part of the DTV standard for robust transmission mode for E-VSB; defined as an option by the Digital Video Broadcasting (DVB) Project for satellite and cable TV.

### ***Dolby Digital Plus and Industry Adoption***

That's changing the paradigm. Back in 2010, Netflix announced that it would be streaming Dolby Digital Plus with its HD streaming content. Around the same time, VUDU also announced it would be using Dolby Digital Plus streaming for its movies (in fact, they announced 7.1 support a year later). That was a boon for home theater owners streaming the service through connected Blu-ray players, televisions and gaming systems.

And what's really exciting is that Dolby Digital Plus is *completely backwards-compatible* with Dolby Digital. So older AV receivers can still get 5.1 surround from an encoded Dolby Digital Plus streaming source, provided it gets the audio via its digital coax or digital optical input. For modern AV receivers and televisions, anything with HDMI 1.3 or higher connections will decode Dolby Digital Plus just fine.

Some of the Technical Features of Dolby Digital Plus:

- 1.0 to 7.1 channels of surround sound
- 5.1-channel interactive experience for Blu-ray BonusView and BD-Live
- 7.1-channel support for primary Blu-ray soundtracks
- Backwards-compatibility with Dolby Digital
- Dialogue Enhancer
- Surround Virtualizer creates a surround sound experience through headphones or built-in speakers
- Volume Leveler for eliminating volume jumps across platforms
- Dolby Digital pass-through allows multichannel audio from mobile devices (even if they don't support surround)

- 20-bit/48kHz sample rate
- Data (Blu-ray): 768kbps-1.5 Mbps
- Data (legacy): 640kbps Dolby Digital
- Data (streaming/broadcast): 256kbps

### ***How Mobile Devices Can Benefit from Dolby Digital Plus***

Dolby Digital Plus on mobile devices is exciting for a couple of reasons. One, it allows for virtual surround using the integrated technologies present in the steam. Also, Dolby Digital Plus can be passed-through a mobile device to an AV receiver for true 5.1 surround—even if the mobile device itself cannot support multi-channel playback. This embedded technology is one way in which this surround format has the capability to enrich streaming media well beyond the typical restraints of stereo video channels.

### ***Codec changes***

The codec used by Dolby Digital Plus is based on the original Dolby Digital codec, but with several enhancements to improve coding efficiency:

- Transient pre-noise processing - to reduce "pre-noise" artifacts before sharp transients.
- Enhanced channel coupling – which maintains phase relationships between channels, and improves performance of matrix decoders.
- Adaptive hybrid transform processing – an improved bit allocation and quantization algorithm.

Dolby claims that these changes can result in bitrate improvements of up to 50% while still allowing for the signal to be efficiently converted to Dolby Digital for backwards compatibility.

### ***Section 3. Specifications***



Dolby Digital Plus is capable of the following:

- Coded bitrate: 0.032 to 6.144 Mbit/s
- Audio Channels: 1.0 to 13.1 (i.e. from mono to 13 full range channels and a low frequency effects channel)
- Sample rate: 32, 44.1 or 48 kHz
- Bit depth: up to 24 bits per channel.

The full set of technical specifications for E-AC-3 is published in Annex E of [ATSC A/52B](#), as well as in [ETSI TS 102 366 V1.2.1 \(2008-08\)](#).

### *Physical transport*

As of 2007, [HDMI](#) 1.3 is the only means to transport a raw DD+ bitstream between two pieces of consumer equipment. The older and more widespread [S/PDIF](#) interface cannot directly transport DD+ bitstreams. A number of methods of transcoding exist to convert an E-AC-3 bitstream into a S/PDIF compatible bitstream. See the section below on [downmixing](#).

### *HD DVD and Blu-ray*

The maximum number of discrete coded channels is the same for both formats: 7.1. However, HD DVD and Blu-ray impose different technical constraints on the supported audio-codecs. Hence, the usage of DD+ differs substantially between HD DVD and Blu-ray.

**Dolby Digital (AC-3) and Dolby Digital Plus (E-AC-3) bitrate comparison**

Codec	HD DVD			Blu-ray		
	Decoding	Channels	Bitrate	Decoding	Channels	Bitrate
<b>AC-3</b>	mandatory	1 to 5.1	504 kbit/s	mandatory	1 to 5.1	640 kbit/s
<b>E-AC-3</b>	mandatory	1 to 7.1	3.0 Mbit/s	optional, available for rear channels only	6.1 to 7.1	1.7 Mbit/s
<b>TrueHD</b>	mandatory optional	1 or 2 3 to 8	18.0 Mbit/s 18.0 Mbit/s	optional	1 to 8	18.0 Mbit/s

On HD DVD, DD+ is designated a mandatory audio codec. An HD DVD movie may use DD+ as the primary (or only) audio track. An HD DVD player is

required to support DD+ audio by decoding and outputting it to the player's output jacks. As stored on disc, the DD+ bitstream can carry for any number of audio channels up to the maximum allowed, at any bitrate up to 3.0 Mbit/s.

On Blu-ray Disc, DD+ is an optional codec, and is deployed as an extension to a "core" AC-3 5.1 audiotrack. The AC-3 core is encoded at 640 kbit/s, carries 5 primary channels (and 1 LFE), and is independently playable as a movie audio track by any Blu-ray player. The DD+ extension bitstream is used on players that support it by replacing the rear channels in the 5.1 setup with higher fidelity versions, along with providing a possible channel extension to 6.1 or 7.1. The complete audio track is allowed a combined bitrate of 1.7 Mbit/s: 640 kbit/s for the AC-3 5.1 core, and 1 Mbit/s for the DD+ extension. During playback, both the core and extension bitstreams contribute to the final audio-output, according to rules embedded in the bit stream metadata.

#### **INTERNET RESOURCES:**

1. [www.en.wikipedia.org/wiki/HDMI](http://www.en.wikipedia.org/wiki/HDMI)
2. [http://www.webopedia.com/TERM/D/Dolby\\_Digital\\_Plus.html](http://www.webopedia.com/TERM/D/Dolby_Digital_Plus.html)
3. <http://www.audioholics.com/trade-shows/2006-cedia-expo/dolby-digital-plus-overview>
4. [www.audioholics.com/hdtv-formats/audioholics-hdmi-1-3-q-a](http://www.audioholics.com/hdtv-formats/audioholics-hdmi-1-3-q-a)
5. <http://computingondemand.com/what-is-the-deal-with-hdmi-1-4/>
6. <http://pc-codecs.com/324-dolby-digital-plus.html>

#### **WIRELESS SENSOR NETWORKS AND THEIR APPLICATIONS**

*A.A. Rasulov, H.U. Aliev, N.A. Atashikova*

*Summary.* Military surveillance, home health care or assisted living, and environmental science are three major application areas for wireless sensor

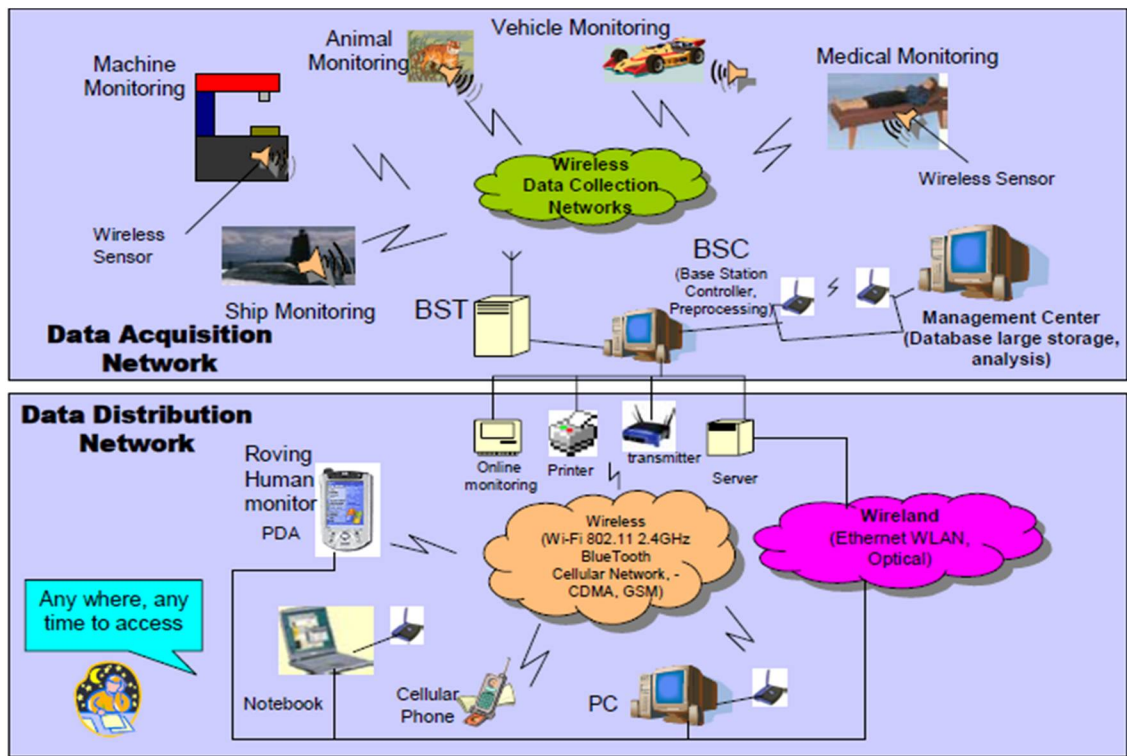
*networks. Revolutionary changes are possible in these areas by using wireless sensor networks. To show the breadth and advantages of wireless sensor networks, design and implementation details are presented for three systems, one in each of these three application domains. Key research challenges and the approaches taken to address them are highlighted. Challenges requiring significantly improved solutions are also identified. These systems and others like them provide significant evidence for the utility of wireless sensor networks.*

**Key words:** *WSN, smart sensors, architecture, node, smart applications*

Nowadays buildings, utilities, industrial, home, shipboard, and transportation systems automation need to next development step which represented by smart environments. Like any sentient organism, the smart environment relies primarily on sensory data from the real world. Multiple sensors of different modalities in distributed locations send sensory data. The smart environment needs information about its surroundings as well as about its internal workings.

### **1. Wireless sensor networks**

In buildings, utilities, industrial, home, shipboard, transportation systems automation, or elsewhere the sensor networks are the key to gathering the information needed by smart environments. Recent terrorist and guerilla warfare countermeasures require distributed networks of sensors that can be deployed using, e.g. aircraft, and have self-organizing capabilities. In such applications, running wires or cabling is usually impractical. A sensor network is required that is fast and easy to install and maintain.



*Figure 1. The complexity of wireless sensor networks*

Distributed Wireless Sensor Networks provide the information needed by smart environments, which are responsible for sensing as well as for the first stages of the processing hierarchy. The importance of sensor networks is highlighted by the number of recent funding initiatives, including the DARPA SENSIT program, military programs, and NSF Program Announcements.

It can be shown from the figure of wireless sensor networks, which generally consist of a data acquisition network and a data distribution network, monitored and controlled by a management center. The plethora of available technologies makes even the selection of components difficult, let alone the design of a consistent, reliable, robust overall system.

### **1.1. IEEE 1451 and Smart Sensors**

Wireless sensor networks satisfy these requirements. Desirable functions for sensor nodes include: ease of installation, self-identification, self-diagnosis,

reliability, time awareness for coordination with other nodes, some software functions and DSP, and standard control protocols and network interfaces.

There are many sensor manufacturers and many networks on the market today. It is too costly for manufacturers to make special transducers for every network on the market. Different components made by different manufacturers should be compatible. Therefore, in 1993 the IEEE and the National Institute of Standards and Technology (NIST) began work on a standard for Smart Sensor Networks. IEEE 1451, the Standard for Smart Sensor Networks was the result. The objective of this standard is to make it easier for different manufacturers to develop smart sensors and to interface those devices to networks.

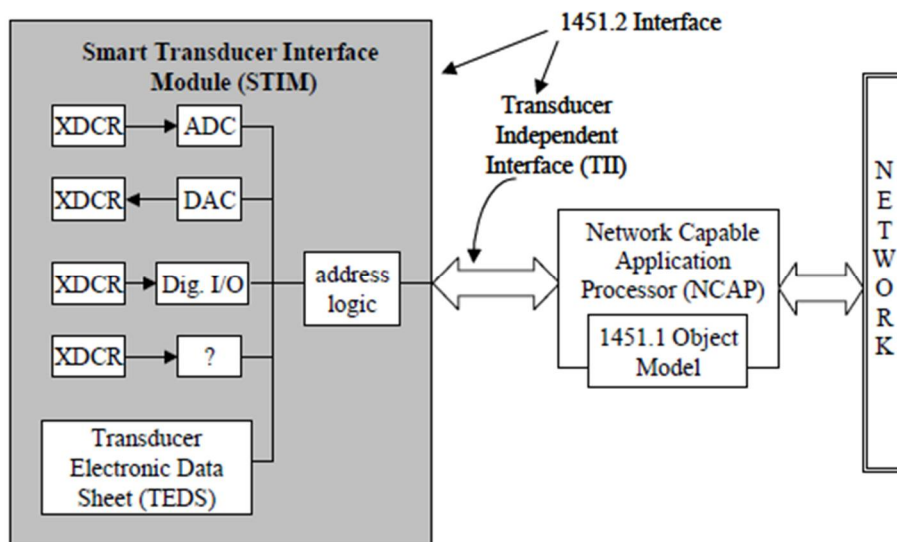


Figure 2. The IEEE 1451 Standard for Smart Sensor Networks

**Smart Sensor, Virtual Sensor.** As it can be shown from the figure.3 the basic architecture of IEEE 1451, that the major components include STIM, TEDS, TII, and NCAP as detailed. A major outcome of IEEE 1451 studies is the formalized concept of a Smart Sensor. A smart sensor is a sensor that provides extra functions beyond those necessary for generating a correct representation of the sensed quantity. Included might be signal conditioning, signal processing, and decision-making/alarm functions. A general model of a smart sensor is shown in the figure. Objectives for smart sensors include moving the intelligence closer to

the point of measurement; making it cost effective to integrate and maintain distributed sensor systems; creating a confluence of transducers, control, computation, and communications towards a common goal; and seamlessly interfacing numerous sensors of different types. The concept of a Virtual Sensor is also depicted. A virtual sensor is the physical sensor/transducer and the associated signal conditioning and digital signal processing (DSP) required to obtain reliable estimates of the required sensory information. The virtual sensor is a component of the smart sensor.

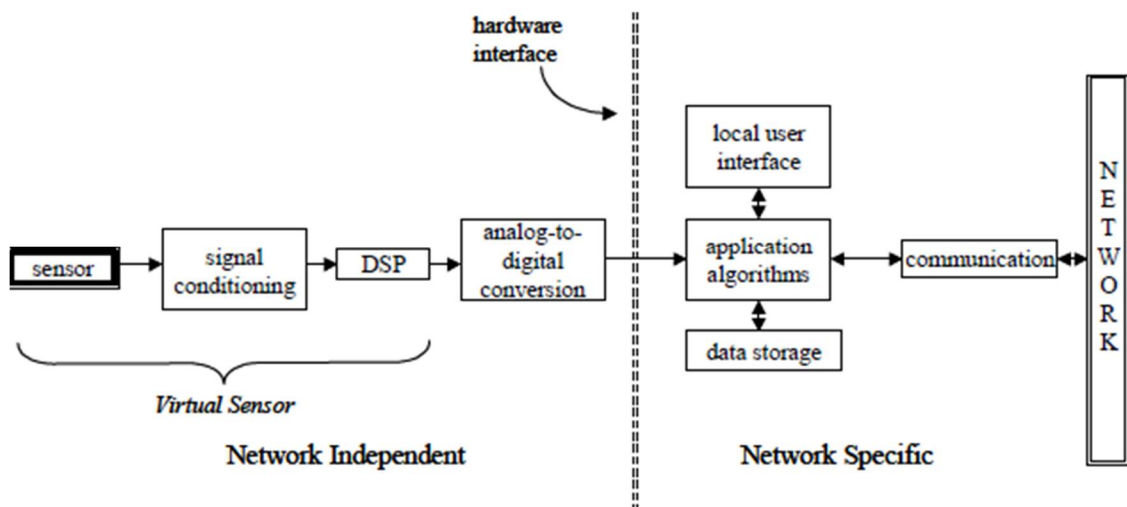


Figure 3. A general model of a smart sensor

## 2. WSN simulation model

The models include new components, not present in classical network simulators, as detailed power and energy consumption models or environment models. This section describes a general component model, for WSN simulation tools. This model is suitable for most of the evaluation tools employed in on-going research on WSN.

### 2.1. Network model

The general model at a network-wide scale is considered:

1) Nodes: Each node is a physical device monitoring a set of physical variables. Nodes communicate with each other via a common radio channel. Internally, a protocol stack controls communications. Unlike classical network

models, sensor nodes include a second group of components: The physical node tier, which is connected to the environment. Nodes are usually positioned in a two or three-dimensional world.

2) Environment: The main difference between classical and WSN models are the additional “environment” component. This component models the generation and propagation of events that are sensed by the nodes, and trigger sensor actions, i.e. communication among nodes in the network. The events of interest are generally a physical magnitude as sound or seismic waves or temperature.

3) Radio channel: It characterizes the propagation of radio signals among the nodes in the network. Very detailed models use a “terrain” component, connected to the environment and radio channel components. The terrain component is taken into consideration to compute the propagation as part of the radio channel and influences the physical magnitude.

4) Sink nodes: These are special nodes that, if present, receive data from the net, and process it. They may interrogate sensors about an event of interest. The use of sinks depends on the application and the tests performed by the simulator.

5) Agents: A generator of events of interest for the nodes. The agent may cause a variation in a physical magnitude, which propagates through the environment and stimulates the sensor. This component is useful when its behavior can be implemented independently from the environment, e.g., a mobile vehicle. Otherwise, the environment itself can generate events.

## **2.2. Node model**

Node behavior depends on interacting factors that cause cross-layer interdependencies. A convenient way to describe it is to divide a node into abstract tiers, as represented in Figure 4.

- The *Protocol-tier* comprises all the communication protocols.

Typically, three layers coexist at this tier: A MAC layer, a routing layer and a specific application layer. Note that the operation of the protocol tier usually depends on the state of the physical tier described below, e.g. a routing layer can

consider battery constraints to decide on packet route. Hence, an efficient method to interchange tier information must be developed.

- The *physical-node* tier represents the hardware platform and its effects on the performance of the equipment.

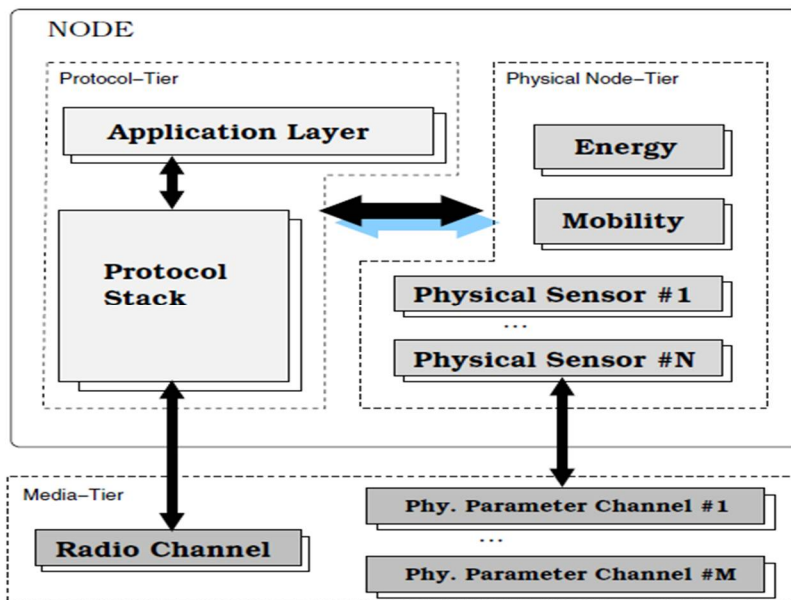


Figure 4. Tier-based node model

Actual composition of this tier may change depending on the specific application. The common elements of this tier are the set of physical sensors, the energy module and the mobility module. Physical Sensors describe the behavior of the monitoring hardware. Energy module simulates power consumption in the component hardware, a critical issue in WSN evaluation. Mobility module controls sensor position.

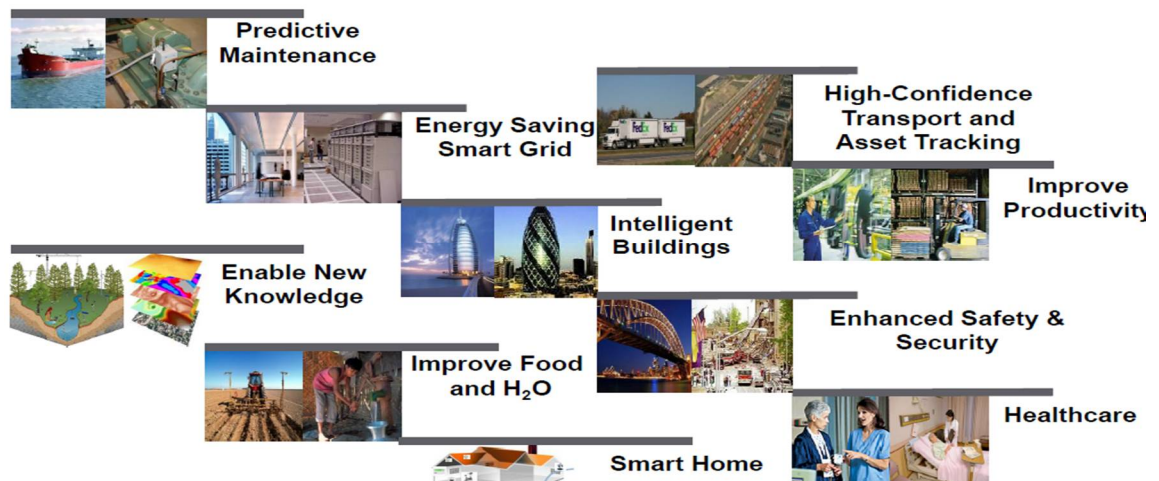
- The *media-tier* is the link of the node with the “real world”. A node is connected with the environment through: (1) A radio channel, and (2) through one or more physical channels. Physical channels receive environmental events.

### 3. Applications of wireless sensor networks

Wireless sensor networks (WSN) is an important and exciting new technology with great potential for improving many current applications in medicine, transportation, agriculture, industrial process control, and the military as well as



creating new revolutionary systems in areas such as global-scale environmental monitoring, precision agriculture, home and assisted living medical care, smart buildings and cities, and numerous future military applications. In fact, it is difficult to consider any major application area that cannot benefit from WSN technology. Typically, WSN are composed of large numbers of minimal capacity sensing, computing, and communicating devices and various types of actuators. WSN operate in complex and noisy real world, real-time environments. To date, research and real-world implementations have produced many excellent low level mechanisms and protocols to collect, transport, perform sensor fusion of this raw data and react with control actions.



*Figure 5. Examples of WSN applications*

Nowadays wireless sensor networks are connected with internet or other data communication networks. Modern wireless sensor networks are part of IMS-NGN networks. They work with different types of objects or systems, collect and sent information for the different DB servers. For communication and data transportation services WSN use IP core networks. Different sensor network services we use different type of network access gateways and data collection servers (figure 6).



Figure 6. NGN based wireless sensor networks

Wireless sensor networks are entering a second generation. The first generation has seen many new research challenges being defined and solved. This has resulted in many interesting systems being implemented. New challenges have emerged for second-generation wireless sensor networks including: creating knowledge from raw data, robust system operation, dealing with openness and heterogeneity, security, privacy, real-time, and control and actuation. This is not a complete list of challenges, but these do constitute some of the major challenges as wireless sensor networks become widespread and move into many other application domains such as agriculture, energy, and transportation.

The study of wireless sensor networks is challenging in that it requires an enormous breadth of knowledge from an enormous variety of disciplines. The WSN can be used in the entire sphere (transportation, industrial, agriculture and etc.). The simulation study of this subject can be done with using the simulation programs like OMNET ++. Simulation is an essential tool to study Wireless Sensor Networks due to the unfeasibility of analysis and the difficulties of setting up real experiments.

## REFERENCES:

1. F. L. LEWIS. Wireless Sensor Networks. Associate Director for Research Head, Advanced Controls, Sensors, and MEMS Group Automation and Robotics Research Institute, 2007.
2. E. Altman, T. Basar, T. Jimenez, and N. Shimkin, “Competitive routing in networks with polynomial costs,” IEEE Trans. Automat. Control, vol. 47, no. 1, pp. 92-96, 2002.
3. R. Bronson and G. Naadimuthu, Operations Research, 2 ed., Schaum’s Outlines, McGraw Hill, New York, 1997.
4. N. Bulusu, J. Heidemann, D. Estrin, and T. Tran, “Self-configuring localization systems: design and experimental evaluation,” pp. 1-31, ACM TECS special Issue on Networked Embedded Computing, Aug., 2002.
5. C.W. de Silva, Control Sensors and Actuators, Prentice-Hall, New Jersey, 1989.
6. Realistic Applications for Wireless Sensor Networks. John A. Stankovic, Anthony D. Wood, Tian He, 2003.

### 3D MODELING ON SMART DEVICES

*H. Shoraimov, F.Musaeva*

***Summary.** The following article is dedicated to the 3d modeling on smart devices. Lightweight and portable design makes smart devices ideal for use. Smart devices as a key component of technology. Several methods of sketch-based modeling. Functions for 3D modeling.*

***Keywords:** smart device, multi-touch, gesture, 3D modeling, cad.*

In recent years, smart devices in the form of smartphones and smart pads have become widely available with the development of networks, the miniaturization of the Central Processing Unit (CPU), and the advancement of mobile technology. Smart devices are equipped with several built-in sensors, including cameras, and

allow intuitive inputs via a capacitive touch screen. In addition, wireless networks are available through various paths, such as Wi-Fi, 3G, Long-Term Evolution (LTE) and Bluetooth. The lightweight and portable design makes smart devices ideal for use.

Technologies are being extensively developed with the advancement of smart devices. Due to the great convenience and diverse applications offered by these devices, many studies on the application of smart devices to various fields such as industry, defense, and education, are underway. Active investments are also expected as there are numerous opportunities to apply smart devices to industries.

In the field of CAD (Computer-Aided Design), there has been some effort to apply recent technology i.e., smart and ubiquitous technology. It is expected that mobile communications, ubiquitous sensing and computing technology, smart reasoning and agent-based computing, natural interaction techniques and other such technology will play a part in forming the paradigm of next-generation CAD/E systems and environments. Thus, various studies of CAD have been done in recent years. Research in the CAD field includes system architecture studies for human-centered CAD agent systems, new CAD interface studies using a brain-computer interface, studies that combine CAD and augmented reality environments, as well as the digital signal processing studies for networking and sensing.

Smart devices also can be a key component of technology for the next generation CAD/E systems. In particular, when engineers use 3D modeling in product design, smart devices can be employed to make 3D models of new design drawings. If an engineer has a new idea while traveling or when on the move, or in the case of collaboration between more than two engineers, smart devices allow modeling to be done in a more rapid, simple, and easy manner. As such, we propose a 3D CAD system for use on smart devices.

Smart devices have only recently been developed, but there are many studies on pen gesture inputs (one-point touch) as touch-enabled devices have been around

since the 2000s. These concepts fall under the concept of sketch-based modeling. There are several methods of sketch-based modeling; the most efficient among them can vary according to the shape of the target models, the method of user interaction, and depending on several limitations. Sketch-based modeling can be divided into two methods; the first is gestural modeling, and the second is reconstructive modeling. Gestural modeling refers to the process of interpreting sequential strokes as specific modeling functions and creating a model by a pre-defined method. Reconstructive modeling is the process of considering an entire set of stroke inputs as a projected image of a 3D model, and creating a model using geometric regeneration technology. From a design perspective, reconstructive modeling is intuitive and effective for sketching ideas. However, the entire set of strokes is interpreted; therefore, it is difficult to recognize complex models correctly and modify a model because the modeling process is not saved. On the other hand, in gestural modeling, the user can understand the modeling process and modify models by repeating the input gestures. Therefore, in this research, we focus on gestural modeling in order to create editable 3D models that can be modified at a later point in time.

Currently, it is possible to have two or more simultaneous touch inputs (known as multi-touch input) using a capacitive touch-screen. Past pen-input methods were only able to accept one-point inputs. Thus, the multi-touch method is more diverse and scalable.

There are many functions for 3D modeling, including modeling functions and manipulating functions.

It is inefficient to implement every function onto smart devices because each commercial CAD system has slightly different types of functions and because the vast number of functions cannot all be accounted for. The conditions for defining the subset are as follows:

1. if a shape created using a function can be created using another function, the two functions are integrated into a single function;

2. when integrating, the function with a higher frequency of use is chosen;
3. functions that produce complex shapes and with a low frequency of use are excluded;
4. functions that are not generally used as a reference to make another feature are excluded to reduce the level of complexity

In this article, I showed a CAD modeling system for the smart device environment. The major contribution of this study is that i proposed the first-ever system design of a 3D CAD system available on a smart device with. Moreover, the system supports additional fine modifications of 3D models in the PC environment based on a macro-parametric approach.

Using the proposed system, users can create 3D models on smart devices quickly and easily. In addition, engineers can model their ideas in collaborative environments or even outdoors, making it possible to shorten the design time. More general industrial models should be tested in further experiments. In addition, user tests should be performed, including comparisons of the running/modeling times of CAD systems on smart devices with those on PCs.

Furthermore, considering how smart devices are equipped with several built-in sensors, such as an inertial sensor and camera, a multi-modal method can be used to input a wider variety of operations with greater accuracy and ease.

In addition, if real-time synchronization among multiple devices can be enabled while the system is running on a network, a more effective collaboration environment for design can be expected.

#### **INTERNET RESOURCES:**

1. [www.autodesk.com](http://www.autodesk.com)
2. [www.wikipedia.org/wiki.ru](http://www.wikipedia.org/wiki.ru)
3. [www.3dwww.graphics.com](http://www.3dwww.graphics.com)
4. <http://www.csu.edu>

#### **IV SECTION– TELECOMMUNICATION TECHNOLOGIES**

### **PROJECTING THE DATABASE OF MOBILE APPLICATIONS, DEFINES RELIABILITY INFORMATION FOUND ON THE INTERNET**

***Kh. Abdullayeva, Kh. Sultanova***

***Summary.*** *This paper describes the stages of database design a mobile application that determines the accuracy of the information found on the Internet.*

***Keywords:*** *database, server, client, the session user.*

Today it is difficult to imagine anyone without a cell phone, a tablet computer, smart phone or any other portable media devices. We are accustomed to, which is always at hand is not only a means of communication, but also many useful features such as calculator, organizer, converter, calendar, clock. Smartphones are the new mobile gaming platform, competing with the classic handheld gaming systems like the Nintendo DS or PlayStation Portable.

The device smartphone's pretty simple. Mostly it consists of several separate blocks - memory, CPU, which deals with computing, data storage, radio, which in turn consists of a transmitter and receiver and is responsible for communication. The most interesting thing here - the operating system installed on the internal memory. The operating system and version depend all the main features of the device. Smartphones, as well as personal computers, there are a completely different trim levels and different operating systems, varieties of which will be discussed further. [1:65-68]

With the increase of sales of mobile devices worldwide growing demand for various applications for them. Every self-respecting company aims to have at least one mobile app to be at his client "is always at hand." And there are some companies and all difficult to imagine without the mobile devices and specialized

programs, with which you can, for example, manage databases, or monitor the status of their product on the market at any given time.

Android - an operating system with open source software for handheld devices based on the kernel Linux. Android is a popular platform for smartphones, communicators, as well as a variety of tablet PCs, personal media players and other portable electronic devices. At the moment, the Android OS running on a variety of platforms, including the usual handheld, ARM processor family and ordinary classical computers, processors x86. In addition to them, Android also supports MIPS processor family and POWER.

When you use the user operates multiple desktops. Development of the screens used by the application, based on the interaction of several objects, such as: background, informational text, input field, flag and switches. The arrangement of objects is determined by the specified coordinates.

Screens in the application calls in a particular order, according to the user's actions. More clearly scheme of interaction screens is shown in Figure 1.

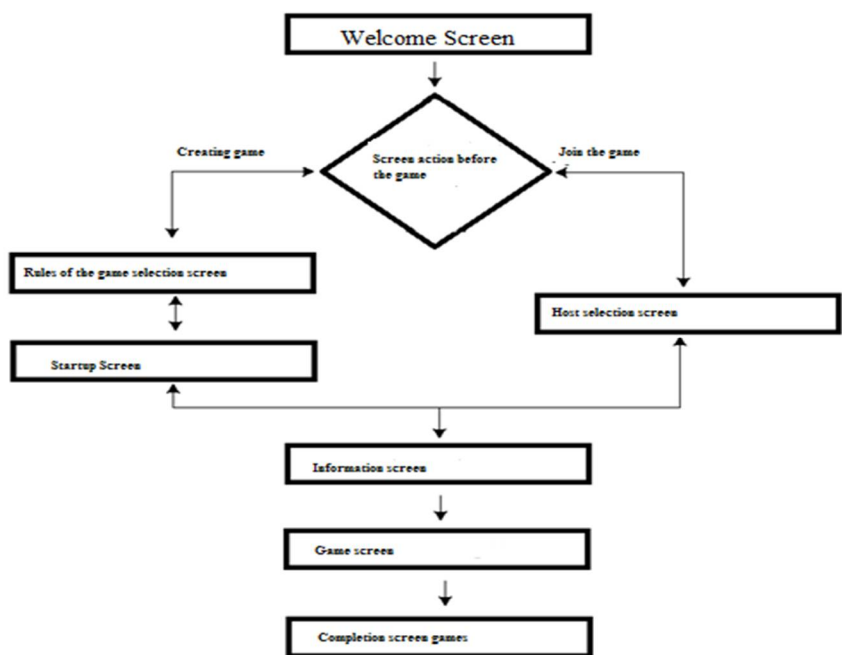


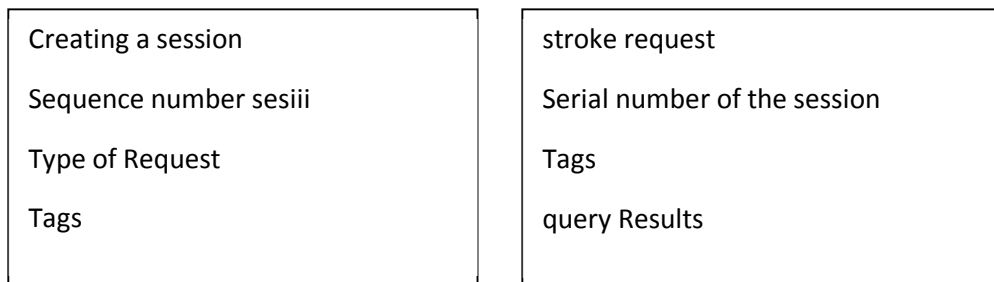
FIG.1 - Scheme of interaction screens

When the application starts initiated checking for Internet access. If there is no access, a message appears and the application quits. If there is internet



connection, loaded the welcome screen and expected input parameters from the user. [2:25-27]

To query a user creates a database with two entities.

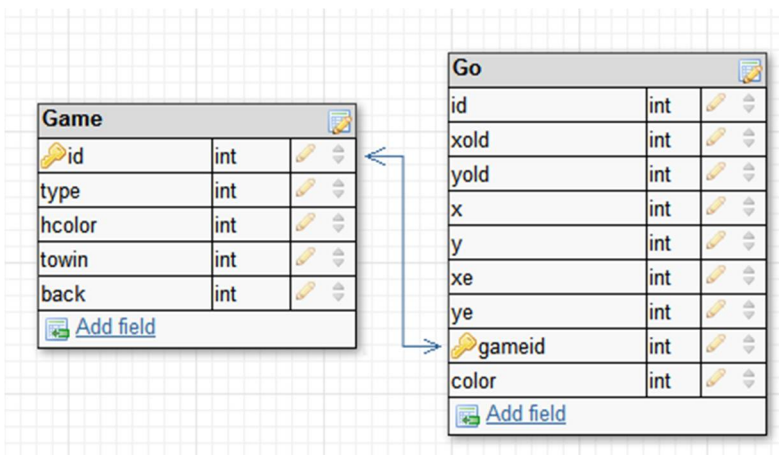


Since each game has its own set of moves, entities have the type of communication - one-to-many. That is the essence of the "Create Game" is a parent, and the essence of "The course of the game" is a subsidiary. That shown in Figure 2.



FIG.2 - Contact Database

The database schema was created using the online generator, created by developers at Google. This service greatly simplifies the process of creating a database. Draw a diagram in the GUI, as shown in Figure 3, the program generates a set of queries to create the database.



### *Figure 3. Database Tables*

The tables shown in Figure 3, contains the variables needed to create the game. Game table contains variables such as the type of game, the color of the host and the number of games to win or whether to cut back. Go Table is needed to pass parameters to travel between clients.

Creating a game or making a move, the user initiates a class that refers to the php-script on the server. [3:78-84] Depending on the setting, which is accessed, the script writes or reads the tables and Game Go.

### **REFERENCES:**

1. Pro Android 2. S. Hashemi S., Komatineni D., McLean, Peter, 2011. – Pp.65-68.
2. Professional Android 2: Application Developmentecond Edition, Reto Meier, Exmo 2011. – Pp. 25-27.
3. Android: Application Development in 24 Hours, Lauren Darcy, Shane Conder, Reid Group, 2011. – Pp.78-84.

### **SMART TRAFFIC LIGHTS**

*S. Adukhalilov, D. Dilmurodov, M. Yusupova*

***Summary.** The following article is devoted to Smart Traffic Lights. In addition, the problem of traffic jams is considered.*

***Key words:** Smart traffic light, traffic jump, traffic detector, Coordination Plan, cameras, microcontroller.*

"Smart" traffic lights - intelligent traffic control system. Traffic light is controlled by an intelligent system that analyzes traffic at an intersection using vision sensors, the press service of the department. On Time "green" traffic light can vary from 30 seconds to a minute. Set at the crossroads of the camera, lights in

addition, a computer that scans the situation at junction every 3 seconds. Data on traffic flow analyzes traffic detectors.



The master controller, installed in a specific area of motion, processes this information. The device builds a forecast of the situation, and on the basis of these data the coordination plan to control traffic lights. For example, if the system detects congestion at one of the directions of movement, it would extend the green light. In the event of unforeseen disruptions, the system switches to offline mode and continues to work on the previously recorded Coordination Plan. Engineers have provided and similar incidents, so the device can be called reliable. It is also possible the use of special weather stations that will collect information about the weather conditions and the state of asphalt. These data will help to adjust speed limits and warn drivers of the adverse conditions at the end of the observation road. After there will be decided when and where will be installed other "smart" traffic

lights. Now, the transport infrastructure in Tashkent is poor, and many road projects require large financial and time resources. In the best case, only in a few years we will get improved transport interchanges and alternative ways to travel, but what do you do in Tashkent now? Out of this situation was quite simple. To solve the problem of traffic jams offered to equip the metropolitan highway "smart" traffic lights, which themselves will be able to adjust the switching signals, depending on the traffic flow. To establish traffic detectors that capture the traffic flows, that is automatically switched to "green" when traffic is dense and «red when it is not. You need 300 such inspectors to cover the entire city "There are all sorts of technologies for detecting cars – everything from [lasers](#) to rubber hoses filled with air! By far the most common technique is the inductive loop. An inductive loop is simply a coil of wire embedded in the road's surface. To install the loop, they lay the asphalt and then come back and cut a groove in the asphalt with a saw. The wire is placed in the groove and covered with a rubber compound. You can often see these big rectangular loops cut in the pavement because the compound is obvious.

Inductive loops work by detecting a change of inductance. To understand the process, let's first look at what inductance is. The illustration on this page is helpful. What you see here is a [battery](#), a [light bulb](#), a coil of wire around a piece of iron (yellow), and a switch. The coil of wire is an [inductor](#). If you have read. [How Electromagnets Work?](#) You will also recognize that the inductor is an electromagnet. If you were to take the inductor out of this circuit, then what you have is a normal flashlight. You close the switch and the bulb lights up. With the inductor in the circuit as shown, the behavior is completely different. The light bulb is a resistor (the resistance creates heat to make the filament in the bulb glow). The wire in the coil has much lower resistance (it's just wire), so what you would expect when you turn on the switch is for the bulb to glow very dimly. Most of the current should follow the low-resistance path through the loop. What happens instead is that when you close the switch, the bulb burns brightly and then gets

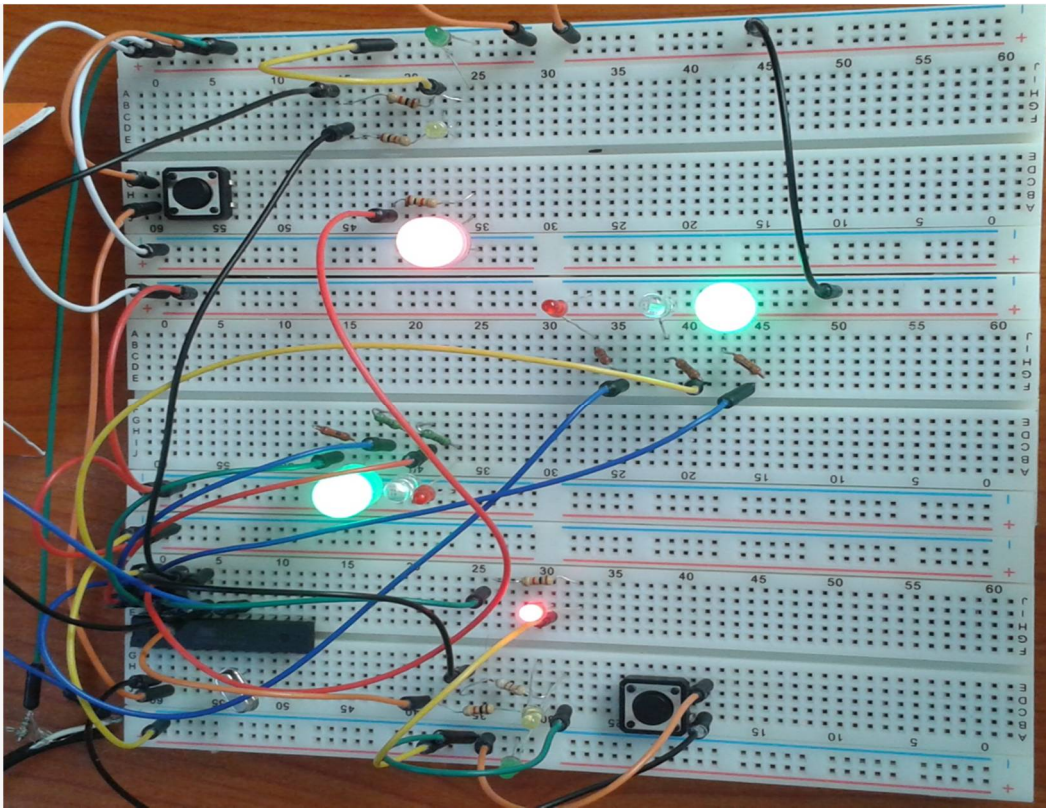
dimmer. When you open the switch, the bulb burns very brightly and then quickly goes out. "The cameras that hang on" smart traffic lights ", is unlikely to scare drivers. Firstly, they are not visible, and secondly, their task is not to fix the speed, and follow the flow of cars. Depending on traffic density, technique decides what color to light: green or red. And in the center of traffic management if necessary - will correct operation of traffic lights. Pedestrians do not respond the smart traffic lights. In the priority transport and people have to wait for the stream of cars do not run out. But if it lights up "green" time out to cross the road enough.

We used video detectors, virtual loops are drawn on the video the first detector monitors the distance between the cars. If, for example, the vehicle enters the special field is marked with, the green light lits for 3 seconds longer. If during this time in the control area would be the next car, while increases again for 3 seconds. But always keep the green light for one direction - it is impossible

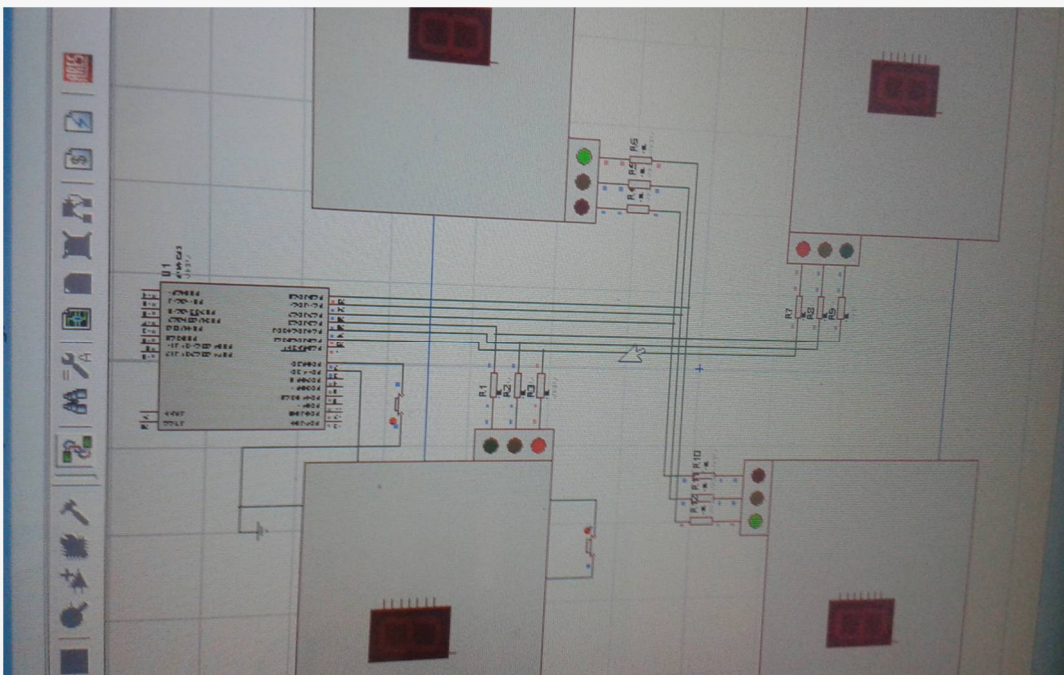
Today in Tashkent has been operating for 150 traffic light zones, which use adaptive traffic control system, simply put, "smart traffic lights." This is an economical and efficient way, which had positively established itself in practice. As statistics show, thanks to this system bandwidth is increased by 30%, and given the relative cheapness and ease of installation is no longer any doubt as to the rational use of the project. You have to understand that this project - not a panacea for the transport problems, but only one of the items of the main program to be applied. Intelligent system for the distribution of transport, will certainly help in resolving this issue, but does not replace the main projects.

We attend to student's first exhibition in TUIT with project.





Real market in lab board.



Virtual market in computer.

# ANALYSIS AND STUDY OF RECONSTRUCTION ACCURACY INTERPOLATION SCALING METHODS

*Z. Ismailova, F.Musayeva*

***Abstract.** This article considers the interpolation methods of scaling, which are necessary for increasing the small images. Image interpolation occurs in all digital photos at some point, whether it demonstration or scaling. It happens every time when you change the size or image scanning from one grid to another pixel*

***Key words:** Interpolation, Bilinear interpolation, Bicubic interpolation, Lancsoz interpolation, B-spline interpolation, Interpolation Guassion, Resampling, Filter.*

It is now widely multimedia technologies develop, including processing of audio, video, graphics, etc. It often becomes necessary to change the format of the image, for example, when switching from format from HD to SD or increase of small images. That is, we solve the problem of scaling images, but simply copying pixels there are significant distortions of magnified images. Therefore, to increase the size of the images are different interpolation methods that compute values do not reach the values of pixels in their environment.

**Interpolation.** This time the forecast values of unknown pixels between the true values of pixels. Image interpolation occurs in all digital photos at some point, whether it scaling. It happens every time when you change the size or image scanning from one grid to another pixel. Changing the image size is necessary when you need to increase or decrease the number of pixels, while the change in position can occur in a variety of circumstances: the correction of lens distortion, changing perspectives or rotate the image.

Currently, there are quite a variety of methods and algorithms for image interpolation is accurate image restoration, complexity and speed of the algorithms, strengths, weaknesses and areas of application. Therefore, we consider the most common interpolation methods in more detail.

The image size can be changed in several ways, the easiest; it may be doubling up the nearest pixel or replacing each pixel of the four pixels of the same color. The resulting image will appear larger than the original, but it takes on a ladder or staircase image effect. Other interpolation methods are better suited to preserve the smooth contours of the image. Such as bilinear, bicubic and of course b-spline interpolation, interpolation Gauss, Lancsoz that are discussed in detail below. The analysis of the literature showed that most of the practical-spread bilinear and bicubic interpolation, which we consider in more detail.

**Bilinear interpolation method.** His idea is to spend the usual linear interpolation in one direction and then in another. That is, he sees a 2x2 square known pixel surrounding known. As the interpolated value is used the average value of the four pixels.

**Bicubic interpolation method.** Bicubic interpolation is often used in image processing, giving a better picture quality compared with bilinear interpolation. In the case of bicubic interpolation, the 16 neighboring points determine value at the desired point. Bicubic goes a step further bilinear interpolation, considering a 4x4 array of 16 surrounding pixels.

Thanks to the program Photoshop we reduced piece of the picture by 2 times and restored it to its original condition using bilinear and bicubic interpolation. If we compare them, we can see that the reduction bilinear method saves had better image quality (Fig.1).



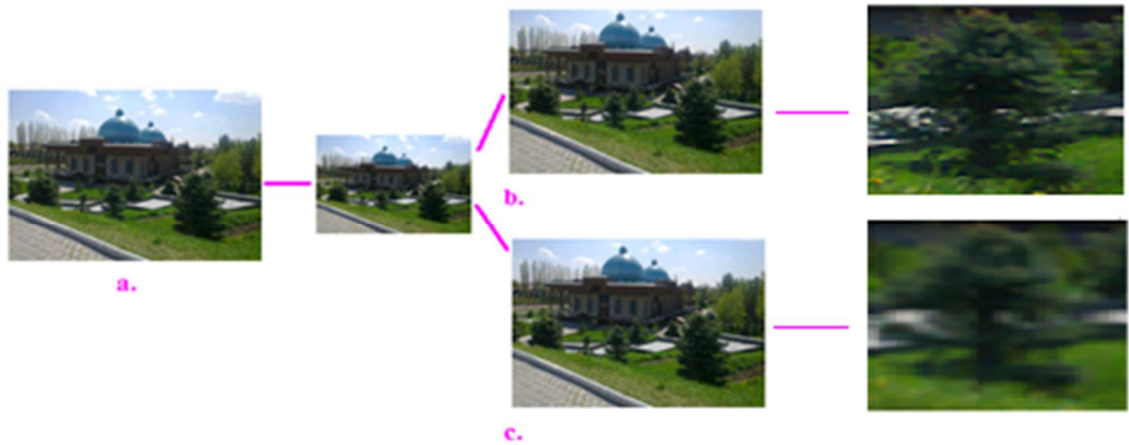


Fig .1. a. The original image and the reconstructed image using b. bilinear and c. bicubic interpolation.

However, there are other interpolation methods, as Lanczos interpolation, B-spline interpolation, Gaussian filter, which are discussed below. They are all considered resampling filters for images. Resampling images essentially are chose again, i.e. in which any part of information is deleted from the image or adds a semi information through interpolation.

**Interpolation Lanczos (Lanczos filter (Lancsoz)).** This type of interpolation also works in digital magnification. It is often used to change the resolution (oversampling) digitized images. Named in honor of the Hungarian scientist Cornelius Lanczos (veng. Láncoz Kornél). In the filter used normalized function

$\sin c(x) = \frac{\sin \pi x}{\pi x}$ . The impulse response is:

$$h(t) = \begin{cases} \sin c(t) \sin c\left(\frac{t}{a}\right); & -a < t < a, t \neq 0 \\ 1; & t = 0 \\ 0; & \text{неизвестно} \end{cases}$$

Applying a filter achieves high-definition images, but with possible artifacts such as ringing. Lines appear around the narrow contrasting area that allows you to keep the sharpness of the lines while maintaining sufficient smoothness of tonal transitions (Fig.2).

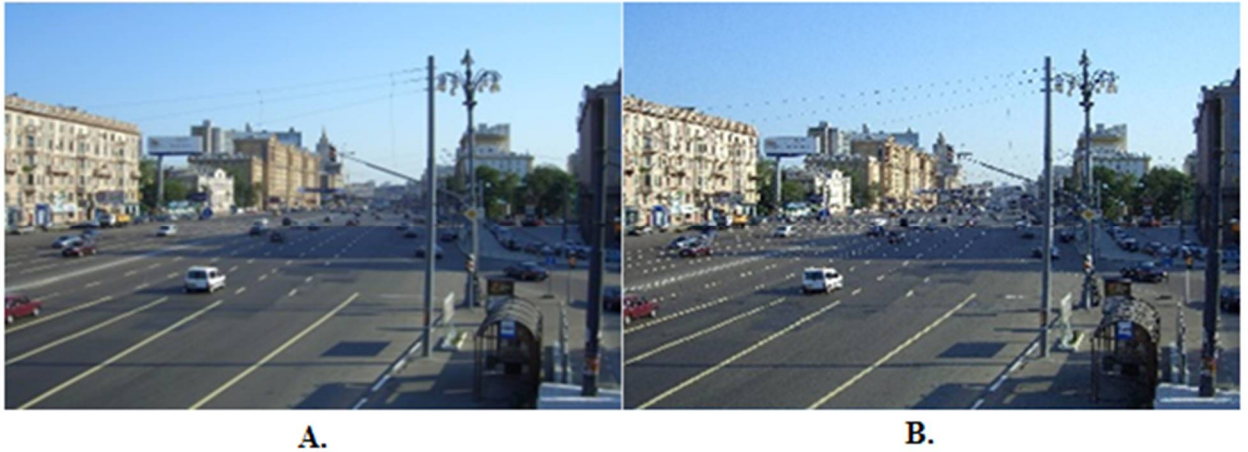


Fig.2. A. Initial and restore the image B. using Lanczos filter.

**B-spline interpolation.** This is representative of the group of so-called "piecewise cubic" algorithms. The term b-spline was introduced I. Schoenberg and a reduction in "basis spline." The term b-spline often describes spline curve, which is defined by spline functions expressed by linear combinations of b-splines. They are used for interpolation functions and basic functions in the construction of such a finite element method. B-spline of degree  $N - 1$  with respect to the defect sites is a function:

$$B_{N-1,n}(t) = B_{N-1}(t_n, t_{n+1}, t_{n+2}, t) = (-1)^N (t_{N+n} - t_n) \sum_{i \rightarrow n}^{n+N} \frac{(t_i - t)_{\max}^{N-1}}{\prod_{j \rightarrow n, j \neq i}^{n+n} (t_i - t_j)}$$

$$(t_i - t)_{\max}^{N-1} = \begin{cases} (t_i - t)^{N-1}, & t \leq t_i; \\ 0, & t > t_i. \end{cases}$$

The reconstructed image by interpolating B- spline can be seen that the image turns out a bit blurry. This method helps to destroy the quality of any other pictures or images (Fig.3).

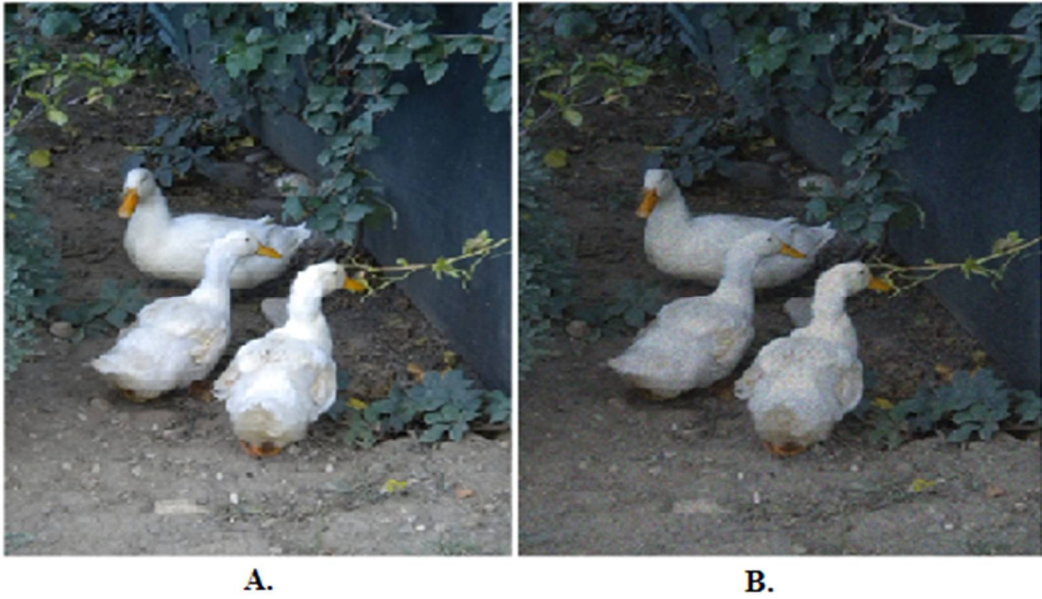


Fig.3. A. Initial and restore the image B. by interpolation B- spline.

**Interpolation Gaussian (Gaussian filter).** Another method of interpolation, it helps to remove, through the application of the Fourier transform, high frequency noise and stair effects that may appear when scaled. Image with the use of this algorithm turns out a little blurry, even with a small scaling factor. Gaussian filter is a linear filter with a Gaussian kernel:

$$K(\xi, \eta) = \frac{1}{2\pi\sigma^2} e^{-\frac{\xi^2 + \eta^2}{2\sigma^2}}.$$

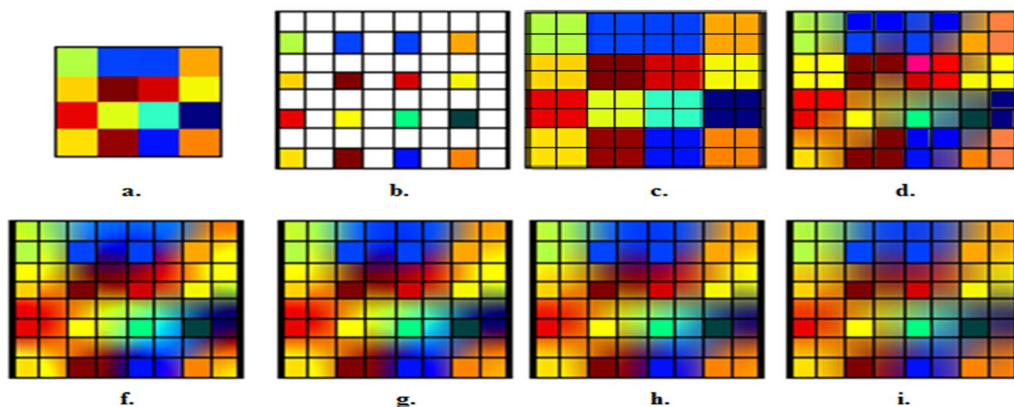
When you restore an image using Gaussian filter can be seen that he did not appear excessive shades of color schemes. , but he also has a distorted as the other methods. In spite of this, it is better to maintain the image quality than other methods (Fig.4.).



*Fig. 4. A. Initial and restore the image B. using Gaussian interpolation*

Evaluate the effectiveness of the algorithms described in the Example 2-fold increase in the test image 4 x 4 pixels (Figure 1). After interpolation, the size of the new image will be 8 x 8 pixels, that is, the total number of pixels in a four-fold increase. For each source pixel will now have four pixels (three plus one new source). If you just paint the three new pixel color pixel base (and this is what happens when the bilinear and bicubic interpolation), this would amount to an increase in the size of the image. In this case, the smooth lines of the contours in the image will become a significant "step". Smooth tonal transitions will also be broken.

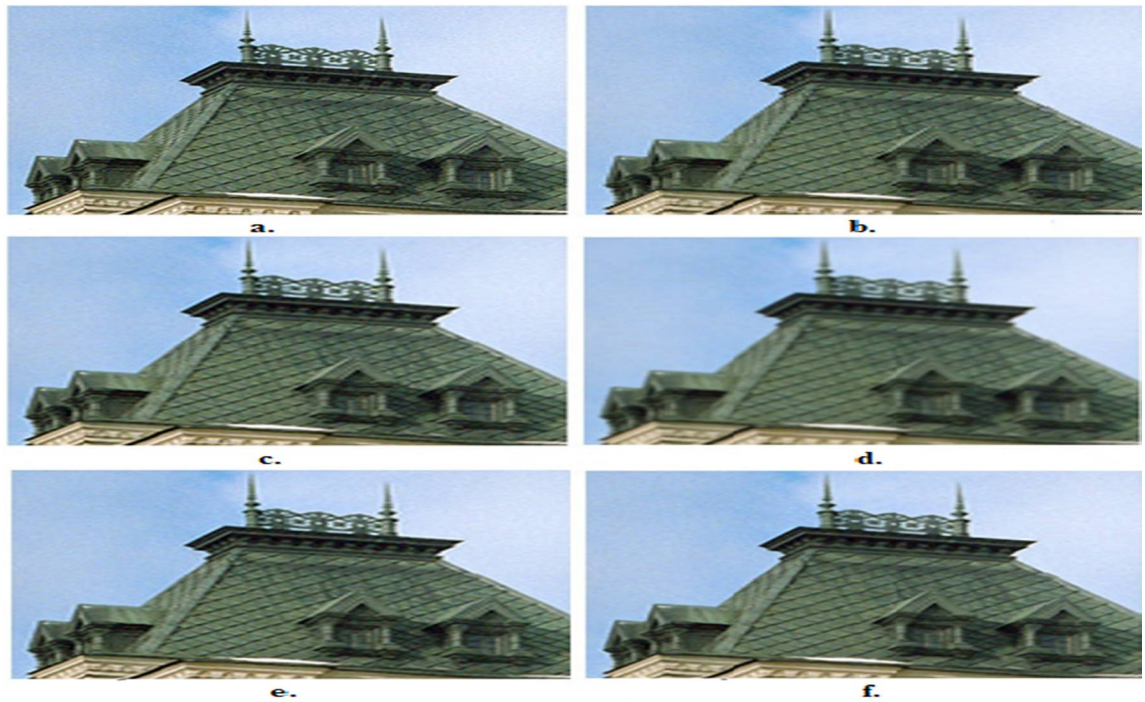
Will assess the effectiveness of these algorithms for processing test images in this image is reduced linear dimensions of the piece twice. The image is then restored to the original size by interpolating the above-mentioned methods (Fig. 5).



*Fig.5. Explanation of the process of increasing the size of the image based on the interpolation of pixel values: a). Initial test image size 4x4 pixels; f). Larger Image 8x8 pixels; c). Increased remote viewing; d). Bilinear remote viewing; d). Bilinear remote viewing; g). Remote viewing Lantsoscha; h). remote viewing of b-spline; i) remote viewing Guassona.*

Rate the quality of the reconstructed real image all the above methods of interpolation. In this experiment, the original image (Fig. 6.) initially decreased by 2 times, and then restored to its original size. Studies have shown that the bilinear method accurately retains the quality and structure of the image.





*Fig.6. a) the original picture; b) scaled by bilinear interpolation; c) scaled by bicubic interpolation; d) scaled by interpolation b-spline; d) scaled by interpolation Lentsosha; e) scaled by interpolation Guassion.*

#### **REFERENCES:**

1. Monich Y.I., Starovoytov V.V. Evaluating the quality of digital images for analysis, 2008 year.
2. CS465 Notes: Sampling and reconstruction Steve Marschner. Sept. 26, 2004.  
[http://www.Cs.duke.edu/courses/cps124/fall09/notes/12\\_curves/srm\\_sampling.pdf](http://www.Cs.duke.edu/courses/cps124/fall09/notes/12_curves/srm_sampling.pdf).
3. Vatolin D., Putilin C. Assessment of the quality image scaling methods and the results of comparisons of different methods.
4. [www.hobbymaker.narod.ru/Articles/resampling\\_rus.htm](http://www.hobbymaker.narod.ru/Articles/resampling_rus.htm)
5. [www.ru.wikipedia.org/wiki](http://www.ru.wikipedia.org/wiki)

### **RESEARCH AND DEVELOPMENT OF SENSOR NETWORKING SYSTEM FOR MEDICAL APPLICATIONS**

*U. Mirkasimov, G.E. Zakhidova*

**Summary.** *An emerging application for wireless sensor networks involves their use in medical care. In a hospital or clinic, outfitting every patient with tiny, wearable wireless vital sign sensors would allow doctors, nurses and other caregivers to continuously monitor the status of their patients. In an emergency or disaster scenario, the same technology would enable medics to more effectively care for large numbers of casualties. First responders could receive immediate notifications on any changes in patient status, such as respiratory failure or cardiac arrest. Wireless sensors could augment or replace existing wired telemetry systems for many specific clinical applications, such as physical rehabilitation or long-term ambulatory monitoring.*

**Keywords:** *Patient; Hospital healthcare; Wireless body sensor network; Energy consumption; Wireless Multi-Hop Relay Node; Electrocardiography (ECG); Fuzzy logic.*

In a hospital, health care monitoring system is necessary to constantly monitor the patient's physiological parameters. For example, parameters of a pregnant woman such as blood pressure (BP) and heart rate of the woman and movements of fetal to control their health condition. This paper presents a monitoring system that has the capability to monitor physiological parameters from multiple patient bodies. In the proposed system a coordinator node has attached on patients' body to collect all the signals from the wireless sensors and sends them to the base station.

The attached sensors on patient's body form a wireless body sensor network (WBSN) are able to sense the heart rate, blood pressure and so on. This system can detect the abnormal conditions, issue an alarm to the patient and can send a SMS/E-mail to the physician. In addition, the proposed system consists of several wireless relay nodes which are responsible for relaying the data sent by the coordinator node and forward them to the base station. The main advantage of this system in comparison to previous systems is to reduce the energy consumption

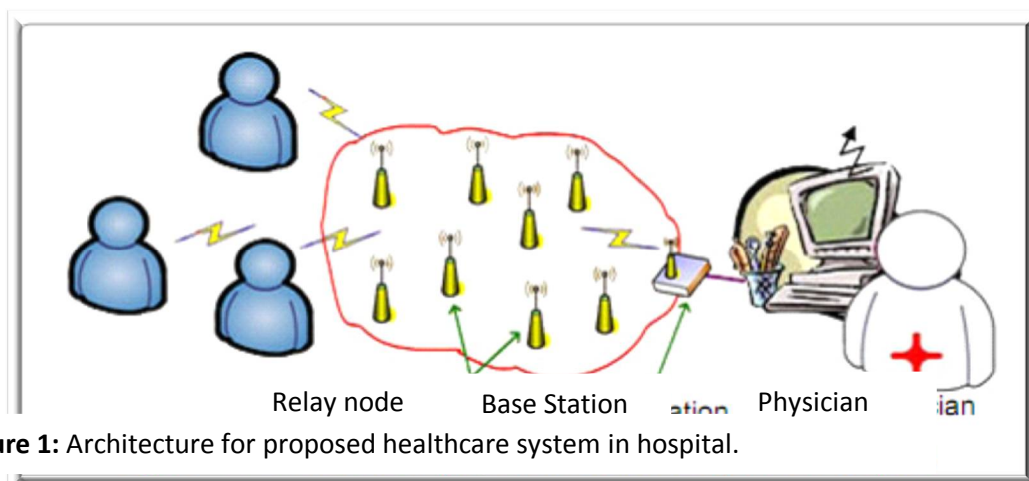
to prolong the network lifetime, speed up and extend the communication coverage to increase the freedom for enhance patient quality of life.

Body sensor network systems can help people by providing healthcare services such as medical monitoring, memory enhancement, medical data access, and communication with the healthcare provider in emergency situations through the SMS or GPRS [1,2]. Continuous health monitoring with wearable or clothing-embedded transducers and implantable body sensor networks will increase detection of emergency conditions of at risk patients. Not only the patient, but also their families will benefit from this technology. Also, these systems provide useful methods to remotely acquire and monitor the physiological signals without the need of interruption of the patient's normal life, thus improving life quality. Although present systems that allow continuous monitoring of patient's vital signs, these systems require the sensors to be placed bedside monitors or PCs, and limit the patient to his bed. But now, there is no relation between the sensors and the bedside equipment due to the wireless devices and wireless networks. These systems do not require the patient to be limited to his bed and allow him to move around but requires being within a specific distance from the bedside monitor. Out of this range, it is not possible to collect data.

In most cases, infrastructure-oriented wireless networks such as commercial cellular/3 G networks or wireless LANs will do health monitoring. But, the coverage of the infrastructure oriented networks changes with time or location. Sometimes, the coverage of wireless network is not available, or the coverage is available but we cannot access to the network due to a lack of available bandwidth. So, with these problems and restrictions, continuous health monitoring is not possible and emergency signals may not be transmitted from a patient to healthcare providers. For such situations exists more solutions, for example Wireless Multi-Hop Relay Node, which could organize local network as independent local network for medical applications. Under these conditions, we can reach to continuous health monitoring by using ad hoc wireless networks

that can transmit vital signs over a short-range presented a WMHRN (Wireless Multi-Hop Relay Node) for reliable and real-time transmission.

In this paper, a ubiquitous healthcare prototype system for hospitals is designed. The concept of Ubiquitous healthcare system is to place unobtrusive wireless sensors on a person's body to form a wireless network, which can communicate the patient's health status with base station connected to the monitoring PC. The architecture and application of the proposed system are in figure 1. The system consists of four parts: the WBSN includes four sensors which are responsible for collecting the physiological signals from patient, the WMHRN, consist of a number of wireless relay nodes which is in charge of forwarding the health data to the base station, a BS (Base Station) which receives the relayed data and sends it to the PC through a cable and the graphical user interface (GUI) which is responsible for storing, analyzing and presenting the received data in graphical and text format, and sending an SMS to the healthcare provider or patient's family in emergency conditions through the GPRS or GSM modem.



**Figure 1:** Architecture for proposed healthcare system in hospital.

For project as medical sensor monitor, embedded systems as Arduino, STM32Discovery, Atmel32 are used. I've preferred for my project stm32discovery is embedded system, based on stm32f407vg microcontroller and AVR controller.



Project of medical application will include sensor of heart state (ECG), main controller with graphical user interface (GUI), transmitter based on GSM module and monitoring medical application are used to present data (critical or processed information of heart state) for a doctor.

First task is the collecting heart states of patient. The task is based on Electrocardiography (ECG) with three channels. ECG was made as simple electronic sensor (based on AVR-Atmega8). ECG will compile information about heart state of patient and transmit data for Main controller.

Second task is processing collected data and defining patient condition with using fuzzy logic. Last decision of patient condition will be made after using difficult algorithm on fuzzy logic. Processed data will be calculated by vectors heart's electrical activity as comparing with fuzzy logic diagram (all heart states). Also patient can control himself as watching information by display (GUI) and regulating heart work like taking rest, when a signal comes from device.

Third task is sending data of patient condition from GSM module to medical application or doctor's email. Also in this case, Medical application will be created for presentation of the data of patient condition such as cardio-diagrams and fuzzy logic measurements.

The research that is based on sensor networks can help patients in treatment of different heart diseases and provide medical monitoring. Wireless BSN technology is emerging as a significant element of next generation healthcare services. In this paper, I proposed a mobile physiological monitoring system, which monitors the patient's heart beat, blood pressure and other critical parameters continuously in the hospital. The entire system consists of a coordinator node to acquire the patient's physiological data, GSM or WMHRN to forward the data and a BS to collect the data. The system is able to carry out a long-time monitoring on patient's condition and is equipped with an emergency rescue mechanism using SMS/E-mail.

## REFERENCES:

1. Stanford V (2002) Using pervasive computing to deliver elder care. IEEE Pervasive Computing 1: 10-13.
2. Mcfadden T, Indulska J (2004). Context-aware environments for independent living, In Proceedings of the 3rd National Conference of Emerging Researchers in Ageing, Brisbane, Australia.

## REMOTE CONTROL

*F.N. Muyassarov, D.A. Radjabova*

*Summary.* The point of my work is to show the fact that several home appliances can be controlled by only remote control I have invented.

*Key words:* arduino, board, ntransmitter, infrared signal, optical diode, light detector, packet board.

The 21<sup>st</sup> century is the age of Information Technology. One cannot imagine his life without IT. Information Technology is very resources that help us control and adapt to our environment. Technology is computers and computer networks, as well as television and telephones. Several industries are associated with information technology, including computer hardware, software, electronics, semiconductors, internet, telecom equipment, e-commerce and computer service. In our day and age, technology is an integral part of our lives. The main purpose of technology is to make our life easier.

Technology plays a significant role in the educational field. Math, reading and writing skills can all be improved using technological advances. Students do not have to bear with mundane learning cycles anymore as more teachers are gravitating towards the use of interactive tools and media for making learning interesting. Students can prepare for their future using educational materials that are easily available, thanks to information technology.

Technology has also helped small businesses evolve and expand quickly. The use of social networking, video conferencing, virtual office tools and other such techniques have removed all boundaries. Thanks to technology; businesses, small and large, can reach a wider customer base, grow, and expand.

Business technology has helped improve communication. Today, workers are not limited to phone calls alone; they can send emails and messages without the fear of interrupting the recipient. Technology saves lives.

There is no doubt that technology has greatly influenced modern society and lifestyles. While most of these influences have been positive, there are few negative ones. That is not the topic of my article.

IT makes our life more interesting and easier. Thanks to IT we have comfortable life and we can control almost everything. As a student of Task University of IT I tried to invent something that can make our life better interesting. The point of my work is invented a little system which is called “a distance control”, “remote control” consists of several devices with unique remote control.

The main task or essence of this device is that one can control for instance lamp, electrical kettle and others with only one control.

For inventing this device we need :

- Board named “ ARDUINO ”
- Computer
- Packet board
- Transmitter for infrared signal
- Light detector (optical diode)
- Remote control things we would like to control
- And of course special program from “ ARDUINO ”

So what is ARDUINO ? Why do we need it? And what is the function of it? Arduino is a tool for making computers that can sense and control more of the

physical world than your desktop computer. It's an open-source physical computing platform based on a simple microcontroller board, and a development environment for writing software for the board.

Arduino can be used to develop interactive objects, taking inputs from a variety of switches or sensors, and controlling a variety of lights, motors, and other physical outputs. Arduino projects can be stand-alone, or they can communicate with software running on your computer (e.g. Flash, Processing, MaxMSP.) The boards can be assembled by hand or purchased preassembled; the open-source IDE can be free downloaded.

And there certainly raised the question why we should choose ARDUINO, not another device:

There are many other microcontrollers and microcontroller platforms available for physical computing. Parallax Basic Stamp, Netmedia's BX-24, Phidgets, MIT's Handyboard, and many others offer similar functionality. All of these tools take the messy details of microcontroller programming and wrap it up in an easy-to-use package. Arduino also simplifies the process of working with microcontrollers, but it offers some advantage for teachers, students, and interested amateurs over other systems:

- Inexpensive - Arduino boards are relatively inexpensive compared to other microcontroller platforms. The least expensive version of the Arduino module can be assembled by hand, and even the pre-assembled Arduino modules cost less than \$50
- Cross-platform - The Arduino software runs on Windows, Macintosh OSX, and Linux operating systems. Most microcontroller systems are limited to Windows.
- Simple, clear programming environment – The Arduino programming environment is easy-to-use for beginners, yet flexible enough for advanced users to take advantage of as well. For teachers, it's conveniently based on the Processing

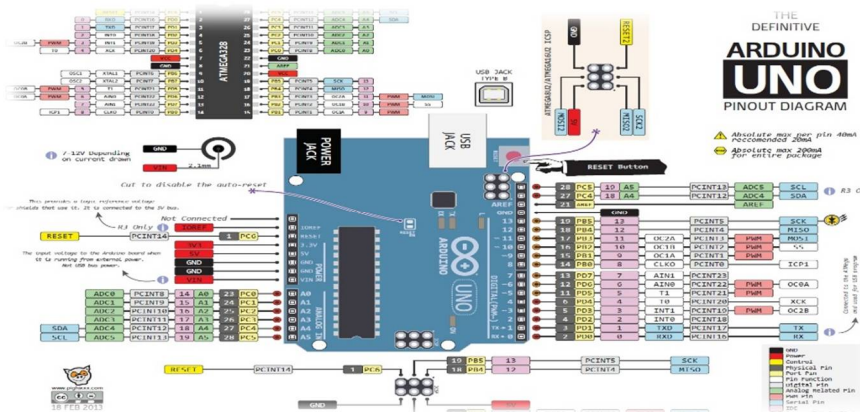
programming environment, so students learning to program in that environment will be familiar with the look and feel of Arduino

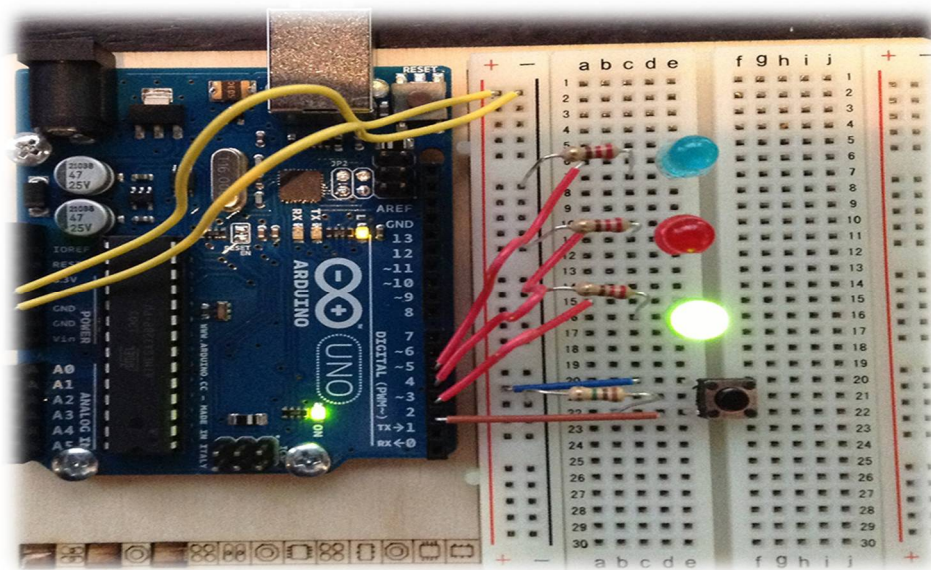
- Open source and extensible software – The Arduino software is published as open source tools, available for extension by experienced programmers. The language can be expanded through C++ libraries, and people wanting to understand the technical details can make the leap from Arduino to the AVR C programming language on which it is based. Similarly, you can add AVR-C code directly into your Arduino programs if you want to.

- Open source and extensible hardware - The Arduino is based on Atmel's ATMEGA8 and ATMEGA168 microcontrollers. The plans for the modules are published under a Creative Commons license, so experienced circuit designers can make their own version of the module, extending it and improving it. Even relatively inexperienced users can build the breadboard version of the module in order to understand how it works and save money.

We have to record or write down the program which helps us to control as soon as we code the program we must connect “ ARDUINO ” with the packet board we place the detector (sensing device) receiving infrared signal, photodiode, resistors. Then we must to set our device on the packet board it will be power supply (power source) device. Things like lamp, fan, electrical kettle can be easily controlled ;by the remote control & made as you can see it is not so complicated.

This are real photos of my work.





## WDM-PON AS A PERSPECTIVE TECHNOLOGY OF MULTISERVICE BROADBAND ACCESS

M. Pantileykina, D.Kh. Kadirbekova

*Summary.* This article is devoted to perspective development of using new WDM-PON technology as basic technology of multiservice broadband access, which can be used instead existent cooper cable systems.

*Key words:* WDM-PON, wavelength-division multiplexing, PON, passive optical network, access network, dedicated lane, multiservice, future technology.

Society has entered the era of information technology and human's needs for quality, fast and affordable communications are growing every day. By analyzing the existing technologies of broadband subscriber access based on copper cables, such as xDSL family, it can be argued that these technologies come close to the limit of its capacity and placing greater demands on the quality of the line and its range. In this regard, sharply raises the question «what next? ». The answer is a multi-technology broadband optical access FTTx family.

It's no secret that in Tashkent and other major cities are built optical access network FTTH technology but the technology is largely problematic for use in all locations, as there are often problems placing active equipment and ensure that it operating conditions. Another solution is to use a family of technologies xPON, representing class solutions FTTB, are currently only 2 competitive modification EPON and GPON, both technologies offer up to 64 users on a single optical fiber. These technologies are advisable to apply in the private sector and small towns. As can be seen from the above there is no technology is a universal substitute for modern copper infrastructure. In this option in the future may be spectrally sealing technology of passive optical network (WDM PON).

The concept of this technology is in use at the subscriber station WDM technologies that allow using DWDM wave grid to accommodate a large number of parallel high speed channels over a single PON structure. WDM-PON provides an alternative transmission scheme based on time division, as in GPON, the scheme where each ONT transmits and receives data at a particular wavelength. Typical architecture of WDM-PON will replace passive splitters on the wave selective filters, which are often implemented as a lattice-based array waveguides (Arrayed Waveguide Grating -AWG).

The main advantages of WDM-PON:

- user is provided with dedicated lane (no distribution on a competitive basis);
- signals subscribers are physically isolated;
- may significantly increase the communication range (using AWG with low losses instead inefficient in terms of loss of splitters for GPON in the standard budget of 28 dB, it is possible to connect subscribers at a distance of about 80 km).

The main disadvantage of WDM-PON is high value, as required narrowband transmitters emitting at a given wavelength. This is especially critical for subscriber units ONT, because it directly affect the cost price of the subscriber line. On the one hand, the problem is partially solved by unifying and reducing types of hardware components in the terminal devices (for example, the use of configurable

on a given laser wavelength), on the other - not without reason, it is hoped that within a few years by the time the standard cost of optical components for WDM-PON will be significantly below the current level.

The advantage of this technology is that using selective optical filters to separate carrier frequencies can create the structure of a tree on a completely new level: without the intervention of intermediate active elements using two wavelengths can create a network type 10GPON, working on the set waves, the wavelength, used to transmit TV will be common for all branches. This creates a WDM PON, capable of creating 17 TDM PON with each speed of 10 Gbit/s., and each of which may have up to 256 subscribers with a speed of 40 Mbit / s, i.e. the total number of subscribers of one fiber is only 4352 subscribers. The network is universal, able to work with her current equipment systems FTTH, in the future will be of ONU at gigabit speeds.

Another advantage of this technology is the increased transmission range, which is achieved by eliminating the wavelength of 1.31 nm and a lack of optical splitters in the first end that is energy wavelength division begins after she was separated from the "backbone" of the multiplexed stream.

As the transmission medium on the main line section is proposed to use a fiber-shifted to third window transparency fiber dispersion or removal of the hydroxyl peak between the second and third transparent windows, which gives even more opportunities technology WDM.

Summarizing we can say that the technology WDM passive optical circuits are a possible solution to the problem so-called "bottleneck", which are currently the subscriber access network and the cost of implementation costs of such a decision will fall because of the mass migration to this technology.

### **3D PRINTERS MAKES LIFE EASIER**

*I.I. Parmanov, N.A. Atashikova*



**Summary.** *The following article describes 3d printers, which makes life easier.*

**Key words:** *3D printing, 3D printer, FDM, SLA, prototyping, manufacturing.*

## **Introduction**

3D printer is device, which “creates” three dimension objects from the digital model. The term “3D printer” first used in 1996.

3D digital model is a virtual model of the object to be created. Virtual model can be created by program designed for 3D modeling or by using 3D scanner, which represents the real object in digital 3D format. Usually 3D digital model is contained in .STL file format.

Some 3D printers might contain 3D scanner also.

### **1. How 3D printer works.**

The process of printing 3D object is achieved by laying down layers of liquid material and blending them so that there is no “footprint” of layering. The 3D digital model is sliced into many thin layers (called GCode). Then, each layer is read and processed by 3D printer.

There several methods of printing 3D objects. The most used method is FDM – Fused Deposition Modeling. This method was invented by Scott Crump in 1980 and came to market in 1990. His 3D printer used different kind of materials, one is called build material for building model, and one support material. At the end of the process, the printed object is cleaned from support material. The main advantage of this method is ability to create almost objects of any shape. But printing of model can take from several hours to several days. The material used for printing is thermoplastic.

Another method is called SLA – Stereolithography. In this way, layers are added by an ultraviolet laser. It hardens resin in a vat layer by layer until the part is

built. The advantage of this is quickly creating high definition parts that can be machined. However, the resin is fairly expensive compared to other 3D printing materials. This is the main disadvantage.

## 2. Use of 3D printers

3D printers become popular and the area of application of 3D printers is expanding. The first time 3D printers came to market the price was too much and the size was too big. But today they became more affordable. Use of available and ecology friendly materials make the price of 3D printers decrease. Now, 3D printer price varies from hundreds of dollars to thousand. Its desktop size gives ability to use it also at home.

Nowadays 3D printers are used in machine engineering, medicine, building. Archeologists use it to reconstruct the model of the found remains, artifacts, etc.

The main use of 3D printers is in **rapid prototyping**. Rapid prototyping is technology for creating prototypes of object for demonstrating. Use of 3D printers for rapid prototyping makes work much more efficient. It saves a lot of time spent for creating prototype by other technologies (not 3D printers). In addition, it saves a lot of money because of cheap nature of material for printing. The company Nike uses 3D printers for prototyping shoes of different color. Another use of 3D printers is **rapid manufacturing**. In this method, the printed objects are product.

In 2003 was filed the first patent for 3D bioprinting. 3D bioprinters will allow printing the needed organs of human. It replicates human tissues, organs by placing live cells into predetermined positions. Use of 3D bio printers eliminates the need for organ donors. Recently (15 March 2015), Martin D Burke with his team developed a “3D printer for chemicals”. Their printer simplifies the complex process of synthesis. It can identify, analyze and break down the complicated molecule structure and then connect them together to create wanted byproduct. In

the future, 3D printers may be used to print living bone cells for transplant, or whole organs like hearts.

Using 3D printers in society becomes more popular. Many hobbyist and enthusiasts started modeling and printing their own models since the printers became affordable. In USA state California, the company “Twindom” offers 3D portraits. They use 3D scanners created by themselves as a small room and 3D printers.

In food industry, edible objects can be created with help of 3D printers by using edible foods. This way of use 3D printers can be used for decorating and designing foods.

In 2006 was developed and in 2008 was introduced to market the first **self-replicating** 3D printer. It means that these 3D printers can print itself. The main benefit of this is you can easily print necessary detail of your printer.

### **3. RepRap project**

In 2005 at University of Bath was started RepRap project (Replication Rapid Prototype). The founder of RepRap is Dr. Adrian Bowyer.

The main purpose of this project is making 3D printers, which replicates itself. This self-replicating ability makes possible cheaply distribute RepRap printers among society. It results in economic savings, makes RepRap printers to be widely distributed.

### **Conclusion**

Because the cost of 3D printers is decreasing – from \$20,000 to \$1000 since 2010 - the future of “manufacture market” is going to be changed. Because 3D printers can print 3D models, the end-users who has own 3D printer can print needed object rather than go to market and buy it.

The manufacture markets now must focus not on the product, but their 3D models. They must provide better 3D model for their product and sell it.

### REFERENCES:

1. Desktop fabricator may kick-start home revolution - <http://www.newscientist.com/article/dn10922-desktop-fabricator-may-kickstart-home-revolution.html>
2. What is 3D printing? - <http://3dprinting.com/what-is-3d-printing/>
3. Fused deposition modeling – [http://en.wikipedia.org/wiki/Fused\\_deposition\\_modeling](http://en.wikipedia.org/wiki/Fused_deposition_modeling)
4. How Fused Deposition Modeling Works - <https://thre3d.com/how-it-works/material-extrusion/fused-deposition-modeling-fdm>
5. 3D Printing - <http://3dprinting.com>
6. Will 3D printing push past the hobbyist market? - <http://www.thefiscaltimes.com/Articles/2013/09/02/Will-3D-Printing-Push-Past-the-Hobbyist-Market>
7. Additive manufacturing - <http://www.lia.org/blog/2012/04/the-history-of-laser-additive-manufacturing/>
8. The Future Potential Power of 3D – Bio printing - <http://www.engineering.com/3DPrinting/3DPrintingArticles/ArticleID/7379/Engineering-Ourselfs-The-Future-Potential-Power-of-3D-Bioprinting.aspx>

### ON THE OTHER SIDE OF A CLOUD

*J.J. Tashpulatov, D.Kh. Kadirbekova*

*Summary.* The following article is dedicated to Cloud services and cloud computing. The purpose of it is to give as much information as possible to make it

*easier to understand the benefits of such technology, which will result in getting more people's attention.*

***Key words:*** *Cloud Computing, Cloud Services, IT, Internet, memory storage, data center, new technologies, mobile gadgets, access to information, borderless.*

***The future is near.***

In prehistoric time, people didn't know how to read or write, but if they didn't learn how to impart their experience to the descendants, there would be no evolution. First men kept their knowledge in the memory and by the means of signs and gestures passed it to their children. After a while, with the creation of written language, people adjusted stone flags for storing information. With the development of literature, the means of writings were evolving too, starting with stone, people ended with papyrus and paper. Many centuries have passed and now the information is kept in electronic form, every man all over the world has an access to data, if he is connected to the Internet. Besides the Internet, we got used to, the technology named "Cloud service" has come into our sight. This is useful and very perspective one.

Usual CD disks, flash memories and hard-drivers are now substituted by Internet. On its base Clouds exist. In common words, this is an online data storage. Third parties provide services for hosting and storing information. Data is kept on servers which can be thousand kilometers away from the end users. If a client has high bandwidth, he can use cloud resources as if they are set up on his computer. If you need to run a web site, and you don't want to buy home server, you can use cloud computing for hosting it. It is very useful for starting a business. Huge segment in IT is developing on this basis. It is called "Cloud computing" and users worldwide have already appreciated its benefits. I'm going to examine more closely what stands behind this thesis and in which area of life a usual user can find the use of it.

The figure 1 indicates the spheres which the cloud computing can be used in and the number of devices that can have an access to the cloud.

Three reasons why cloud computing is becoming so popular nowadays:

1) Scalability: With cloud hosting you can easily grow or shrink the number of servers based on what you need;

2) Immediate: The computing power is there when you need it, you simply turn it on, and when you are done you just turn it off;

3) Cost savings: You only pay for what you use and it doesn't include maintenance cost.



*Figure 1: The cloud.*

To be more specific, it means that a user can choose and change the need in computing processes such as: access speed and data handling, memory capacity for storing data. Furthermore, client can use the services with any end device he finds appropriate. The cloud computing provider shares his resources with the clients and it allocate the power between users. Moreover, the services can be changed at any time, if the client wants it.

A simple example of cloud computing is Gmail. You don't need a server or software to use it. All a user would need is just an internet connection and he is ready for sending and receiving emails. The email management software and

server is all on the cloud storage space and is managed by the cloud service provider. The consumer gets to use the application alone and enjoy the advantages.

The figure 2 shows the advantages and disadvantages of cloud computing. With the good comes bad, however, a lot of effort is being put to eliminate the drawbacks.



*Figure 2. Pros and cons of the CC.*

Currently, there is a big number of companies providing such type of service. For example: Dropbox, Google Drive, Microsoft SkyDrive, Yandex-Disk, iCloud. There are also such companies in Uzbekistan – BilliurCOM, UZcloud, UZdisk, SharkTelecom.

We don't have to stop on each, the users chooses best suitable option based on pros and cons. Some give more disk space for free, another ones 'resources are more convenient to use, and others are more accessible. Everyone has to make their own decision on what cloud service is more appropriate.

Furthermore, having touched the service providers, we ought to analyze for what purposes so called clouds are needed. In our era of mobile devices, cloud services are essential additions to our small memory disks on gadgets. In the cloud we can store music, movies, even the game progress can be saved there. Having at hand Internet access, you can easily acquire admission to your personal data, which is stores securely on Data Centers around the world.

Cloud computing has already become an integral part of mobile operation systems like Android and IOS. All applications installed on a smartphone are automatically saved in your personal cloud, from which at any time you can recover your private data and in case of deleting a program, download it again. Apple users have started uploading their photographs and selfies to iCloud. Why occupy the memory of a smartphone, if you can borrow it from virtual server. Moreover, in case of losing a phone or if it's damaged you can always access your private data.

In addition, in questions of reliability of storing and securing information, service provider is fully responsible. You don't have to worry about the safety of your data. Let them worry for you.

Speaking of operation systems, it is important to signify the OS developed by Google, it is called Chromium, which is a clear reference to Chrome browser. OS Chromium was created for netbooks, they are called Chrome books. They suggest stylish design, small weight and powerful hardware for attractive price. It is available because chrome book needs very little disk space and it doesn't require expensive hardware for stable work. It has become possible due to the fact that users work through internet, i.e. all applications and data except for OS are stored in cloud. If you want to make a document, you use online application Word which is run by servers you accessed. In this case your netbook plays intermediate role between server and you.

Netbooks based on this OS are actively taking over a market of budget devices and there are many companies which produce them, namely: Acer, HP, Asus, Lenovo, Samsung, Toshiba etc.

To sum up, it can be said for certain that in short time on account of wide accessibility of the Internet world wide, cloud services will be introduced to many spheres of life of human beings, starting from education and ending with business running. People will surely find benefits of using clouds. It can be for economy of



disk capacity or economy of resources of computing machine. The day will come, when absolutely all data and computing processes will be processed in the cloud.

#### REFERENCE:

1. Thomas Erl. Cloud Computing: Concepts, Technology & Architecture, 2013.
2. Michael J. Kavis. Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, &IaaS), 2014.
3. [http://www.researchgate.net/post/What\\_is\\_cloud\\_computing\\_and\\_what\\_are\\_the\\_different\\_uses\\_of\\_cloud\\_computing](http://www.researchgate.net/post/What_is_cloud_computing_and_what_are_the_different_uses_of_cloud_computing)
4. <http://www.itinfo.am/eng/cloud-computing/>
5. <http://bourabai.ru/mmt/cloud.htm>
6. <http://habrahabr.ru/post/142935/>
7. <https://www.google.com/chrome/devices/>

#### ANALYSIS OF EXISTING EVALUATION BOARDS FOR LEARNING MICROCONTROLLERS

*Foziljonov H. I., Khamidov H. A., Mannapov U. M., Zokhidova G.E.*

*Summary: Introducing the features of microcontroller to build new model technologies. Analyzing price and characteristics of existing evolution boards in order to create our model.*

*Key words: microcontroller, microprocessor, big board, mini board, microchip, simulator, device, embedded systems, memory, generators, analogue, LCD displays, periphery, Interface.*

Nowadays, more and more electronic devices are based on microprocessors or microcontrollers. The microcontroller (MC) is a custom LSI product (representing single-chip microcomputer designed to control various electronic devices. MC has its own CPU (Central processing unit) (registers, the block

control and arithmetic logic unit), memory, and various peripheral devices, including input and output ports, timers, interrupt controllers, generators of different pulses and even analogue to digital Converter. To manage a variety of electronic devices for microcontroller, a special program is written by which the microcontroller controls and interacts with various electronic devices. Microcontrollers are mainly used in embedded systems, toys, machines, mass home technology, home automation, where there more CPU power is not required, but rather a balance between price and sufficient functionality. Today, there are over than 200 versions of microcontrollers from different manufacturers, but very popular among developers use 8-bit PIC (Peripheral Interface Controller) microcontrollers of Microchip Technology company and Atmel's AVR. The appearances of some types of microcontrollers are presented in Fig.1.

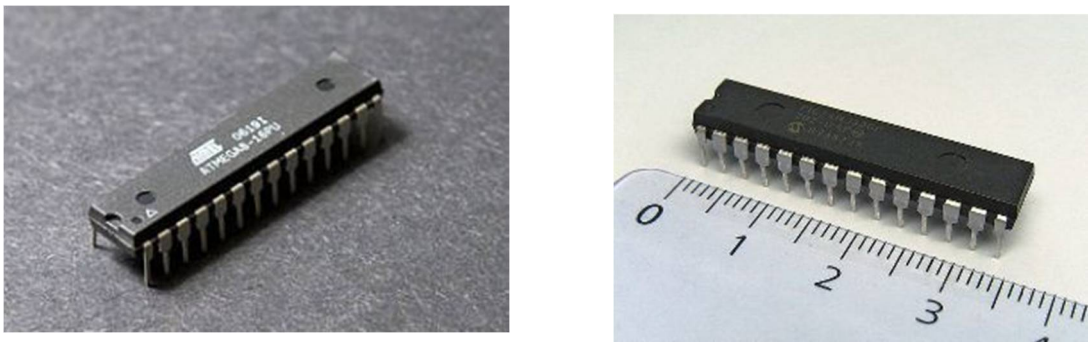
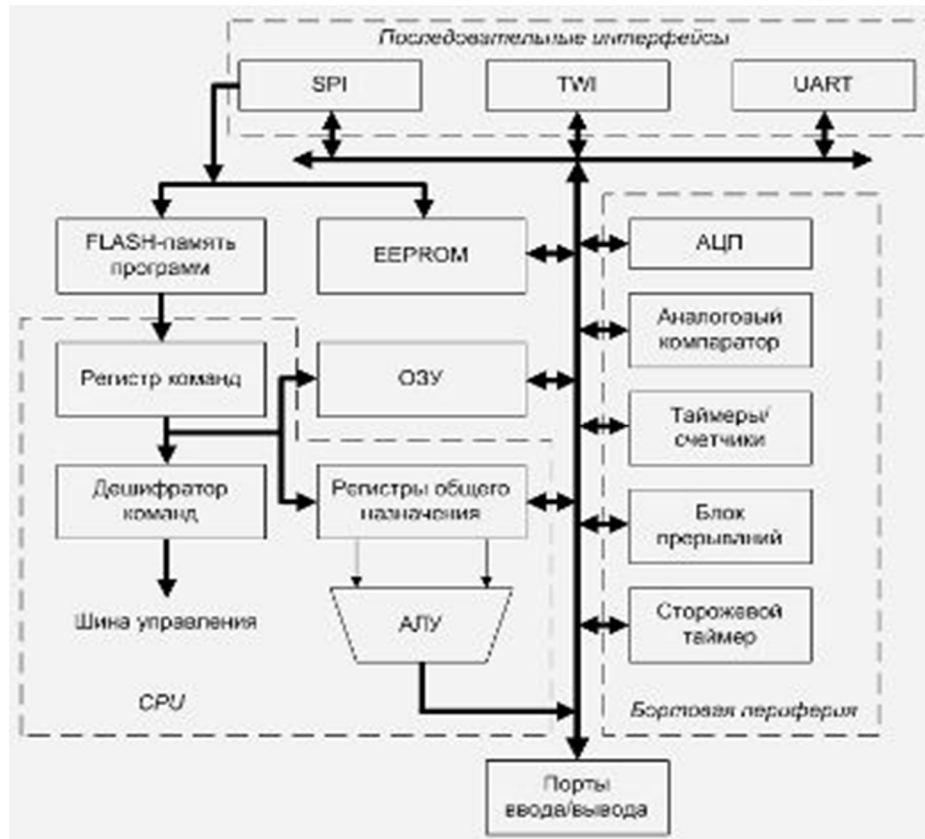


Fig.1. The appearance of microcontrollers from Atmel and  
Microchip Technology

Despite the wide variety of models of microcontrollers, in principle, they have a similar structure, presented in Fig.2.



*Fig.2. block diagram of the microcontroller*

For software development of MC it is necessary to debug. However, it is problematic to produce real devices. Therefore, for this purpose a variety of simulators and prototyping boards are used. But these two methods have significant disadvantages:

- Working in the simulator often differs from work in practice.

- When building on a breadboard you can make a mistake and burn the controller or connect something wrongly. Then it takes time to find the mistake or try to understand why the code doesn't work, although the problem is not in the code.

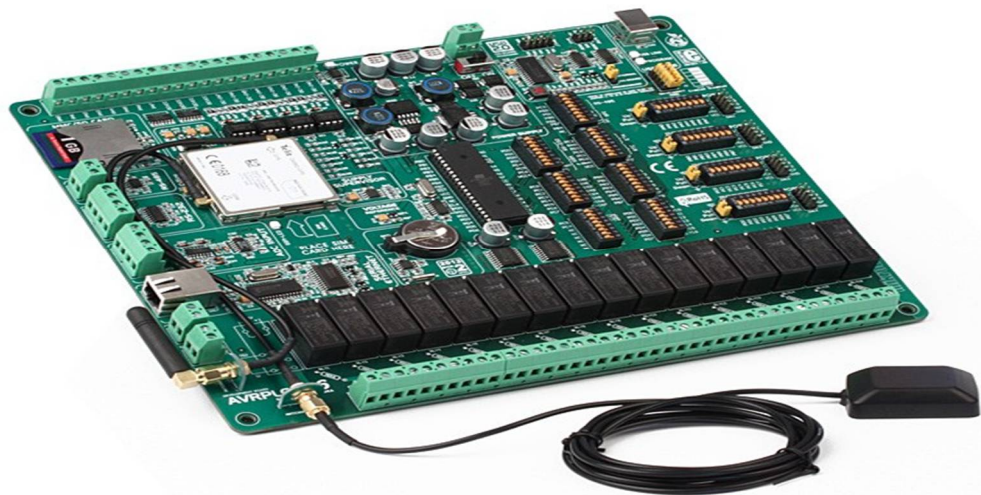
Excellent testing ground for these issues is the debug board. This is a special device which is already installed various electronic (active and passive) elements of electronic devices (temperature, pressure, real time clock, LCD displays, etc.). In addition, evaluation boards are of two types: Miniboard and Bigboard.

Miniboard, with small size video cards, and with a minimum set of electronic components and equipped with connectors for connecting sensors and external devices. Appearance Miniboard shown in Figure 3.



*Fig.3. The appearance of Miniboard*

Bigboard, large size computer motherboard, with all the electronic components and devices as well as connectors for connection of additional sensors and external devices. Appearance Bigboard shown in Figure 4.



*Fig.4. The appearance of bigboard*

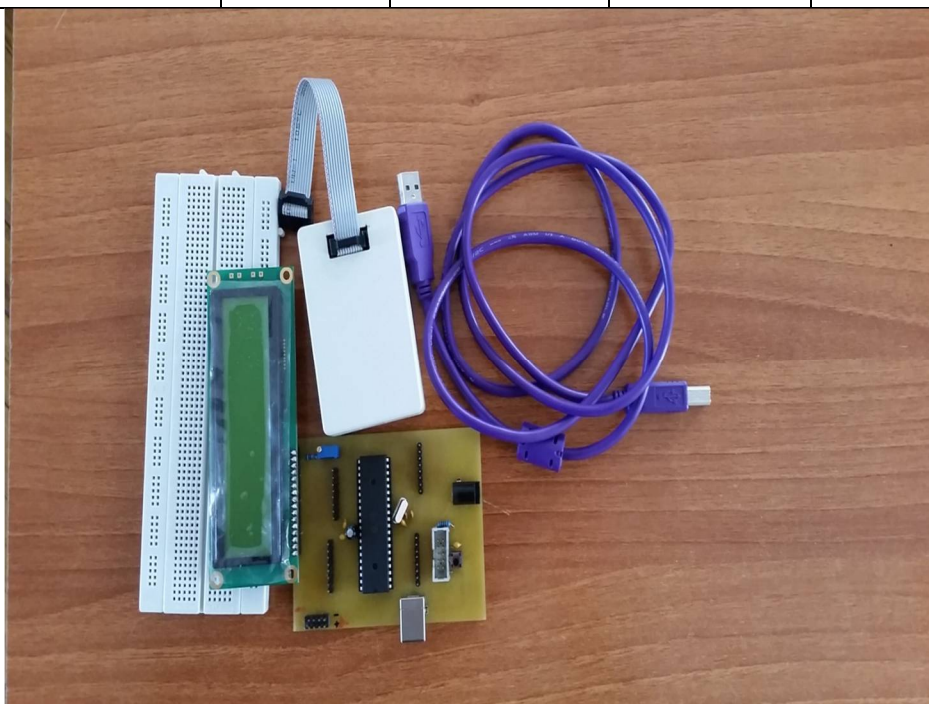
There are other evaluation boards, which are designed radio amateurs themselves based on the experience obtained in the formation of various microcontroller systems and devices.

At the time of the data, many manufacturers of microcontrollers such as Atmel, ST electronics, Microchip Technology etc. offer their specialties evaluation boards for quick reference to the features of the microcontroller. Prices evaluation boards start at \$ 20 to \$ 200 and above.

In the analysis of evaluation boards were chosen the most common evaluation boards of ArduinoUno, ReadyforPIC, ReadyforAVR, ArduinoMega 2560 and OpenM128. The main technical characteristics are presented in Table 1.

	Ard uino Uno	Ready for PIC	Ready for AVR	Ard uino Mega 2560	Open M128
The microcontroller	At mega328	PIC18 F45K22	Atme ga16	At mega25 60	Atme ga128
Bit	8	8	8	8	8
The presence of a connector for connecting the inside circuit programmer	-	+	+	+	+
The presence of the mock-up area	-	+	+	-	-
Clock frequency, MHz	16	16	16	16	16
Flash memory Kbytes	32	16	16	256	128
RAM,	2	2	2	8	4

USART,	1	1	1	2	2
SPI,	1	1	1	1	1
AIQI,	8	8	8	16	8
I2C,	1	1	1	2	1
Power, In B	5	3.3, 5	3.3, 5	3.3, 5	3.3, 5
The number of lines I/o, PC	14	40	40	54	53
The average price,	367 0	2790	2790	256 0	2800



## INTERACTIVE VOICE RESPONSE MENU FOR UNIVERSITY

*A.G. Khidoyatov, D.Kh. Kadirbekova*

**Summary.** *This article is devoted to the implementation of interactive voice response system to our university. The idea, which is represented in this article, would be innovation in our University system, because in our country this system has been implemented only in Call Centers.*

**Key words:** *interactive voice response, telephony, IVR-platform, database, voice menu, SMS, access protocol, voice application, voice lock, Call center.*

Interactive voice response (IVR) is system of a computer telephony which is operated the subscriber by means of a voice-frequency set on phone or voice, and the system provides necessary information, using written down voice fragments or system of synthesis of the speech of TTS (Text-To-Speech) in advance. Examples of IVR are such voice appendices as Auto information, Voice Mail (Voice Mail), Universal mail (Unified Messaging), Centers of processing of calls (Call Center), Systems of record of negotiations. The description of creation of voice appendices is not spoken this article.

The standard IVR platform gives the following opportunities:

- Opportunity creation of voice menus;
- Access to protocols for interaction with external systems: corporate databases, SMS/USSD centers, administration and tracking of operability of system;
- Possibility of accumulation of productivity due to horizontal scaling of system, i.e. at the expense of increase in number of telephone payments.

The modern IVR platform besides the above-mentioned advantages have the following ones:

- Open structure of the menu and business logics;
- Reliability and non-stop(24/7/365) service of subscribers;
- Accurate functioning at refusal of components and fixation after failures;
- The minimum efforts on integration of the existing telephone infrastructure and of the corporate database.



Competently designed IVR platform will demand from the further developer only minimum efforts:

- On development of new voice applications;
- To support of new data sources and protocols;
- Transition to the new telephone equipment.

The IVR system, which is illiterately integrated into the contact center, generates a dissatisfaction of clients. Consumers show discontent concerning complexity and an ambiguity of the menu of self-service, need of listening to long monologues of an answer phone before transition to a new line of the menu, unreasonable advertizing inserts etc. As a result, instead of increase of efficiency of DPC his owners observe outflow of the angry users.



According to the global report of Data monitor/Ovum "Genesis Consumer Survey 2009 – Global", 27% of respondents aren't satisfied with experience of interaction with IVR system and only 4% estimate work positively. The similar report on the USA showed that the quantity of negative reviews of IVR in the country reaches 38%. The dry statistics turns for the companies in the enormous financial losses connected with refusal of clients of purchase of goods and services, their leaving to competitors. It is enough to tell that the average size of losses from loss of one client in the countries where researches were conducted makes 243 dollars (calculations of Data monitor/Ovum).



At the same time, the modern contact center can't be presented without IVR system to which the set of the major tasks is assigned. Phone calls in contact center remain the most habitual and widespread way of communication of the companies with clients and partners. However, this way of communications is also one of the most expensive. According to Bart Stalens, the director of strategic marketing of Orange Business Services in the CIS, the average cost of service of one call makes about 5 dollars. The most powerful item of expenditure (about 60%) at the organization of contact center is costs of the personnel, which it is possible and it is necessary to optimize.

IVR gives the chance effectively to solve this problem. "The voice menu allows owners of contact centers not only to reduce expenses on communication, to minimize costs of the personnel, reducing its number, but also to increase the level of satisfaction and loyalty of clients due to automation and personalization of processes of interaction with them. It is especially important in the period of today's aggravation of the competition in the market" – Bart Stalens speaks.

The value of systems of voice self-service is realized perfectly not only owners of contact centers, but also clients. As results of the researches conducted by request of Genesis by the Gene Blackley company in 14 countries of Europe testify (including Russia), 74% of users consider IVR systems as effective alternative to the round-the-clock telephone support. About a half of users (52%) is ready to stop communication with the organization, which has no well functioning IVR system.

The contradiction is available: all need good IVR system, but it too often works badly. Experience of the largest Russian telecom operators shows that it is necessary to solve this problem in two ways: by means of expeditious change-over of the interactive voice menu on the basis of a constant control and the analysis of its key parameters, and also by timely technological modernization.

We know that every year to our university there come more than 1000 entrants and their parents or close people. In addition, many of them come from far

areas. My idea consists in that that will construct such system that it wasn't obligatory for them comes to us to university and it is simple to receive information on phone on our university, on its chairs and the directions, news of university, to contact receptions of dean's offices and administration.

This system is generally intended for work of Call of the centers. But when using and in this system (in system of university) I think that it would bring huge benefit in respect of convenience for arriving and in obtaining information for guests.

The interactive Voice Menu (IVR) – is the system of previously written down voice messages which is carrying out function of routing of calls in the call-center or other organization, using information entered by the client by means of a voice-frequency set. Why call of the center? Yes because modules of speech interaction always cost much, and were a component of the big automatic telephone exchanges most often used in call centers.

For our case, the elementary IVR menu looks like:

*Hello! The Tashkent University of Information Technologies welcomes you!  
For obtaining information on chairs, press 1. For communication of obtaining information on faculties, press 2. For connection with receptions of dean's offices and administrations, press 3. If you want cooperation with us, press 4. Thanks for a call.*

Such menu divides calling on three groups:

- On those who need information – they call to receive information on faculties, the directions and other data on university;
- On those who want to contact dean's offices and administration of university;
- On those who want to cooperate with university in scientific or other directions.

This system has the following advantages:

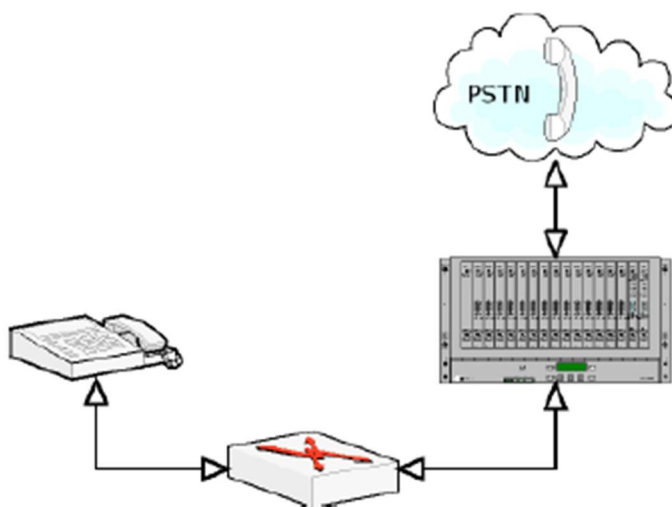
According to empirical data, such elementary menu is capable to process more than a half of all arriving calls in an institution. Other calls get on the secretary who switches them to destination.

Secondly, IVR is - faces institutions (in our case of university). Existence of the interactive menu is considered good corporate style and has impact on prestige of an institution. Thirdly, existence of IVR allows to process institutions the entering call to a time off when all employees are absent from work (for example, in the evening or on holidays). The IVR system can inform the client on graphics of work of an institution, its arrangement, the location map and to record a voice message which will be transported on an e-mail address of an institution. Fourthly, IVR allows to organize promotional and informational service calling system which can be carried out as at the time of expectation of the answer of the operator (in turn), and at obvious choice of the client. A reason for creation of the promotional and informational block can be as emergence of new faculty or direction, change in it; greetings on holidays; notice of change of the address, phone number or schedule of work.

Possibility of scoring of IVR – is the important feature providing success of call center. Competently picked up combination of background music, a voice of the announcer and the applied lexicon forms favorable impression of a call to this or that organization. Routing is carried out by means of IVR-system and provides the correct loading of services of products and operators of the company. If the same calls constantly come to a certain company, the secretary is compelled to switch constantly entering calls to different employees and various divisions of the company. Thus, it still has time at least for performance of other more important tasks. In that case, the optimum decision is use of the automatic voice IVR menu. IVR services allow the subscriber calling in this or that company to choose independently department, structural division, and the employee with whom he wishes to talk over. Thus, the client will listen to the voice notification, with various options of the available connections.

IVR services are the popular modern IVR technology improving activity of the companies moreover, by means of IVR; it is possible to reduce significantly a stream of the calls passing through the secretary. The most part of calls will pass without processing of the secretary, thereby, loading will be lowered on him, telephone lines will not be constantly occupied, and clients will be happy with such service.

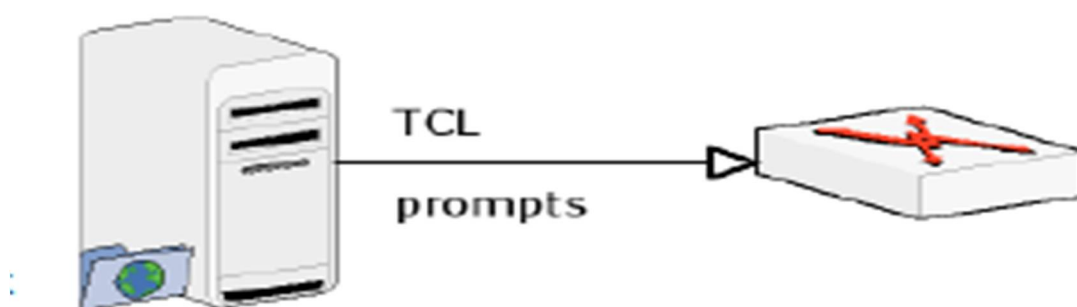
Today the most advanced technology is considered IVR in combination with technology of speech recognition system, irrespective of features of a voice of the subscriber. That is, any calling person, whether it is man, woman or children are capable to cause by voice of subscribers, expansions and the submenu. Such interactive menus include modules, which distinguish inquiries on pronouncing combinations of figures, the name of department, a surname, a middle name and a name. Thus, having used the service IVR services it is possible to improve optimize competently activity of the company, having chosen the most suitable solution of IVR of system for this or that company.



***Figure №1. Technical IVR (the program hardware complex which body is the voice lock)***

The number of the telephone sets and/or automatic telephone exchange system connected to a lock depends only on quantity, which is available in analog and digital modules. The most typical scheme, of course, is the configuration "lock

automatic telephone exchange" allows the operator to capture the maximum audience of clients. In this case, on automatic telephone exchange is adjusted to one or more dialing telephone numbers, on which come to a voice lock. For each entering call on a lock the IVR-application starts (it is application, it a TCL script), providing all logic work of the interactive menu.

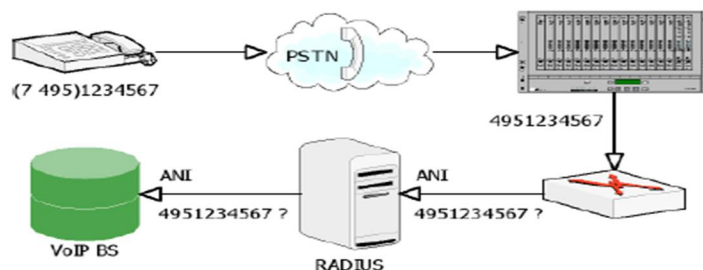


***Figure №2. Transistor coupled logic(TCL) script***

Before using the services IP-telephony the client has to pass two consistently stage: authentication and authorization. The problem of authentication is to define, whether exists in to system the active client with the same identification data. Authorization defines whether there are enough means at the authenticated client for use of the chosen service and if yes, how long it can be used.

If the IVR platform is adjusted to work with ANI, the first an IVR-application will is calling to system with an inquiry about existence of the defined calling number in the list active ANI numbers, that is will try to authenticate the calling number. Extremely important to remember that the automatic telephone exchange is responsible for definition of the calling number, soon its settings depends operability of all services, which are based on authorization on ANI. For example, if the subscriber is defined by telephone number (7 495)1234567 on automatic telephone exchange as 4951234567, in order to connect to the service ANI, it is required to register in billing system 4951234567 as ANI.

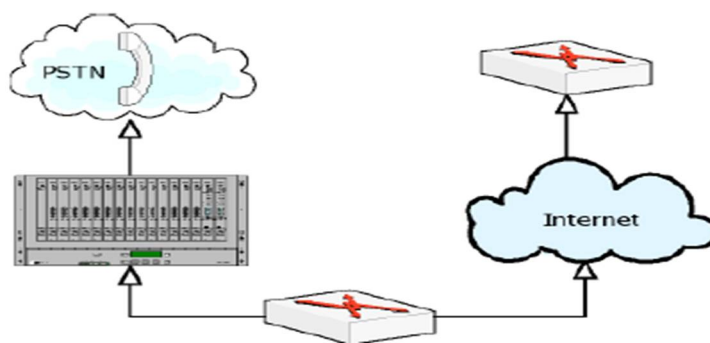
As the intermediary between billing and an IVR-application is RADIUS server which accepts all requests of the applications on RADIUS protocol, transform; them and broadcasts to billing. By the same principle, but answers billing on inquiries pass on the system in reverse order.



**Figure №3. The IVR platform is adjusted to work with ANI**

If attempt of termination fails, for example, because of overflow of capacity at vendor (the supplier of service) of the chosen direction, subscriber is reported about failure and the appendix finishes the performance. Successful termination, of course, does not mean that a call will be successful (conversation will be made) as the dialed number can be busy or there won't be answer. If the voice lock receives from the naming party a signal that the dialed number is busy, the IVR-application will notify the client on it and will suggest to take another number. For a reset of the last dialed number (Redial function) it is enough that client press the combination "zero and a lattice" (0#) on the phone. Unfortunately, often naming the party is under technical control of vendor, which does not guarantee right settings on the naming equipment.

In this case, voice lock cannot receive a signal about busy number, the client will hear short beeps and will not be able to interrupt them in any way, but stop calling. IVR- appendices comes to the end only after the client hangs up or after the timeout. Shortly before the expiration of a timeout, the IVR-application warns the subscriber about the future shutdown. However the client cannot wait for its termination and return to the voice menu pressing "a long lattice" (long pound), that is to hold a lattices symbol (#) more one second.



**Figure№4. Initiating a call**

Moreover, users of mobile communication for the same purposes can use a combination "eight lattice" (8#). Except access to the service IP-telephony, the subscriber in the main menu of an IVR platform can fill up the balance at the expense of a service telephone card (1#) and also to register the telephone number as ANI number (2#).

The timeout exposed by authorization for debit PIN or ANI number can be automatically reduced by value of the global variable set in a global configuration. The similar correction is useful in that case when the user completely utters the balance, and before coming to the end, the IVR-application says the farewell phrase, however duration of this phrase can vary depending on language (for example, in the Vietnamese language it borrows the whole 6 seconds). Often voice locks are set off by these some seconds in the conversation duration and by that the operator risks to receive "minus" on balance of the subscriber that is especially critical at constant price. Having put this global variable in 6 seconds, we completely exclude similar risks.

To summarize I want to tell that this system will help to the administration of the university and to entrants who want to arrive to here. In addition, I think that in respect of that will help to increase authority of our university, that such system isn't introduced in the systems of educational institutions of the Republic of Uzbekistan yet.

I hope that this article will help customers to develop requirements to a modern IVR platform. Moreover, will show to developers that the similar task has the fast and reliable decision, which will allow increasing functionality without in the future attraction of big human resources, to carry out support of new protocols and data sources, to develop new voice applications in the future.

#### **List of abbreviations:**

**IVR**- Interactive Voice Response;  
**ANI**- Automatic Number Identification;  
**VoIP** - Voice over Internet Protocol;  
**BS** - Basic station;  
**CIS** - Commonwealth of Independent States;  
**TCL** - Transistor coupled logic;  
**PIN** - Personal Identification Number;  
**PSTN** - Public Switched Telephone Network;  
**SMS** - Short messaging system;  
**DPS** – Data processing center

#### **INTERNET RESOURCES:**

1. [www.deltann.ru](http://www.deltann.ru)
2. [www.alincognito.ru](http://www.alincognito.ru)
3. [www.bsproject.net](http://www.bsproject.net)
4. [www.osp.ru](http://www.osp.ru)
5. [www.sushkov.ru](http://www.sushkov.ru)

#### ***VIDEO CONFERENCING***

***V.E. Kim, D.Kh. Kadirbekova***



***Summary:** This article describes an idea to the reader about basic advantages of using videoconferencing. The article gives understanding of using videoconferences in the different spheres of economy and society. Also reader can get information of basic necessary equipment for videoconferencing.*

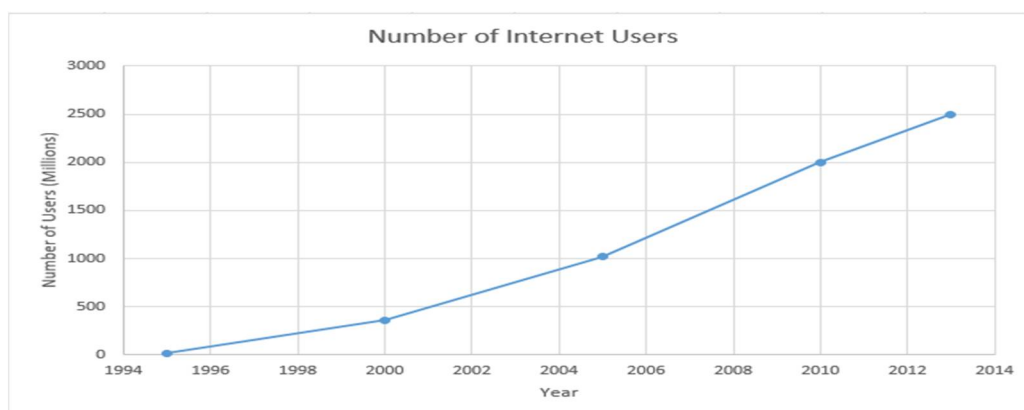
***Keywords:** videoconference, «technical boom», distance education, visual collaboration, distance medical diagnostic, territory independent, mobile videoconferences, PTZ camera, time and financial economy, experience exchanging.*

### “A GREAT LEAP FORWARD”

The first telephone set was invented in 1875 by Alexander Bell. At that time it looked like a wonder- people can talk to each other in the distance. From those times passed more than one hundred years and telecommunication technologies accomplished the big «technical boom». It was assisted by appearance of world global network «Internet» at the end of 20 century. Also called as «World Wide Web» the Internet connected billion people from over the 190 countries of the world. With development of internet technologies has appeared great number of different services such as an e-mail, social networks, instant messaging, files hosting and etc. Taking into account statistics each 3 person in the world uses different Internet services.

***Around 40% of the world population has an internet connection today. In 1995, it was less than 1%. The number of internet users has increased tenfold from 1999 to 2013.***

*The first billion was reached in 2005. In 2010 the number of user has grown up to approximately 2 billion. Today we have over the 2.5 billion internet*



*users.*

## VIDEOCONFERENCING

In this article I would like to tell on more detailed about one of the internet services as **videoconferencing**. First of all, we need to define the meaning of a term «videoconference».

*Videoconferencing is the conduct of a videoconference by a set of telecommunication technologies which allow two or more locations to communicate by simultaneous two-way video and audio transmissions. It has also been called 'visual collaboration' and is a type of groupware*

In plain language, using this service you can see and hear your interlocutors who are in the different places of planet. The amount of videoconference participants can exceed more than twenty users in one moment. People will not have to spend plenty of time and money to meet and discuss something together. Due to services of videoconferences it became possible without leaving the house or office. Mastered information content at the use of videoconference is equal approximately 60% that time as at the personal meeting is – 80%. It followed that the communication in videoconference is similar as in live interaction.



Also benefits of videoconferencing reflected in medicine. With appearance of videoconferencing began not necessarily to visit medical establishments. To get consultation of literate specialist and diagnostics of disease now maybe and in the remote mode. Besides, using the instruments of joint work, if they are envisaged in the VC system, patient with a doctor have the opportunity to interchange different documents - a patient can pass to the doctor a hospital chart, and doctor, in turn, to show the license of clinic. For such aims it comfortably to use simple client applications working over the internet. Also there are the special distinguished mobile systems for the use directly among medical workers. Such systems are an universal mobile portable decision in that all necessary equipment and software are built-in for videoconferencing. They are intended for translation of surgical operations or for integration and transportation in the corteges of ambulance.

If we talking about government organizations we can say that the table of contents of government staff requires large charges, foremost - on business trips and telephone connection. At the use of VC system it is possible considerably to economize on journeys, as videoconferencing is the wonderful alternative of the real meeting. For organization of the permanent online meeting between subdivisions the best of all to distinguish an apartment under video voice.

Access to the lectures of the best institutions of higher learning of country for students from territorial remote regions, and also possibility of educating for people with limit possibilities - videoconferencing allows to get knowledge

keeping indoors from home. The variety of the modes of videoconferencing befits for any types of lessons and exposition of material in Institutions of higher learning, be that lecture or acceptance of verbal tests for students. For example, the videocall of 1-to-1 will suit for the personal reading with a private tutor, group types of conferences - for seminars and reception of tests, and the mode of videotranslation and videobroadcasting will become the wonderful instrument of conduct of teaching lectures not requiring a feed-back for them.

- Territory independent
- Knowledge receipt control
- Experience exchanging

## **EQUIPMENT**

Depending on a place and connecting method of videoconference, different peripheral equipment can be required. Qualitatively to equip a voice room, it is necessary to observe the great number of nuances. Naturally, what them anymore, the higher cost of preparation. First of all, it is necessary correctly set the system of sound amplification, on this theme there was a good lecture on one of Video of Conferences. If hall small, then it will be enough to set one or a few speakerphones (it is the special devices combining in itself one or a few microphones and loud speakers, and intended for a removal echo and noises). Then will be required PTZ video camera, from ordinary it is distinguished by possibility to turn, bend over upwards and downward, and also to approach and delete. Such chamber can both in hand and automatic modes (a special will be required for this purpose. equipment) switched between the persons of speakers and hall. As a system a reflection is recommended the use two screens of large diagonal: one for video of participants, second for presentations and other content.

Well and the last aspect of perfect community is quality of apartments : good luminosity, contrasting, but not bright background on walls, noise suppression

panels and other. Apparently, cost of equipment of voice room depending on the chosen decision of videoconferences, peripheral equipment and finishing can differ on an order.

### **MOBILE VIDEOCONFERENCES**

One of advantages of videoconferences is their mobility. They can be used, even being in a journey or in motion. A device that can come forward as a terminal of videoconferences is smartphone, plane-table computer or even clock. It is enough to set the special application on them. The producers of these devices had equipped them thoroughly: frontal chamber, powerful central processing unit, hardware support of video codecs (that including needed and for viewing of films or YouTube), well and good loud speaker and microphone - it in itself understood. Such method of videoconferencing will allow to be you always on connection with the colleagues, partners on business, friends or relatives without depending on circumstances.

On the other hand, there is a row of the complications related to the mobile videoconferences, some industries yet coming to decide, to do their truly comfortable and popular, as at PC.

### **CONCLUSION**

System VC, in fact, already becomes one of important instruments of optimization of management and business processes. They help to overcome the problems related to the territorial remoteness of public institutions and separations of different companies, create the single integrated of communication environment.

VC system not only saves time, financial resources but also frequently serves as for companies an attractive imaginary factor. And alike, in time propulsive to introduction of VC systems of reason will become only more actual. It and requirement in the on assignment cost cutting, and economy of time of employees (generously expended now on flights and subsequent adaptation with acclimatization), and even caring about ecology - in fact reduction of number of

flights means reduction of harmful extras in an atmosphere.

In the conditions of crisis, when most companies have to search the ways of the operating cost cutting, abbreviate a personnel and close regional offices, introduction of VC systems can become the means of maintenance of current status at the substantial cutback of spending. And flexibility of the system of videoconferencing integrated with the environment of the up-diffused protected access to the corporate network will allow continuously doing business in any terms - and even notably to save on the lease of office apartments that in a number of cases will appear simply unnecessary.

In spite of expensive cost, videoconferences will play an important role in all spheres of social functioning of men. In the near future its introduction will happen in all industries of economy of the states. To development of videoconferences it is necessary to belong similarly responsibly as well as to appearance of telephony on the whole.

#### **INTERNET RESOURCES:**

1. [www.wikipedia.org](http://www.wikipedia.org)
2. [www.searchmobilecomputing.techtarget.com](http://www.searchmobilecomputing.techtarget.com)
3. [www.webex.com](http://www.webex.com)
4. <http://www.insotel.ru/>
5. <http://www.csu.edu.au/division/dit/services/service-catalogue/video-conferencing/>

#### **NETWORK TRAFFIC MONITORING OF PASSIVE OPTICAL NETWORK**

*Nikitin D.A., Atashikova N.P.*

**Summary.** *This article is devoted to problems of traffic monitoring, viewed existent and perspective technologies of detecting defects and unauthorized access, theirs advantages and disadvantages.*

**Key words:** *PON, passive optical network, access network, multiservice, methods of diagnostic, OTDR, information security.*

The technology of passive optical networks PON - relatively young, constantly evolving technology, and today there are many issues related to the study of the reliability of the networks that are based on this technology. In this case, development of methods for monitoring a passive optical access networks, and methods for improving the stability of their work is relevant today subject.

Importance of ensuring the efficiency of multiservice communication networks that are based on technology PON, is a prerequisite for their proper functioning and further development.

Any impact on the network components that can cause damage or destruction of the active and passive components, which also leads to a loss, distortion and blocking access to information transmitted over a communication network, called a harmful influence on the multiservice communication network.

There are seven of the most important basic features of external influences:

- natural;
- the degree of premeditation manifestations;
- source of exposure;
- location of the source of harmful exposure
- the stages of user access to resources or programs of communication networks;
- a method for accessing resources of communication networks;
- the degree of impact on the network.

For multiservice networks, negative impacts can be represented as a set according to the network model OSI.

Negative impacts on the physical level, which can be both naturally occurring and composite (synthetic), are aimed at the functional elements of the communication network. In this group can be enable unauthorized connections to the switch ports and fiber optic links. In multiservice networks impact of this group lead to the destruction or damage of communication channels and switching equipment.

At the link level possible unauthorized access to network resources, leading to a blockage or loss of connection. In PON networks to protect against unauthorized access using encryption of network traffic, which can significantly improve the security of the transmission as proprietary information and personal information of subscribers.

The network layer is responsible for determining the route and logical addressing. At this layer possible to replace the address information in the service unit, the substitution of records in databases of local management interface, the substitution of records in databases gateway, which can lead to the destruction of one or more joints and loss of information.

The transport layer is responsible for the direct connection between the ends (senders and recipients) and reliability. At this layer may be affected and the destruction of the connection, change the type of transmitted data, service's parameters, relationships between functional elements, etc.

In PON networks information between users or network segments passes through line terminal OLT. In this case, the presence of only one communication channel can be in violation of the operation of the central node OLT disable a network segment PON. To prevent such situations, you need to use different methods of backup channels of communication and terminal equipment. However, the most vulnerable point in passive optical networks is the physical transmission medium, in addition to her attacks are subject to ONT and, to a lesser extent OLT.

PON, like any network that uses multiple access, has a number of disadvantages. One of the drawbacks associated with the presence of common data



channel, which can result in failure of the whole PON network segment because the attacker actions or faults of network equipment. In addition, the networks PON network state diagnosis is difficult, especially in the absence of control points.

One of the weaknesses in PON networks are terminal equipment failures that may occur for the following reasons:

- incorrect adjustment of the equipment by the network administrator, which leads to loss of information, as well as user error;
- changes in the software of the terminal equipment by service personnel;
- failure of the user terminal equipment (ONT) which can lead to failure of the entire network.

- From the point of view of information security in PON communication lines, possible the following threats:

- analysis of the traffic transmitted over PON;
- damage to the optic communication lines;
- destruction, distortion and blocking of data passing through the communication lines;
- introduction of error messages in total flow, and network viruses.

There are some methods of diagnosis:

- method of control signals. With this method routes signals are transmitted, whose main task is to detect problems of communication and connection. These signals are transmitted at frequencies which are not involved in the transfer of information;

- power determination method of a wideband signal. This method consists in monitoring the power level of the received signal and comparing it with a threshold value. Determination of the power of the received signal allows the detecting signal changes. The disadvantage of this method is that the use of statistical methods requires time, and small deviations cannot be detected;

- method for the analysis of the optical spectrum. By analyzing the optical spectrum can be controlled by changes in the spectrum of the signal, even if the

total power of the received signal remains unchanged. Despite the large informative, compared to the method of comparing power, this method is based on statistical averages, time-consuming to average values, takes more time, and also leads to situations where a rare case of deterioration will either are not defined or defined by a significant time;

- method of optical reflectometr, which analyzes the characteristics of the reflected signal controlling. This method is used to identify the location and nature of the heterogeneity, as well as losses in the optical fiber. To diagnose PON problems requires special expensive equipment (OTDRs, traffic analyzers), but even in this case the problem is quite difficult to find due to the presence in the network of passive splitters.

Despite a number of methods to investigate, the state of the optical line now is difficult to keep track of faults in real time.

This is due to the fact that the PON network can contain more than one optical coupler, i.e. is based on the cascade principle. In such conditions, the use of reflect meter is impossible because tree topology network, gives rise to many points of reflection of the probe signal and the time delay between the probing signal reflections from points located at different distances.

Currently, work is underway related to the development of new methods for fault detection and tampering. They are based on comparing the received signal with the value obtained in the mathematical modeling of a communication channel. However, in view of the dynamic nature of the users change, and hence network architecture the use of such methods in the PON is difficult.

In this way, for PON networks require new methods of fault detection and unauthorized actions that need to combine a high degree of protection and high technical and economic indicators.

## GAUSSIAN APPROACH ANALYSIS

*S. Tosheva, S.K. Juraeva*

**Summary.** *This paper presents a performance analysis approach for OCDMA network, which takes into account both the physical layer characteristics and access schemes.*

**Key words:** *Wavelength division multiple access (WDMA), optical time division multiple access (OTDMA), optical code division multiple access (OCDMA), bit error rate (BER), probability density function (PDF), signal-to-noise ratio (SNR), digital signal, division multiplexing.*

Introduction. Since the speed at which electrical signal can modulate optical carriers is limited, to fully exploit the optical fiber bandwidth, optical multiplexing techniques have to be deployed. There are three multiplexing alternatives: wavelength division multiple access (WDMA), optical time division multiple access (OTDMA) and optical code division multiple access (OCDMA). The term “division multiple access” is used throughout, rather than “division multiplexing”, to define not simply the transmission multiplex but in addition indicates the access, routing and switching functionality. Whilst WDMA and OTDMA techniques partition the available spectrum and time to different users, respectively, OCDMA techniques multiplex users simultaneously and asynchronously (or synchronously) across the same spectrum and timeslot through a unique code.

### *Optimal Threshold*

Noise in the communication systems is generally assumed as a random variable obeying Gaussian distribution whose probability density function (PDF) can be expressed as:

$$p(x) = \frac{1}{\sqrt{2\pi}\sigma^2} e^{-(x-\mu)^2/2\sigma^2} \quad (1.1),$$

Where  $i$  is the mean and  $a^2$  is the variance of the variable  $x$ . In digital communication system, there are only two signal patterns: 0 and 1. When signal pattern is 0, the received signal can be considered as a Gaussian variable with mean  $i_0$  and standard deviation  $a_0$ . When signal pattern is 1, we consider the received signal as a Gaussian variable with mean  $i_1$  and standard deviation  $a_1$  as shown in Figure 4.9. For any given decision threshold, the BER in the case of a 0 signal pattern (denoted as  $P_e(0)$ ) corresponds to the area under the PDF curve ( $i_0, a_0$ ) to the right of the threshold line; while the BER for a 1 signal pattern (denoted as  $P_e(1)$ ) corresponds to the area under the PDF curve ( $i_1, a_1$ ) to the left of the threshold line. If the probability of sending 1 and 0 are  $P(1)$  and  $P(0)$  respectively, the total BER can be written as:

$$P_e = P(0)P_e(0) + P(1)P_e(1) \quad (1.2)$$

Assuming that probabilities of sending 0 and 1 are equal, we have:

$$p(x) = \frac{1}{2}[P_e(0) + P_e(1)] \quad (1.3)$$

In this case, the optimal threshold lies at the point where  $P_e(0) = P_e(1)$  and the total BER corresponds to the shadowed area in Figure 2.1. A linear approximation of the optimal threshold can be expressed as:

$$Th_{sub-optimal} = \frac{\mu_1\sigma_0 - \mu_0\sigma_1}{\sigma_1 + \sigma_0} \quad (1.3)$$

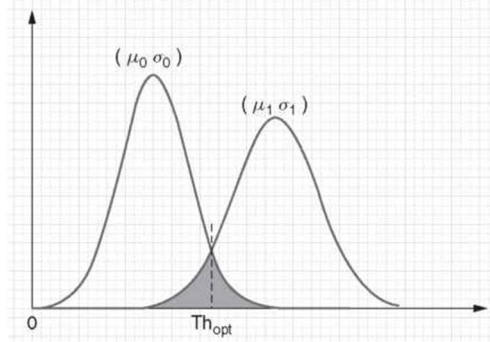
## 1.2 Signal-to-Noise Ratio and Bit-Error Rate

Signal-to-noise ratio (SNR) is an important parameter in an analogue communication system. Since all digital signals are finally transmitted as analogue waveforms, there is a relation between the SNR of the received analogue waveforms and the BER after decision. Here we define SNR by the following equation:

$$SNR = \frac{[\mu_1 - \mu_0]^2}{[\sigma_1^2 + \sigma_0^2]/2} \quad (1.4)$$

when  $a_1^2 = a_0^2 = a^2$ , this becomes:

$$SNR = \frac{[\mu_1 - \mu_0]^2}{\sigma^2} \quad (1.5)$$



**Figure 2.1** Optimal threshold in Gaussian approximation

Assuming that the statistics of the received signals obey Gaussian distribution, thus

$Th_{opt} = (\mu_1 + \mu_0) \frac{1}{2}$  and the BER can be calculated as:

$$P_e(0) = P_e(1) = \frac{1}{\sqrt{2\pi}\sigma} \int_{Th_{optimal}}^{\infty} e^{-(x-\mu_0)^2/2\sigma^2} dx = \frac{1}{\sqrt{2\pi}} \int_{\frac{Th_{optimal}-\mu_0}{\sigma}}^{\infty} e^{-t^2/2} dt \quad (1.6)$$

$$Q(x) = \frac{1}{\sqrt{2\pi}} \int_x^{\infty} e^{-t^2/2} dt \quad (1.7)$$

By defining and the final BER can be expressed as:

$$P_e = [P_e(0) + P_e(1)]/2 = Q\left(\frac{Th_{optimal} - \mu_0}{\sigma}\right) = Q\left(\frac{\mu_1 - \mu_0}{2\sigma}\right)$$

or as [10, 19, 20]:

$$(1.8) \quad P_e = \frac{1}{2} \operatorname{erfc}\left(\frac{\mu_1 - \mu_0}{\sqrt{8}\sigma}\right) = \frac{1}{2} \operatorname{erfc}\left(\sqrt{\frac{SNR}{8}}\right)$$

(1.9)

### 1.3 Gaussian Performance Analysis

The following assumptions should be considered for mathematical simplicity of the system analysis:

- Each light source is ideally polarized ( $P_D = 0$ ) and its spectrum is flat over the bandwidth  $[v_0 - A/2, v_0 + A/2]$ , where  $v_0$  is the central optical frequency and  $A$  is the optical source bandwidth in Hertz.
- Each power spectral component has identical spectral width.
- Each user has equal power at the receiver.
- Each bit-stream from each user is synchronized.

In this section, we will analyze that system by Gaussian approximation taking into account intensity noise as well as the shot noise and thermal noise at the optical receiver. The effect of the receiver's dark current is neglected.

According to Equation, the variance of photocurrent due to the detection of an ideally polarized thermal light (where  $P_D = 0$ ) can be expressed as:

$$\langle i^2 \rangle = 2eIB + I^2 B \tau_c + 4KT_n B / R_L \quad (1.10)$$

If  $c_k(i)$  and  $c_l(i)$  denote the  $i$ th element of the  $k$ th MQC code sequence and its

$$\sum_{i=1}^N c_k(i) c_l(i) = \begin{cases} P + 1, & k = l \\ 1, & k \neq l \end{cases}$$

Hence,

$$\sum_{i=1}^N c_k(i) \bar{c}_l(i) = \begin{cases} 0, & k = l \\ P, & k \neq l \end{cases} \quad (1.11)$$

(1,12)

complement respectively, code properties can be written.

Based on the assumptions, we can analyze the system performance using Gaussian approximation now. The power spectral density (PSD) of the received optical signals can be written as.

$$r(v) = \frac{P_{sr}}{\Delta v} \sum_{k=1}^K d_k \sum_{i=1}^N c_k(i) \left\{ u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i - 2) \right] - u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i) \right] \right\} \quad (1.13)$$

Number  $N$  is the MQC code-length given by  $N = P^2 + P$ ,  $d_k$  is the data bit of the  $k$ th user that is 1 or 0, and  $u(t)$  is the unit step function expressed as:

$$u(t) = \begin{cases} 1, & t \geq 0 \\ 0, & t < 0 \end{cases}$$

Therefore, the PSDs at the photo detectors PD<sub>1</sub> and PD<sub>2</sub> in Figure 4.6 of the  $l$ -th receiver during one bit period can be written as [10]:

$$G_1(v) = \frac{1}{P} \frac{P_{sr}}{\Delta v} \sum_{k=1}^K d_k \sum_{i=1}^N c_k(i) \bar{c}_l(i) \left\{ u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i - 2) \right] - u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i) \right] \right\}$$

$$G_2(v) = \frac{P_{sr}}{\Delta v} \sum_{k=1}^K d_k \sum_{i=1}^N c_k(i) c_l(i) \left\{ u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i - 2) \right] - u \left[ v - v_0 - \frac{\Delta v}{2N}(-N + 2i) \right] \right\} \quad (1.14)$$

And then:

$$\int_0^\infty G_1(v) dv = \frac{1}{P} \frac{P_{sr}}{\Delta v} \sum_{k=1, k \neq l}^K \left[ P \frac{\Delta v}{N} d_k \right] = \frac{P_{sr}}{N} \sum_{k=1, k \neq l}^K d_k \quad (1.15)$$

$$\int_0^\infty G_2(v) dv = \frac{P_{sr}}{\Delta v} \left\{ (P + 1) d_l \frac{\Delta v}{N} + \sum_{k=1, k \neq l}^K \left[ \frac{\Delta v}{N} d_k \right] \right\}$$

$$= \frac{P_{sr}}{N} (P + 1) d_l + \frac{P_{sr}}{N} \sum_{k=1, k \neq l}^K d_k$$

To calculate the integrals of  $G^2(v)$  and  $G(v)$  given in Equations (1.14) and (1.15), let us first consider an example of the spectral density function,  $G'(v)$  of the received superposed signal, where  $a(i)$  is the amplitude of the  $i$ th spectral slot with width  $(\Delta v/N)$ .

The integral of  $G'^2(v)$  can be expressed as :

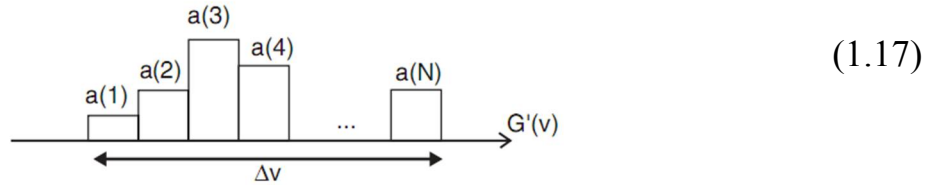
$$\int_0^\infty G'^2(v)dv = \frac{\Delta v}{N} \sum_{i=1}^N a^2(i) \quad (1.16)$$

Therefore, using the code properties as expressed in Equations (1.5) and (1.6)

we have:

$$\int_0^\infty G_1^2(v)dv = \frac{1}{P^2} \frac{P_{sr}^2}{N \Delta v} \sum_{i=1}^N \left\{ \bar{c}_l(i) \cdot \left[ \sum_{k=1}^K d_k c_k(i) \right] \cdot \left[ \sum_{m=1}^K d_m c_m(i) \right] \right\}$$

$$\int_0^\infty G_2^2(v)dv = \frac{P_{sr}^2}{N \Delta v} \sum_{i=1}^N \left\{ c_l(i) \cdot \left[ \sum_{k=1}^K d_k c_k(i) \right] \cdot \left[ \sum_{m=1}^K d_m c_m(i) \right] \right\}$$



**Figure 2.2** Graphic representation of the spectral density of the received signal  $r(v)$

In the above equations  $d_k$  is the data bit of the  $k$ th user that is either 1 or 0. Consequently, the photocurrent  $I$  can be expressed as:

$$I = I_2 - I_1 = \Re \int_0^\infty G_2(v)dv - \Re \int_0^\infty G_1(v)dv = \Re \frac{P_{sr}}{P} d_l \quad (1.18),$$

where  $R$  is the responsivity of the photo detector given by  $R = (ne)/(h\nu_c)$ . Here  $n$  is the quantum efficiency,  $e$  is the electron's charge,  $h$  is the Planck's constant, and  $\nu_c$  is the central frequency of the original broadband optical pulse. Since the



noises in PD1 and PD2 are independent, the power of noise sources that exist in the photocurrent can be written:

$$\langle I^2 \rangle = \langle I_1^2 \rangle + \langle I_2^2 \rangle + \langle I_{th}^2 \rangle = 2eB(I_1 + I_2) + BI_1^2\tau_{c1} + BI_2^2\tau_{c2} + 4K_bT_nB/R_L$$

Therefore,

$$\begin{aligned} \langle I^2 \rangle = & 2eB\Re \left[ \int_0^\infty G_1(v)dv + \int_0^\infty G_2(v)dv \right] \\ & + B\Re^2 \int_0^\infty G_1^2(v)dv + B\Re^2 \int_0^\infty G_2^2(v)dv + 4K_bT_nB/R_L \end{aligned} \quad (1.19)$$

When all the users are transmitting a bit 1, using the average value as  $\sum_{k=1}^K c_k(i) \approx K/P$  and the code correlation properties, the noise power can be written as:

$$\langle I^2 \rangle = \frac{B\Re^2 P_{sr}^2 K}{\Delta v (P+1)P^2} \left( \frac{K-1}{P} + P + K \right) + 2eB\Re P_{sr} \left[ \frac{P-1+2K}{P^2+P} \right] + 4K_bT_nB/R_L \quad (4.36)$$

Noting that the probability of sending a bit 1 at any time for each user is 50%, the above equation becomes:

$$\langle I^2 \rangle \cong \frac{B\Re^2 P_{sr}^2 K}{2\Delta v (P+1)P^2} \left( \frac{K-1}{P} + P + K \right) + eB\Re P_{sr} \left[ \frac{P-1+2K}{P^2+P} \right] + 4K_bT_nB/R_L \quad (4.37)$$

From Equations (4.37) and (4.33) we can get the average SNR due to intensity, shot and thermal noises as:

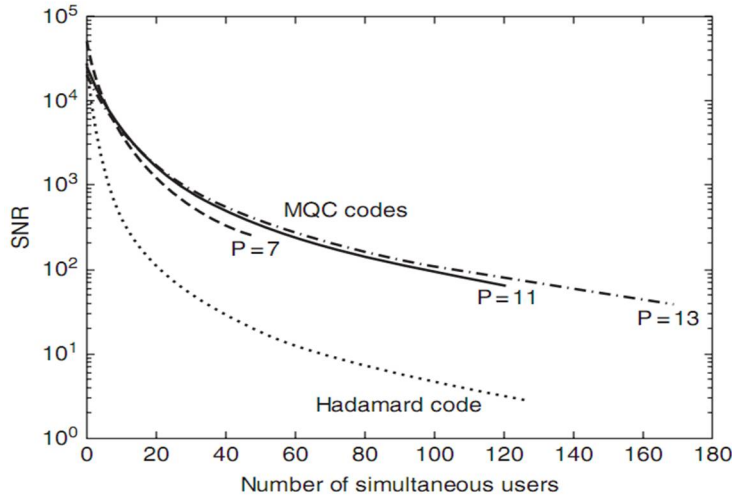
$$SNR = \frac{(I_2 - I_1)^2}{\langle I^2 \rangle} = \frac{\Re^2 P_{sr}^2 / P^2}{\frac{B\Re^2 P_{sr}^2 K [(K-1)/P + P + K] / [2\Delta v (P+1)P^2] + eB\Re P_{sr} (P-1+2K) / (P^2+P) + 4k_b T_n B / R_L}} \quad (1.20)$$

Consequently by using Gaussian approximation, the BER is expressed:

$$P_e = \frac{1}{2} \operatorname{erfc} \left( \sqrt{SNR/8} \right) \quad (1.21)$$

## 1.4 Numerical Results

The results discussions and analysis here are based on the ones. Figure 2.3 shows the relation between the number of simultaneous users and the SNR when the prime number used for MQC code construction is  $P = 7, 11$  and  $13$ , respectively. The parameters used in this analysis are listed in Table 4.1. The SNR curve of the former system using Hadamard codes (with the same pulse power and optical bandwidth) is also shown for a comparison purpose. In this figure, the received signal power from each user is  $-10$  dBm and the intensity noise is considered the main noise source. It should be noted that the SNR values plotted in this figure are all average values and each curve end at the point where the number of simultaneous users is equal to the code size. It has been shown that MQC codes give a much higher SNR when the received signal power is high. With a larger prime number  $P$  not only the number of accommodated simultaneous users is significantly increased, but also results in a higher SNR. Therefore, MQC codes can effectively suppress the effect of intensity noise and hence result in a much better performance. This suppression in fact comes from the lower in-phase cross-correlation of MQC codes than that of Hadamard codes under the same code-length. Although MQC codes have lower auto-correlation due to its lower code-weight than Hadamard codes, its in-phase auto-correlation-to-cross-correlation ratio is still larger. However, this lower autocorrelation will cause performance degradation when other noise sources are considered especially at low signal power, as discussed and analyzed later on in this section.



**Figure 2.3** SNR against the number of simultaneous users when  $P_{sr} = -10$  dBm

**Table 3.1** Typical parameters used in the calculation

Definitions	Symbols
PD Quantum Efficiency	$\eta = 0.6$
Thermal Source Linewidth	$\Delta\nu = 3.75$ THz
Operating Wavelength	$\lambda_0 = 1.55$ $\mu\text{m}$
Electrical Bandwidth	$B = 80$ MHz
Data Bit Rate	$R_b = 155$ Mbps
Receiver Noise Temperature	$T_r = 300$ K
Receiver Load Resistor	$R_L = 1030$ $\Omega$

Figure 2.4 shows variations of the BER with the number of simultaneous users when  $P_{sr} = -10$  dBm. For comparison purposes, BER variations of the former system that uses Hadamard codes are also included. In the former system, since we also send a pulse when data bit is 0, the formula used to calculate the BER becomes  $P_e = 1 - \text{erfc}(V\text{SNR}/2)$ . It has been clearly shown that the system using MQC codes has a much lower BER than the one that uses Hadamard codes. For example, when the required BER is  $10^{-9}$ , the system using Hadamard codes can only support about 38 users whereas the system using MQC codes can support about 80 simultaneous users when  $P = 11$  and more than 86 simultaneous users

when  $P = 13$ . When  $P = 7$ , the number of possible users is only limited by the code size (i.e. the number of available code sequences which is equal to 49).

Figure 2.5 depicts the BER variations with the received signal power  $P_{sr}$  when  $P = 7$  and the number of simultaneous users is 49. The solid lines represent the BER where the effects of intensity, shot and thermal noise have been taken into account. The dashed lines indicate the BER performance when the effects of only intensity and shot noise are considered. And the dotted lines indicate the system BER performance when only intensity and thermal noise sources are considered. It is shown that when  $P_{sr}$  is large, both the shot and thermal noise are negligibly small compared with the intensity noise, which becomes the main limiting factor of the system performance. However, when  $P_{sr}$  is low, the effect of intensity noise becomes minimal, and hence the thermal noise source becomes the main factor that limits the system performance. It is also shown that thermal noise is much more influential than shot noise on system performance.

Figure 2.3 illustrates the BER variations with  $P_{sr}$  when the number of simultaneous users is 49 and  $P = 7, 11$  and 13. The performance of the former system using Hadamard code is also shown for comparison. Figure 4.15 shows variations of the BER against the number of simultaneous users,  $K$ , for different values of  $P_{sr}$ . In Figures 2.3 and 2.4, the effects of the intensity, shot and thermal noise sources have been taken into account.

It is shown that when  $P_{sr}$  is less than -25 dBm, the former system with Hadamard codes will have better performance than the system using MQC codes. This is because the large value of prime number  $P$  causes a large power loss ( $\sim 1/P$ ) in the transmitter,

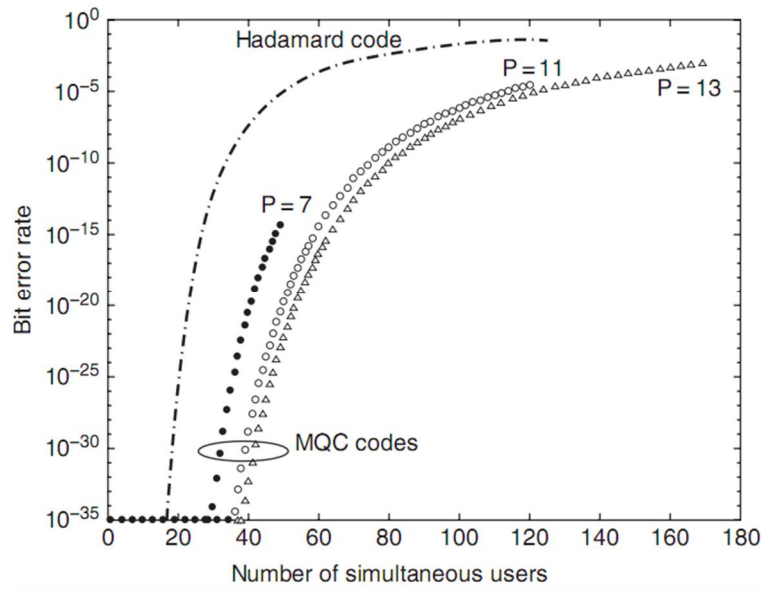


Figure 2.4 BER against the number of simultaneous users when  $P_{sr} = -10$  dBm

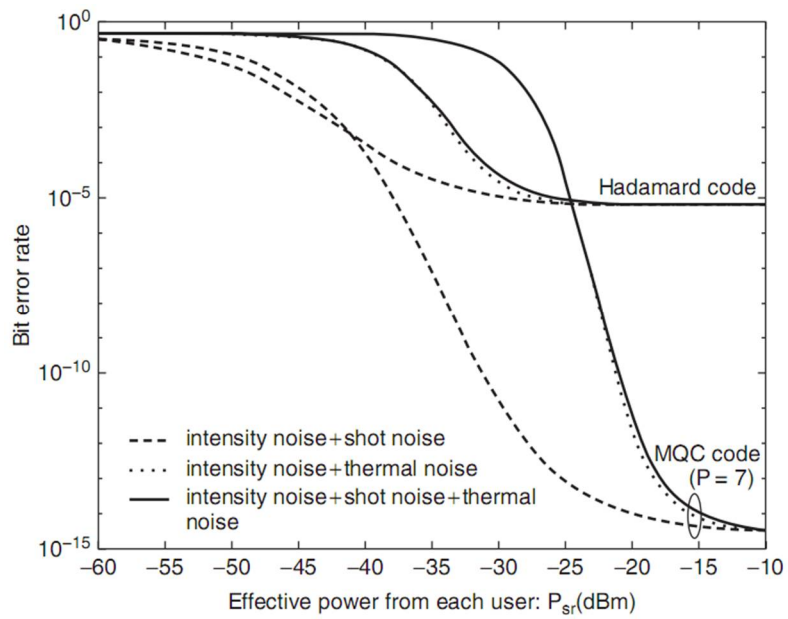
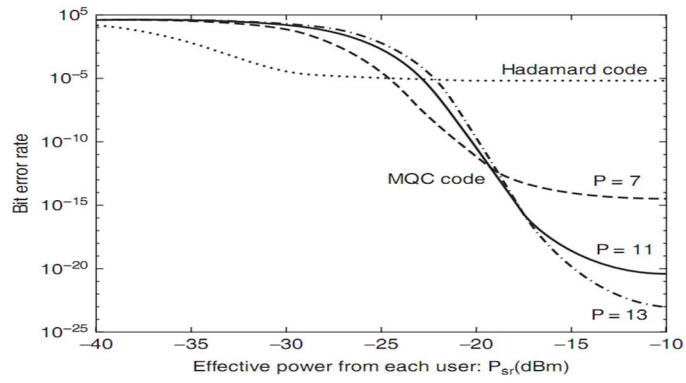
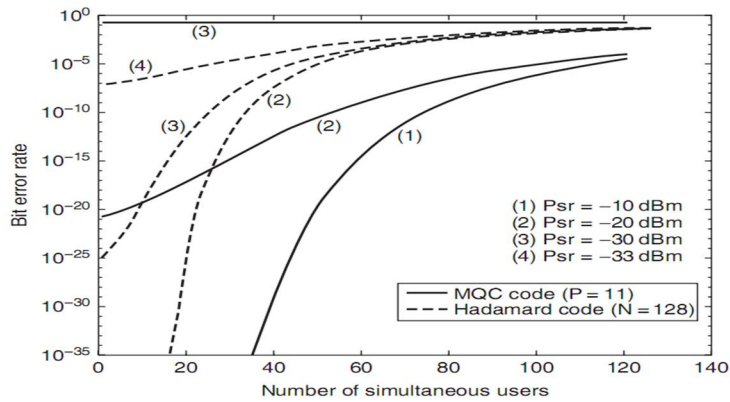


Figure 2.5 BER against the received signal power  $P_{sr}$  when  $P = 7$  and full-load



**Figure 2.6** BER against the received signal power  $P_{sr}$  when  $K = 49$  and considering the intensity noise, shot noise and thermal noise.



**Figure 2.7** BER against the number of simultaneous users under various  $P_{sr}$

and hence the shot and thermal noise sources will severely affect the system performance especially when  $P_{sr}$  is not sufficiently large. However, the power loss incurred by Hadamard encoding is always half regardless of the code-length. If an array of  $P + 1$  tuneable lasers is used, large optical power even after MQC encoder can be provided. In this case, the required tuneable range of each laser is only  $1/(P + 1)$  of the total optical bandwidth. This method does not have any limitation on the shape of power spectral density as in the case of thermal source and we can also enlarge the optical encoded bandwidth freely to get a higher SNR.

**Conclusion.** Therefore, although the coherent interference between the overlapped optical pulses with the same wavelength may cause degradation, a better performance is promised in such a laser-array-based system. We demonstrated the flexibility of this approach by analyzing a representative OCDMA system. The proposed approach have proven effective in characterizing

the network dynamics and in examining the effects of packet corruption and channel collision on network performance. By adopting the BER functions to account for the physical layer performance, this approach enables a generic platform to conduct packet-level performance comparisons among various OCDMA solutions.

#### **REFERENCES:**

1. Beyranvand H., Ghaffari, B.M. and Salchi, J.A, (2009) Multirate, differentiated- QoS, and multilevel fiber-optic CDMA system via optical logic gate elements.
2. Yang, C.C., Huang, J.F and Hsu, T.C. (2008) Differentiated service provision in optical CDMA network using power control.
3. Meenakshi M. and Andovich, I. (2006) Code-based all optical routing using two-level coding.
4. Ohtsuki, T. (1999) Performance analysis of direct-detection optical CDMA systems with optical hard-limiter using equal-weight orthogonal signaling.

### **CREATING WEB APPLICATION AND INFORMATION SYSTEM FOR UZBEK COMPANIES DURING THE PROCESS OF USING MONITORING**

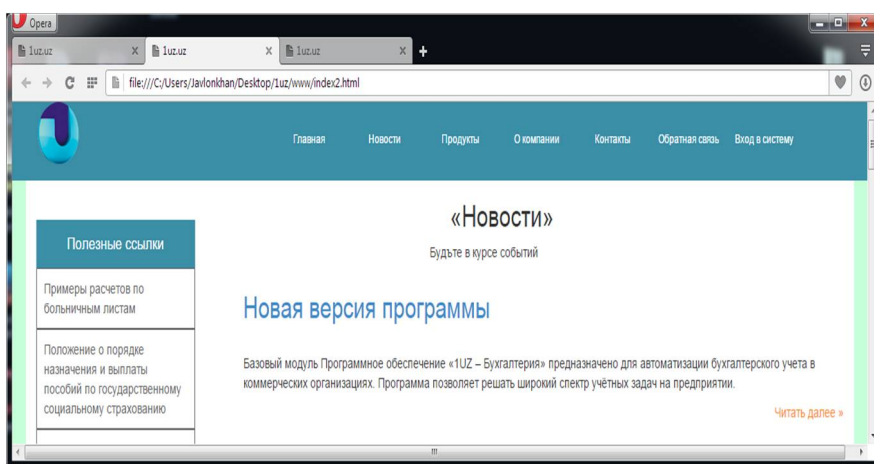
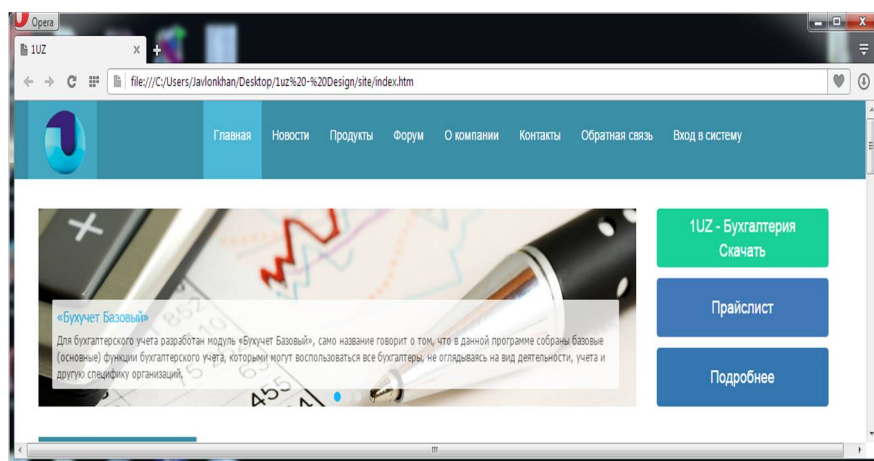
*J.D. Aripov, F.I. Safarova*

*Summary:* In this article the works are related with the creating web application and information system during the process usage of monitoring for Uzbek channels. And also a lot of decisions have been shown relating to each problem especially with the usage of monitoring in different ways.

*Key words:* automation of book-keeping, client-server structure, template, blocks of code, database, television, system of monitoring, users of the system, remote users, corporate users, central server and monitoring center.

In this intellectual and practical training I would like to demonstrate you my future individual projects which are related with computing systems and programming. Because of the reason that these projects are first steps to start my career as the web developer I can honestly say that all of them include fundamental modules and allows for users to get what they really need in near future. I can strongly support my opinion and have the reasons to prove it.

My first individual project was creating responsible web page which is distributed on server [www.1uz.uz](http://www.1uz.uz) for Uzbek company BePro-Norma. This project has been already finished. This is one of the most my biggest projects which i have ever done. The purpose of creating this project was related with company needs and with the automation of book-keeping.



So in this project i used the techniques of programming techniques including HTML, CSS, PHP& MySQL and Word Press pattern. Actually the process of creating this project was consisted of two parts. First part was creating the client



part of program design – pattern or template by using program development environments. The second part was developing server part by using techniques of basic program language and databases.

The client part was included 2 steps:

- 1) Identifying necessary program environment for creating template
- 2) Writing template structure using HTML and CSS

To compare with the client part the server part was the too long part. Because it was divided on several tasks:

- 1) Creating blocks of code using PHP
- 2) Creating Database
- 3) Linking blocks of code with Database
- 4) Working with Word Press Pattern

### **Second Project**

My second project is called creating information systems for uzbek television during the process of using system of monitoring. This is my future project. Actually monitoring is the systematic collection and processing of information, which can be used to improve the decision-making process, as well as, indirectly, to inform the public, or directly as a feedback tool for the implementation of projects, evaluation, analysis, or develop the right solution.

At present, more and more members of the media market, such as broadcasters, news and advertising agencies, carriers, and other regulatory authorities, faced with the task of monitoring television and radio channels. In this set of problems requiring solutions, is continuously expanding. Along with such "base" tasks as a control recording and archiving, all the more interest is more complicated – confirmation timeliness of output materials in air or detection of unauthorized changes to the content.

The urgency of the problem is creating any information system which will consist of list of requirements which should be implemented by the system. So the urgency of the problem for my system is to create an information system for

monitoring that keeps archives of video, audio, central and local television and radio channels broadcasting companies and esters to provide all users to use it.

Such an information system provides management company, department, body radio monitoring and analysis, employees of advertising and marketing department and other responsible members use 13 channels and 4 radio channels and all local TRC esters. A goal of preserving video and audio archive esters gives us the following advantages:

- for this system there is no need to use video and audio signals as well as the purchase of additional technical equipment

- in view of the fact that the software part of the system developed by the Center, it does not require a software implementation

- Due to the fact that this system is designed as a web interface, it can not operate in various information systems, as there is no access to download audio and video files.

- For entry into this system, each user can use its personal login and password.

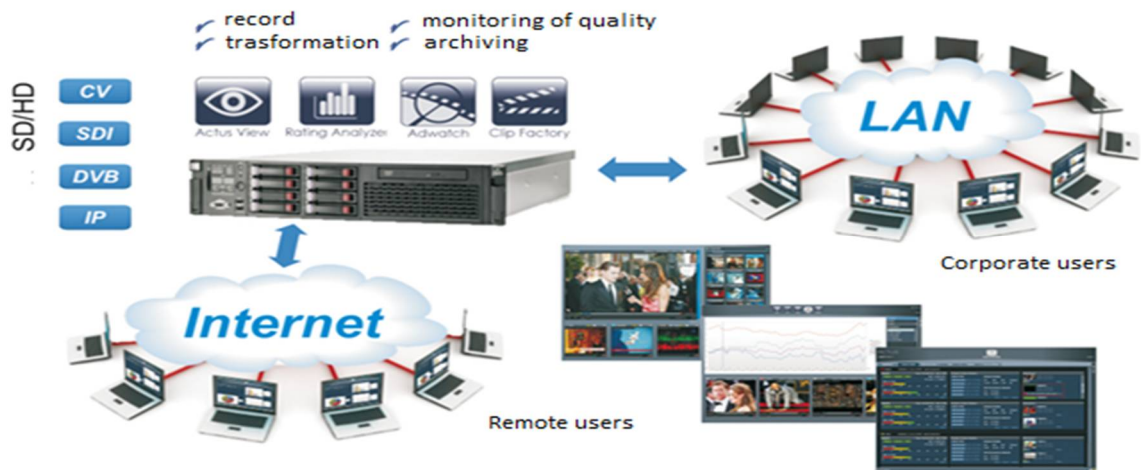
- This system has a database where all the information and user data stored in it.

- All materials esters may be stored in a qualitative condition within 3 months.

### **Approximate descriptive implementation of my future system monitoring**

(Actually my system consists of two parts: Local monitoring system and Distributed monitoring system)

#### **Local monitoring system**

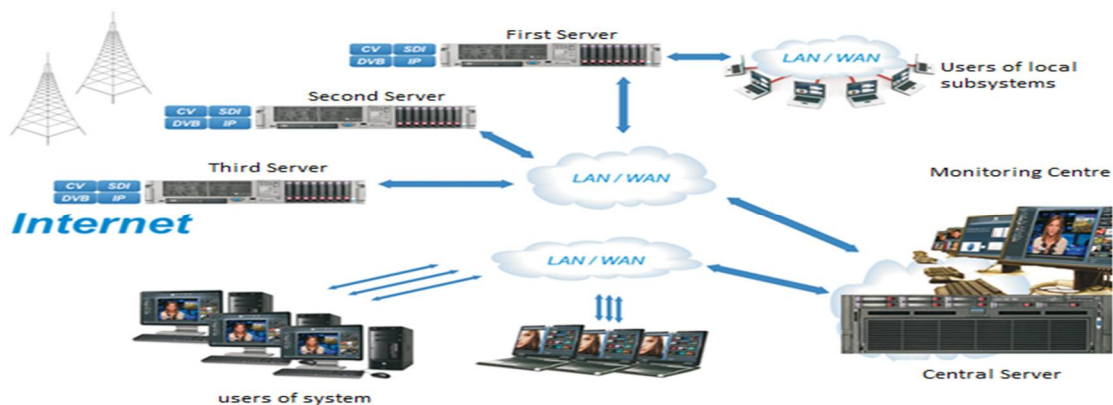


### Local monitoring system

The server processes the video analysis applied to its input TV / radio channels. All users have access to the server through the local area network (corporate users) or the internet (remote users).

This scheme is used to create control systems monitoring broadcast or recording (including remote) control at one point.

### Distributed monitoring system



### Distributed Monitoring System

Distributed monitoring system is designed for remote monitoring of broadcast over a large territory. Such a system would have a two-tier structure. On the lower level, as well as on the local system is remote servers video analysis. The upper level of the system – is the central server that aggregates the information and

provides it to the operator. In case of loss of communication between the central server and the remote server, all necessary information will be stored and, after the restoration of communications, will be transferred to the central server. It is important to note that such distributed systems may be a group of users who have access to only one video analysis server (users of local subsystems).

In conclusion i would say that both of my projects was stimulated on creating information system which could be helpful for user needs especially the system of monitoring is one of the best examples of this.

### **INTERNET RESOURCES:**

1. [www.snapstream.com](http://www.snapstream.com) – instrumental monitoring system
2. [www.stream-labs.com](http://www.stream-labs.com) – the work of monitoring in recording services
3. [www.emmc.gov.in](http://www.emmc.gov.in) – electronic media monitor center
4. [www.criticalmention.com](http://www.criticalmention.com) - media-monitoring, critical mention
5. [www.en.m.wikipedia.org](http://www.en.m.wikipedia.org) – monitoring software
6. [www.actusdigital.com](http://www.actusdigital.com)- monitoring and media management solutions

### **AUTOMATED TRADING SYSTEM WITH READY ELECTRONIC PRODUCT CATALOG**

***D.E. Tsay , G.N. Suleymanova***

***Summary.** This project is dedicated to the development of automated trading system with ready electronic product catalog. The electronic catalog will store reference information about all products and services. It will be possible to integrate the target audience of the project with the help of the trade automation system. The target audience is the entrepreneur (seller) and the customer (buyer), and users who are interested in the technical characteristics of products or exploitation. The main functions of the project are to make a comparison of the*

*goods, browse their descriptions and specifications in the Internet, view the product in 3D format, create a query (buy / sell), acquire a personal store (it is created automatically).*

**Key words:** *automated trading system, electronic product catalog, creating a query (buy / sell), goods with descriptions and specifications, personal store, Uznet, target audience (users), comparing the goods.*

## **Introduction**

Nowadays, there are many Uznet automated trading systems such as: <http://torg.uz>, <http://glotr.uz>, <http://itorg.uz> and so on. These projects are leaders in our country according to their income. The revenue of some projects are more than 20 million soums.

The aim of the project is to improve the online trading system and ensure maximum comfort to the user. This project is innovative.

## **Project Details**

Users are the audience of the project who needs for product (buyers) or are entrepreneurs (sellers). Their goal - is to buy or sell goods.

For sale / purchase is necessary to place the product on the site, and only after that the other user will be able to see the product.

Some of the users (in particular the entrepreneur) have problems with placing goods on the site and filling in the form which requires the mandatory fields (product name, manufacturer name, specifications, photos, etc.). As the user wants to know everything about the product, he (she) must visit the additional Internet resources for the necessary information,

Let's consider a ready analogue, for example, <http://torg.uz>. This project is a public bulletin board in the Internet with a quite simple design. Users place their

advertisements and announcements in order to buy or sell any product (in particular). During the placement of the goods, the user must describe the goods, so that others can simply understand about the announcement and what the user wants to sell or buy. It takes a lot of time for users to search for products from other resources, as well as paste the descriptions of goods. Only after these steps, it will be possible to enter the information about products on the merchant site.

Our project will also have a ready database of all goods and services. Database of all goods and services it is an electronic catalog of products. Electronic catalog of the project is a list of products. The list contains: photo, name, brief description, a flag (lock to add a product to comparison list) and the button "details". Individually, each product has: a full description, specifications, photos, 3D view and request form (purchase / sale). According to this directory there is no need to fill the information about any product, search the information about it. You just need to find a product on the site and specify:

- Type of request (purchase / selling)
- Price
- Annotation or comment of product's special features

Enquiry - a function, which records request (purchase / selling) of the user to a specific product. To create a query you must use the "Request Form" (see Fig. 1)

Форма создания запроса (теперь купить или продать легко)

Выберете.. : ВАШ ЗАПРОС

Выберете.. : СОСТОЯНИЕ

ЦЕНА:

цена продукта  сум

Ваш комментарий или критерий к продукту

Здесь Вы можете указать:

1. Подробную информацию о состоянии Вашего продукта
2. Особенность Вашего продукта: цвет, память (Гб) и тд.
3. О наличии гарантии продукта
4. Дополнительные телефоны, e-mail и тд.

Число с картинки




Fig. 1

Each product stores its requests. (Fig 2).

Смартфон Apple iPhone 6 Plus - Запросы пользователей

Дата	Запрос	Состояние	Цена	Телефон	Имя	Регион
11.03.2015, 23:24	Продам	Новое	5 000 000 сум	+99890 3467899	denis	г. Ташкент
02.03.2015, 21:52	Продам В КРЕДИТ	Новое	5 890 000 сум	+99890 3543352	Жамшид	г. Ташкент
18.02.2015, 22:59	Куплю	Новое	50 000 сум	+99890 0000001	dddd	Ташкентская область

Показать :

Fig. 2

As a result, if you select the product from the list (Fig. 1), users will be able to see full details of these product, as well as information about users who have made a request to the product.

**Comparison** – a feature that will allow comparing the quality of products.

**Comments and reviews** - each product will have comments and feedback.

Personal Store – a feature that will allow the user to have a personal store with the products on which the request was made for sale. Shop is generated automatically (Fig. 3).

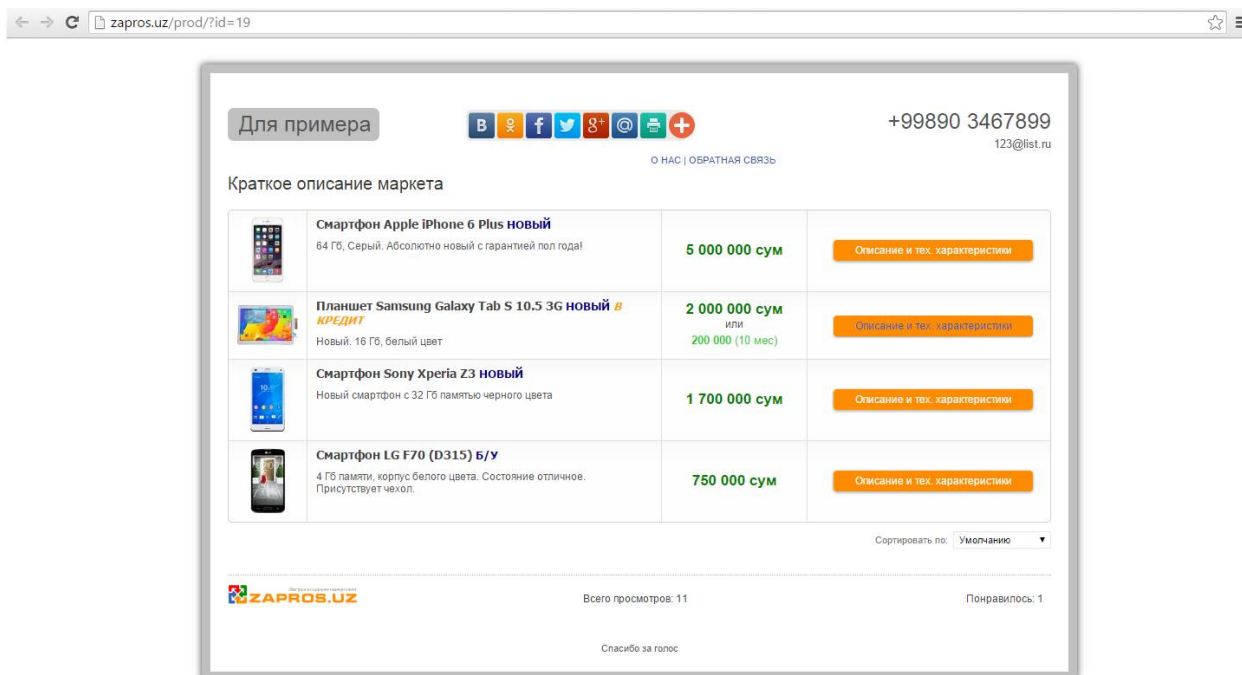


Fig. 3

Request Management – an account of the user. It is needed to edit and delete queries.

In conclusion, the authors would like to note that the project was based on the analysis of existent online trading systems. Having considered all the pros and cons of these systems, the authors have gathered the best features of all projects into one unique project. According to the authors of the article and the creator of the system, this project is a new basis for future projects in this area and it can be in the list of leaders.

## **V SECTION – ECONOMICS & MANAGEMENT**

### **WEIGHT OF POSTAL LOGISTICS ON THE DEVELOPMENT OF DISTANCE SELLING (E-COMMERCE)**

***D.Bekmuratov, D.H. Abduvahobova***



***Summary.** This article is about the main obstacles to the development of distance selling and significant limitations to increase the distance selling.*

***Key words:** Trading business, Internet-literacy, e-commerce, income, logistic system, postal logistics and postal items.*

The development of the Internet and the emergence of e-commerce cause significant alterations in the economy and lead the traditional economy positions theory and practice to a change.

Income growth makes any trading business prospective. Activity in the field of online - shopping depends on the buyer's earnings: **the higher the income, the more he or she makes a purchase.** This is due to the fact that the wealthy respondents generally have less time to visit traditional stores and a higher level of Internet - literacy and free access to the web.

However, there are still little developed areas, including remote sales. One of the main obstacles to the development of distance selling is the lack of a developed transport infrastructure and people's distrust of such services. According to analysts, trade catalogs, orders via the Internet and the others - a very promising area, and in the context of logistics, one of the major companies able to take a key position in the market of distance selling is JSC “Uzbekiston Pochtasi”, which can ensure the delivery of the goods at the most remote corners of the country.

According to research by analysts, that the market has great potential of distance selling, though long-distance, and lack of logistic system. The world practice shows that these remote forms of trade are actively developed, even in countries with strong retail. With a high probability it can be argued that the sale by mail has beneficial prospects in Uzbekistan, particularly in regions where the retail is rudimentary.

The main advantage of distance selling - the ability to offer consumers in almost every village a wide range of products, without developing trade network for this. This is convenient for both the seller and the consumer. On the upside

potential of distance selling can be judged by the volume of purchases per capita. If it exceeds in Europe 200 dollars in the United States - about \$ 400, in Russian - less than \$ 5. However, the growth rate of catalog sales is impressive – an average of 50 - 60% per year. It is logical to associate the prospect of such trade with the prospect of retail as a whole, which is booming, and the future of that depends on the growth continuation of income. E-commerce, as a form of distance selling, will, according to our estimates, grow by 45 - 50% per year, relying on the increase of the Internet – users. Basing on consumer demand, optimal goods for distance selling are small household appliances, electronics, books, accessories, home goods. The main advantage - an opportunity for sellers to set lower prices, compared to the conventional retail, due to savings on payment of retail space.

Indeed, there are significant limitations to increase the distance selling. Firstly, retarded payment systems despite the fact that goods' delivery with cash on delivery is likely out of it (there are significant additional costs) and prepayment of our fellow citizens is not likely to be accepted. Secondly, there is a failure to ensure timely delivery of the order. Third, there is a need to create and distribute a large number of promotional materials - catalogs and other things. A clear disadvantage is the lack of catalog sales effect's spontaneous impulse purchases, which may represent a significant share purchases in stores.

There are several reasons for the underdevelopment of distance selling in Uzbekistan. Market participants for the improvement of transport infrastructure must invest heavily. Long distances do not contribute to easy entry into the market too. Therefore, many business owners prefer a local processing in a given region, thereby, also, limiting business opportunities. In addition, the level of development of distance trade is affected by the population's lack of habits to those purchases, mistrust of the company suppliers - customers are afraid that the delivered goods will not correspond to the ordered. Psychology of the buyer is that he first wants to see and feel the goods. "The low level of public trust in such purchases, no doubt - one of the main factors. In addition, the lack of various forms' progress of payment

also retards the development of distance sales. Inadequate income levels cannot be neglected as well". "The relatively low effective demand in the regions is one of the causes of underdevelopment of trade in the distance. In the backwards remote forms of trade economic reasons still dominate, as well a lack of awareness of the population about the possibilities of distance selling.

For various techniques of distance selling it suits different categories of goods. For sample, via the internet sell better is music production, audio-video equipment, and auto parts. Catalogues are best convenient for sales of books, cosmetics, clothes. TV shops are used to sell some sort of unique products, which usually cannot be bought in stores.

The emergence of mail rival in principle is impossible, as it is necessary too much money as so to construct a global transport network that private organizations cannot afford.

Development of delivery service of goods in Uzbekistan has been justified by JSC "Uzbekiston Pochtasi" and logical-developed logistic network has been **established, the experience of trade in consumer goods through post offices there.**

For distance trade providers, cooperation with JSC "Uzbekiston Pochtasi" would help avoid considerable cost to form its own logistic system. To companies' willing to such cooperation, the Uzbek postal giant needs to work thoroughly uninterrupted supply system, as well as, possibly, to develop additional services for their customers. Of course, it is better to use already established infrastructure, because creating your own will involve huge costs and risks.

Advancement of value-added services can significantly increase the attraction of JSC "Uzbekiston Pochtasi". For instance, the distribution of advertisements with mailings could bring remarkable revenue. A promising direction might be the preparation for companies ready marketing solutions to increase sales through the use of e-mail infrastructure.

The main trend - the development of business comes from large cities, while many market analysts believe that the remote trade demand is in the distal regions.

In e-commerce, Uzbekistan has a large prospective. Scattered throughout the territory of the millions of people, retailers of poor development in the major regions and, on the other hand, developed network of post offices is very favorable to the progress of parcel market via the Internet.

To implement this vision ought to follow the examples of the advanced countries in this field. European experience would be a model of this. Major trends in the postal logistics in Europe:

1. The delivery of the order the next day
2. The delivery of the order to the day
3. The development of systems for the automated generation of parcel delivery through terminals
4. strengthening the cross border (cross-border distance selling)

In this regard, the following advice could be given online store of JSC “Uzbekiston Pochtasi”:

- To know properly own market and audience;
- To use multiple ways boarder;
- To contribute with suppliers (and not only to buy);
- To set additional online services (video and so on.);
- To develop and promote own brand;
- To cooperate with large companies.

There is a proposal to organize a web sector, which will unite amateurs of online shopping, online stores and JSC “Uzbekiston Pochtasi” and increase the fascination of the campaign.

Internet - Buyers - club members benefit from following:

- A mail bank card with favorable terms is **made** available to pay online (making of payments and transfers without commissions, receiving 10% per

annum on the balance of the bank card, withdrawal and cash deposits with no fees);

-Receiving bonuses of "Regular Customer" loyalty program with the order of messenger delivery service goods by "Tashkent pochтамt" branch in a post office or to home (EMS);

-Delivering to any place of Uzbekistan with an SMS-notification of postal items;

- Receiving bonuses and / or discounts from the partners of the club - the Internet - shops.

## NEW INNOVATIONS

*A.A. Abrorkhonov, G.E.Zokhidova*

*Summary. Introducing IT technologies to agriculture. Increasing the quality amount of harvest and decreasing work power. Reduce spending extra properties.*

*Key words: colorful diagram, chlorophyll meter SPAD-502.*

### **Actuality of innovations**

Nowadays one of the main purposes is to increase efficiency of agriculture to produce more provision. But at same time we can see reducing of fertility of our soil. So, by the current article I will try to present about exploiting nitrogen in agriculture, its influence to the crop and especially about how to get more harvest by control the utilization of nitrogen.

It is clear that nitrogen plays one of the principal roles in alimentation of agricultural vegetation in the soil of arid zone. Depending on soil, climate, and agro technical conditions, nitrogen fertilizations provide 50% and more of increment of harvest. However, each plant takes this fertilizer as much as it needs. Here is a question, how to know exactly how much nitrogen is necessary to each plant in one period of time? The answer to this question is very important because of some following reasons:

Firstly, we should mention that nitrogen fertilizations cost much money. If farmers apply nitrogen wrongly the plants as we've said take it as much as they need and the rest of substance will be evaporated or be washed up. In fact our country spend approximately 36 million USD to evaporate to atmosphere fertilizes in a year. Moreover incorrect usage of nitrogen can be cause of shortage that effects negatively to the harvest. Traditional methods of detection of content nitrogen in the soil or plants require significant physical and financial expenses. There are many vary of alternative ways that can economize using nitrogen fertilizations and avoid emissions of gases to atmosphere.

In many foreign countries usage of devises has been successfully introduced in utilization of nitrogen. They are Colorful Diagrams, Chlorophyll meters, optic sensor devises and etc. Colorful Diagram-cheap and simple devise (price- 1 USD), which is comfortable, especially in field conditions. Its detector of colorful scale is made from plastic and separated into six green compartments of different saturation on the basis of which we can analyze nitrogen in plants. (given tablet№10)

Chlorophyll meter SPAD-502 very compact devise that can even fit in a palm. Besides it's very light, its weight only 225 mg and cost about 2500 USD



Square, hectare	Economy, %	Cotton				Fall-seed wheat			
		Nitrogen	Ammonia saltpeter (34,5%N)			Nitrogen	Ammonia saltpeter (34,5%N)		
			Ton	Thousand	USD		Ton	Thousand	USD
Horozm region	1	188	544	148264	92956	60	1730	47230	29611
	5	938	2719	741322	464779	299	86648	2361055	148055
	10	1876	5438	1482644	929557	598	173296	472296	296111

Green Seeker consist of monitor, pocket computer, battery and handle. Its weight is about 6 kg at the same time it's very compact. The Green Seeker sends infrared rays and start to measuring then sensors receive reflected rays. Current condition will be appeared in the display. In short, this devise has next properties (in the table№ 2 given below)

Square, hectare	Reducing, %	Cotton				Fall-seed wheat			
		Nitrogen	Ammonia saltpeter (34,5%N)			Nitrogen	Ammonia saltpeter (34,5%N)		
		Ton	Thousand	USD	Ton	Thousand	USD		
		188	544	148264	92956	60	1730	47230	29611
		938	2719	741322	464779	299	86648	2361055	148055
		1876	5438	1482644	929557	598	173296	472296	296111

1		0.	0	1.6	1	0.	0	1.4	0
		002	.006			002	.005		.9
		0.	0	7.9	5	0.	0	7.1	4
		01	.029			009	.026		.5
	0	0.	0	15.	9	0.	0	14.	8
		02	.06	8	.9	02	.05	2	.9
1		0.	0	158	9	0.	0	142	8
00		2	.6	.1	9.1	2	.5	.3	9.2
		1	2	790	4	0.	2	711	4
			.9	.3	95.5	9	.6	.3	45.9
	0	2	5	158	9	1.	5	142	8
			.8	0.6	91	8	.2	2.6	91.9

**Utilizing this project in agriculture of other regions of our country we can give next benefits:**

- Simplicity and comfort
- To get a 90% prediction of next harvest
- Enrich knowledge of farmers in sphere of IT
- Saving financial spending
- Save the time



**Conclusion**



Writing this article I want to suggest spreading IT technologies over the all Uzbekistan regions to recon create agriculture in Uzbekistan which facilitates power for workers.

## **THE ROLE OF MOTIVATION IN THE DEVELOPMENT OF COMPANIES INFLUENCE THEORY**

*I.Sh. Aliev, Sh.A. Tursunov, Sh.T. Ibragimova*

*Summary.* This article focuses on the issues related to motivation and its role in development of organizational forms of companies. It is introduced new theory of motivation that is based on the emotions of personnel. Besides, it includes the recommendations for the development of organizational forms of companies on the basis of the modern theory of motivation.

**Keywords:** *influence theory, motivation, emotion, confidence, fulfillment, social life, enforcement, productivity, novation, bureaucracy.*

Times change – people change. Life is fast changing thanks to developing information technology that covered the whole sphere. And it puts great responsibility on all of us. At the time, the right ideas take a primary role in the further development. In the recent past, production and social life were dominated by bureaucracy and administrative command that did not reckon with human values. Later expanded needs and aspirations for a better life caused the emergence of a concept that all depends on economic development. Both entrepreneurs and their team play an important role in economic development. So we should pay attention to the issues of building a motivated team which is observed in many developed companies. And it lies in the method of management considering the interests, abilities, skills and indeed feelings of personnel. In other words, today motivation is in the spotlight of enterprises and organizations.

Motivation is what energizes, maintains, and controls behavior. It is clear why it plays an important role in our life. But empirically measuring that role is

another matter; motivation is responsible for higher productivity. However, it is widely accepted that motivated people generate higher performance.

Research has shown that motivated people will:

- Always look for a simple way to get a task done
- Be more quality-focused
- Love their work

In different organizations depending on the nature of their activities managers use a particular model of motivation. Globalization of the economy and increasing competition in the markets make it necessary to be more attentive towards the attitude of the head of the formation to employee motivation.

Most managers erroneously think that salary or some sort of bonus is often enough to keep employees working for an organization, but it does not always necessarily make them feel fulfilled at the end of the day. Herzberg's theory emphasizes that while financial reward is enough to avoid dissatisfaction, I would rather say displeasure, it is not certainly enough to propel employees to increase their productivity and achievement. **A massive 95% of managers are wrong about what the most powerful motivator for employees at work.** Here is a little question: what is the most crucial motivator for employees at work? Is it money, pressure, or praise?

Seventy years ago, psychologist Abraham Maslow published the Hierarchy of Needs, which has been widely implemented in management of human motivation ever since. The hierarchy is represented as a pyramid with five levels of needs. At the bottom of the hierarchy, physiological needs make up the first level of pyramid: food, water, basic human needs. Building on top of that, you have safety, then love/belonging, then esteem, and finally, self-actualization.

According to Maslow's hierarchy the basis for high-efficiency is on cash bonuses as a reward for good performance. Money is a more fundamental need in the hierarchy than passion or purpose. Taking into account that no employee can

perform any activity on the high levels of productivity without fully understanding and feeling what he is about to do, it is clear that Maslow's theory where financial bonuses play a major role is out of date.

Another example is when managers threaten job security to drive performance. They are attempting to strike a base need in Maslow's hierarchy such as safety and security to motivate. **From my point of view it does not mean motivating, but rather enforcement.**

It's not money, safety, security, or pressure that drives employees at work. It's not the supposedly foundational needs in Maslow's hierarchy.

The most important motivators for employees at work are emotions. Employees are highly productive and driven to do their best work when they feel as if they feel fulfilled.

It turns out, quite a lot. Emotions play a leading role in how to succeed in business because they influence how much you try and this is widely misunderstood by managers. Harvard Business School professor Teresa Amabile and psychologist Steven Kramer interviewed over 600 managers and found a shocking result. 95 percent of managers misunderstood what motivates employees. They thought what motivates employees was making money, getting raises and bonuses. In fact, after analyzing over 12,000 employee diary entries, they discovered that the number one work motivator was emotion, not financial incentive.

I believe that it is the confidence what motivates people towards the goal. And here we come to the point where we offer the Influence Theory of motivation that is based on motivating people giving them confidence.

Confidence is a key success factor for modern managers and leaders. To competes in the workplace as a manager today you must have two qualities above all else: confidence and drive. Managerial confidence is often based on the ability to make decisions or offer solutions when it should be based on drawing solutions out of others. As a manager you are now the face of a team. A key metric to

management is driven by confidence levels. You rise and fall by how well your team performs based upon your leadership—and to lead well, you must have confidence in yourself. The best teams perform better if they have confidence in their manager.

Successful operations need confidence in several areas:

- Employees need to have confidence in their manager
- Managers need to have confidence in their employees

Employees always look to a manager who senses unrest and reestablishes a feeling of community. When the mood is lighter everyone breathes easier, works more productively and refocuses on the goals of the business.

“Self-confidence doesn’t exist in a vacuum,” mentions psychologist and founder of Compass Point Consulting, Suzanne Roff-Wexler. She strongly believes that confidence is largely built through our relationship with the world. Your confidence as a manager really starts with your confidence as a person living with the demands of society, your family and your self-perception of how you currently fill your roles in all of these pieces of your life.

**Confidence comes to employees from the personality of a modern manager.**

**A modern manager** is the person responsible for planning and directing the work of a group of individuals, monitoring their work, and taking corrective action when necessary. Above all his management style is based on considering the feelings of the team. And it is exactly what makes him modern.

Biological research has shown that all of the feelings that we have are chemically produced feelings. And they are produced by four chemicals presented below.

**Endorphins** – are designed to do one thing and one thing only - mask physical pain. For example, laughing stimulates small bursts of endorphin.

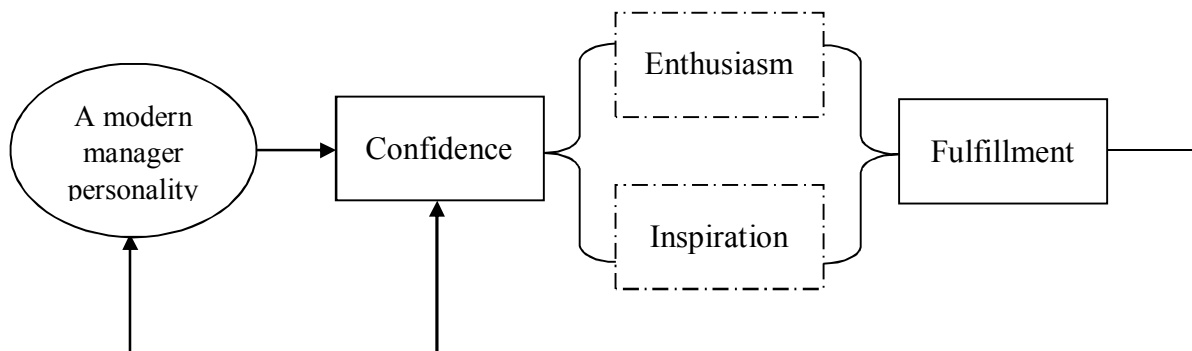
**Dopamine** – is the feeling that you will succeed at meeting your needs. The entire purpose of dopamine is to make sure that we get stuff done.

**Oxytocin** – is the feeling of trust and care. Oxytocin feels good when you're with someone you trust. Social trust feels good because social alliances promote survival. When you receive [a gift](#), your oxytocin levels can rise.

**Serotonin** – is the leadership chemical. It comes when you feel important and significant.

All these chemically produced feelings serve as the source of confidence. Creating positive and harmonious environment is one of the main points a modern manager should pay attention to as it helps employees feel like they belong to their team. The more the chemicals are produced in your team, the happier it gets.

*Summarizing all above mentioned* we can offer the generalized model of the Influence Theory and draw several major conclusions.



Influence theory of motivation is very important for an organization because of the following benefits it provides:

**1. Makes human resources active.**

Any achievement lies in the efforts of constantly active personnel. This can be fulfilled by building willingness in employees to work. Willingness comes when person has a clear vision, in other words confidence. Only when you fully understand and feel your direction clearly you will not feel fatigue or tiredness, furthermore doing one's own work never requires excess energy.

**2. Boosts productivity**

When everyone is confident they are likely to face challenges and it definitely makes work productive. The more you avoid a sense of fear, the more courageous you become. The more you achieve, the more confident you feel.

### **3. Builds friendly relationships**

Having a friendly relationship with your workers is a desirable thing, as a relationship of this sort makes the workplace a more comfortable one. Needless to say that comfortable environment drives creativity to emerge. Innovation brings people together.

For the aforementioned statements we can say that motivation is an important factor which brings employees satisfaction and fulfillment. This can be done by keeping into mind and framing an incentive plan for the benefit of the employees.

#### **REFERENCES:**

1. Bob Nelson, PhD and Peter Economy. *Managing for dummies*. – 2010. Wiley Publishing, Inc.
2. Des Dearlove. *The unauthorized guide to doing business the Bill Gates way: 10 secrets of the world's richest business leader*, 3<sup>rd</sup> edition, 2010.
3. Simon Sinek. *Start with Why: How great leaders inspire everyone to take action*. – Penguin Group, Inc., 2011.
4. Simon Sinek. *Leaders eat last: Why some teams pull together and others don't*. – Penguin Group, LLC.2014.

### **MANAGING QUALITY LEAD TO SUCCESS**

*F.B. Asrarova, F. Musaeva*

*Summary. This article introduces you with information about the importance of quality. Then it shows why we need in a quality management system and the reasons why we should improve quality. After that, the article provides with the*

*recommendation about the best possible ways of developing the quality management system processes in order to improve economic climate.*

**Key words:** *forward-looking organizations, quality management system (QMS), total quality management (TQM), Organization for Standardization (ISO), customer satisfaction.*

Now we are living in highly competitive business environment, that's why forward-looking organizations are being more accomplished than ever to continually refining their procedures to improve their products and services.

Quality is something every company strives for and is very difficult to achieve complications concerning efficiency and quality performs them every day in business, whether an important document cannot be found or a consumer finds a product not up to their expectations.

Providing quality services delivers benefits to the business. It can gain savings from having more efficient staff and processes, higher productivity and fewer rework costs. Some benefits are harder to measure but also add value within the business, such as improved staff morale and motivation. These help to hold staff, build experience within the business and save on recruitment costs. Good quality should also be reflected in sales and profits. In many service industries, the quality of service is the key factor that helps a business to excel its rivals. High levels of customer care create high levels of customer satisfaction which can give the business a competitive advantage.

Profits of improving a quality management system can be seen in the Sony Corporation. Sony offers a responsibility to "respect our customers' viewpoints to deliver product quality and customer service that transcend their perspectives. Sony promotes regular, persuading efforts to enhance product quality and to firm its quality management system. By reviewing quality management motions across all processes, from development, planning, design and manufacturing through to sales and service Sony have recently reconfigured its quality management system.

In addition, Sony makes active use of customer feedback to improve its products and customer services. Opinions, reports of disoperation's after buying, questions about how to use and other feedback received through Customer Information Centers are estimated as promptly and accurately planning and design groups so that improvements in product quality can be made in a timely fashion.

In such way the contribution to efforts helps to enhance power of product. For example, Sony has reinforced the self-diagnostic functions in most new models of BRAVIA™ LCD televisions, an improvement that makes it easier for customers to configure initial settings after purchase and to resolve connectivity and other issues during use swiftly and without assistance. Additionally, by strengthening its network remote diagnostic functions, the Customer Information Center is able to provide customers with appropriate support, even for more complicated problems.[1] Also it is an extra way to gauge customer satisfaction. Devised by a Bain consultant named Fred Reichheld, a net promoter score keeps tabs on the number of customers who would recommend a business to their friends. A customer who answers 9 or 10 is seen as a promoter; a customer who answers 7 or 8 is seen as passive; and a customer who gives a company a score of 6 or lower is seen as a detractor. By subtracting the number of detractors from the number of promoters, a company arrives at its net promoter score.[2]

"Constancy of purpose means that quality decisions are not situational".[3] When we plan and implement a total quality management system we should realize that there is no one solution to every situation. Because we ought to accept each organization as unique in terms of the culture, management practices and processes are used to create and deliver its products and services. Considering all this we choose quality management strategy varying from organization to organization, however primary elements should be present in some form. The development and implementation of a quality management system is perhaps the best way to demonstrate companies their place in business world. A quality management system provides organizations with the opportunity to increase their competitive



position by focusing improvement efforts on those operational areas which need most of change. This in turn directs operations, increases efficiency and enables organizations to provide higher quality products and more effective services to their customers.

Poor planning and inadequate resource distributions are often the primary causes of implementation failures. Organizations can avoid these potential pitfalls by establishing a project plan; gathering a project team; developing and implementing the system; and monitoring implementation.

Careful planning and efficient management of the fulfillment are essential to the success of any quality management system (QMS) project, as this helps to control costs and avoid extended timelines and the loss of key personnel and general dissatisfaction with the outcome. The following steps should be considered when developing a QMS project plan which includes identify project tasks, define milestones, establish timelines, develop a budget, assign resources, develop a strategy for monitoring progress.

The ability to work in a team is vital for organizations, but all will require the right mix of people to get the job done. Assigning a reliable and talented leader for the project (let's call this person the "quality champion") is an essential part of the process. It is important to select an individual who has a rational understanding of the organization's culture and its values and realizes the main reason behind any new system implementations, who is able to undertake a comprehensive review of all business processes and begin to develop and introduce new policies and procedures, who can train staff to perceive and help fulfill the system and to continuously identify areas of improvement.

"Your existing employees should be put in charge of training new employees, because only they can provide a firsthand perspective on how your company's operations work".[4]

Having a team of trained internal auditors who objectively review each area, document instances of noncompliance with established procedures and make

reliable recommendations for corrective actions is paramount to the system's ongoing success.

Another mode to improve a quality of management is identifying quality needs and it begins by understanding in what geographic locations the company intends to distribute its products in the next five to seven years. Understanding the requirements of the chosen standard carefully, so that the appropriate approach can be decided upon. To assist in developing standards for quality an organization of 158 national standards groups formed the *International Organization for Standardization* (ISO), which is headquartered in Switzerland. There are thousands of ISO standards, and they are grouped by their numbers. The ISO 9000 group of standards relate to quality. Recommended steps for implementing a quality management system (QMS) are as follows:

Fully engage top management.

Identify key processes and the interactions needed to meet quality objectives.

Implement and manage the QMS and its processes.

Build your ISO 9001-based QMS.

Implement the system, train company staff, and verify effective operation of your processes.

Manage your QMS—focus on client satisfaction, strive for continual improvement.

If necessary, seek third-party certification and registration of the QMS, or alternatively, issue a self-declaration of conformity.[5]

In order to improve our country's economy by developing managing quality, it is advisable to make quality the epicenter of increasing revenue growth and competitive leadership, achieve complete customer satisfaction by offering essentially perfect goods and services whose quality the customer determines.

The additional way to improve quality taking advantage of new management approaches included the shift in customer value expectations and innovative management approaches to human leadership. These approaches reject

the notion that good management and successful improvement means getting the ideas out of the boss's head and into the workers' hands. The main principles should be applied accelerate sales and earnings growth through quality failure reduction, innovate in product and service leadership and cycle-time management, encourage employee participation in quality improvement, develop effective supplier partnerships, create an integral quality value network among customer, producer and supplier relationships, provide environmental and safety leadership. Companies that can implement these processes won't travel under any single national passport, nor any particular cultural or social identity. But they will share certain quality management characteristics. In particular, they will recognize that protracted growth demands increase customer satisfaction, cost leadership, human resource effectiveness and integration with their supplier base - all four, all the time. Due to knowledge, skills, democratic problem solving and teamwork they can foster a deep commitment to fundamental business improvement. These characteristics will provide improved quality to customers and help organizations successfully face the social and economic changes that are ushering in a new global business climate.

Certificating is the another method to refine quality. Our government should adopt regulations which don't allow to accept goods and services without a quality certification like some European countries, because this certification proves that goods and services are required by the International Organization for Standardization - ISO standards. So as to strengthen these laws, non-certified products must be sold twice cheaper . The Quality System Certification allows to save the company's competitive advantage in the market .

While all of the steps noted above might seem like a lot of work, they are the only means to assure that a quality management system will not become just a document-generating system. Periodic health checks in the form of internal audits should become a part of the organization's routine. And we know a well-managed quality management system focusses on the customer's needs and requirements

and aims for continual improvement in the areas of cost, reliability, quality, innovation, efficiency and business effectiveness. Therefore, organizations must constantly reassess the ability of their QMS to capture key performance and industry trends and guide efficiency improvements at all levels of the organization. As a managing quality is the key to success and by developing it the country can be highly noticeable, its development and implementation should be put in the heart of business.

#### **REFERENCES:**

1. Dig Deeper: *How to Address Quality Issues*
2. Operational expert Rebecca A. Morgan
3. Ralph Stayer, the quality-obsessed CEO of Johnsonville Sausage in Sheboygan Falls, Wisconsin
4. [www.sony.net](http://www.sony.net) <quality and services>
5. International Organization for Standardization, Quality Management Systems—Fundamentals and Vocabulary (Geneva: ISO Press, 2005), in Project Management Institute, Inc., A Guide to the Project Management Body of Knowledge (PMBOK Guide), 4th ed. (Newtown Square, PA: Project Management Institute, Inc., 2008).

#### **FREE ZONE FOR IT-STUDENTS**

*S.Akhmadjanova, D.A. Karimova*

**Summary.** *In this article discussed problem of free zones for students. One of the most problematic things is that it is really difficult to find out suitable places where students can use free Wi-Fi and have IT clubs.*

**Key words:** *Wi-Fi zone, digital networks, IT, ATMs, Internet access, Digital tools, multi-sensory tools, laptops, email, chatting facilities.*

In recent years, information technologies have become embedded in our everyday lives, and are part of broad-based changes to how we engage in knowledge production, communication, and creative expression. Unlike the early years in the development of computers, computer equipment are now commonplace and pervasive, having been taken up by a wide range of individuals and institutions in all walks of life. The internet and other digital networks also have been adopted and integrated into the daily lives of an increasing number of students. In this article, I will briefly describe the role of the internet and computer technologies in youth life because I'm a student who doesn't represent the life without information technologies. Then, I will describe some important points about provision of conditions for improving students' skills in IT. New technologies as important helpers in daily life. The development and improvement of technology has greatly improved our lives. It has led to a far better, easier and very comfortable life for the people.

There are various ways through which technology has changed our lives and this includes the following: The rise of the internet technology has improved our daily lives in very many ways. The world business and trade has become very fast, easier and more reliable. You can now transact business with a person who is very far from you without any difficulties. It has become easier to book railway tickets, bus tickets and even flights at the comforts of your home without having to move. The payment of bills and other accounts related jobs of every business entity is easily managed by the available online facilities. Financial institutions and banks have introduced online internet systems which makes life easier.

The introduction of ATMs has made it very possible to withdraw money at anytime of the day. Also it has become easy to advertise through the internet and thereby promoting the business in a faster way. Banks and other financial institutions are now filling data in the computer instead of doing it manually as they used to do in the old days. This makes it easier to find the name of the

customer, address, email address, birth date, phone numbers and even the location. Also the clients can get a very quick access at their account balances by logging in to the bank website. With the rise of computer technology, credit cards and other plastic money which are very useful especially when one do not have cash at hand or when one is ordering online products and or services have manufactured. The impact of technology is a very good classical example of the way our lives has improved due to technology. The ancient people did not get the chance to learn in interactive classrooms with projectors and even 3D images. Computers, power point presentations and also the internet technology have brought about teaching in a very different dimension. The education system has become computer dominated and has gone beyond notebooks and blackboards. Nowadays it is more possible for audience and students who are located in very different geographical areas to get access to lectures which are being conducted through video conferencing. Also many websites are promoting the online tutoring which means you do not have to attend to a classroom to get educations, you can do it at the comfort of your home. Communication has been made easier for example the internet has brought email and chatting facilities. Instead of sending letters to respective destinations, it is very easy to send an email which will be received instantly.

IT in the education. Digital tools and Internet access have changed the landscapes of both university world and beyond. 60 percent of the jobs in the 21st century will require computer and digital skills. But aside from the future job benefits that students gain, educational institutions that use technology today report higher attendance rates, lower numbers of dropouts, and a host of other critical benefits that students receive because they have access to technology.

Technology-based learning taps into multiple learning strategies. College instructors using technology tools select from a variety of educational tools that include audio, video, digital simulations, illustrations and other multi-sensory tools. Students in classrooms that feature these technologies use them to watch an

animation of how the blood pumps through the heart, listen to international news sources to learn a foreign language or use weather graphing to create an assignment for a geography class. Students in these classrooms perform 30 percent better than their counterparts in classes without these technologies.

Digital technologies meet people where they are, allowing college instructors to reach a variety of students. Whether the student faces some sort of disability or lives too far away to attend class, technology bridges the gap. For example, screen-reading technology grants class access to the visually impaired while online coursework allows the rural student to attend university lectures despite living four hours away from the university. While digital technologies in the university setting do help enhance the overall learning experience, they give the basics a boost as well. For example, students working on their composition skills perform better with the use of word processing software than they would without it.

While educators don't exactly know why this happens, they hypothesize that it has to do with the ease with which a student can revise her text. They additionally feel that her ability to share electronic files on disc or via email with teachers and her peers helps her composition skills because the student can more easily receive constructive feedback. She can then apply this information to future drafts of her work, allowing her to create a better final product.

Wi-Fi zones. In our country created opportunities for connection and access to the Internet. Fund "Forum of Culture and Arts of Uzbekistan" and Center for Youth Initiatives "Kelajak ovozi" in 2012 implemented a major project in this direction. In high educational institutions organized Wi-Fi zones. Here students have free access to the Internet. WI –FI zone will organize meaningful leisure time students, provide them with the world and scientific news over the Internet and participate in projects and activities. According to experts, Wi-Fi zone protected from various sites and networks that promote foreign to our spirituality negative ideas.

At the moment in our Tashkent University of Information Technologies learn advanced and educated students. There are more opportunities for learning. But at the same time, students need to provide more space to enhance their own skills. By this, I mean the giving to students free classrooms for discuss and discuss projects. Many students have their own laptops, so this is not the room with computers, but simply rooms with zone Wi - Fi where you can work out at any time. Our university has organized such audiences in the library, but the problem is that there cannot sit there with our own laptop. A library closes early, which makes it impossible for students to engage after school hours that is after 18:00.

The solution of the above problem I believe the allocation to students free official audiences, which will not be installed computers. This will be a big room, which will be located in WI - FI zone. And, they will have plenty of outlets which will be allowed to connect students' laptops. These free zones will be open to all students Tashkent University of Information Technologies. Technologies, as communicative vehicles, serve as platforms for dialogue, discourse, and connection. By using a mix of technologies educationally, youth learn to represent themselves without being confined to the structures that keep them out of the public debate, or tokenizing their “voices” as pure, and therefore either true or native. Undoubtedly, significant challenges remain here—ranging from unequal access and the lack of critical understanding of how technologies shape perception to “the breakdown of traditional forms of professional training and socialization that might prepare young people for their increasingly public roles as media makers and community participants.

#### **REFERENCES:**

1. “The base of the world international telecommunication technologies” J. Burned Milton. 2003.
2. “Requirements to prepare highly qualified specialists” Johnson D. 2012.



## THE ROLE OF COMPUTER GRAPHICS IN TODAY'S LIFE

*S. Ibodullayev, D.A. Karimova*

**Summary.** *This article dedicated to the majority of computer graphics in our daily life.*

**Key words:** *computer graphics, 3Dmax, technology, software.*

Interesting graphics with modern technologies is one of the biggest achievements of count. Simple interesting from the house is the root of modern technologies. Interesting graphics using the image of the human brain, which can be all things virtual body will bring. Dinosaurs period, of galaxy code Utopia life that it is all about the interesting graphics have idea.

Now the interesting graphics 3Dmax made using the play of a human brain and from the brain completely. Human it aware of these will appear in the game. Because the fight game looks graphics human life is not almost more than come. As an example, in January 2015, the basis of Call of Duty (ghost) bring the house maybe, because game graphics looks for 75% real. This also heightened, the strong professional persons united with the help of new technologies programs need to work on and we need to re-create a new project, which compose who believe that they are working for the program. Course for future generations, will serve our children for the future, so we have people in every way to create a favorable technology and software, which should be fun to work. This is an example of a man in the house next to his knowledge of the case, of course you want to serve to the Internet using the information necessary to create a that technology with the help of all to know information and need a quick and favorable performance. To do this, we need to build the first line boarding MG House. Our modern Internet speed OZU, not taking into account that according to Holt, we pass Internet wave technology also is working software, and so, along with the need to create new technologies, too. Mani based graphics instead of the present millennium we now understand all the graphics go eat a simple image differs from the current which go

down so, along with the new high tech shocking MP 50 and also looking anything but struggled with manic think people look is not to suggest several technology to create human . Who knows, one day we can go into technology practices also understand now is the manic opinion. These congregations of many scientists and scholars also appeared stay. I thought for the new graphics technology is simple and based on favorable want to know simply sitting on the desktop also any additional actions Vedic call talks to any size the first screen calls without fail . To us 3D max and other predecessors of the program as it has only 3D glasses According to using, such graphics. Therefore, we should create graphics technology to be the same the world must fell into. Correct it is not easy to create but I think to do compose so in the future technology .we such now show oneself fiction movies is not a valid fiction films are also easy to see that the horrors of his people for years without I so 80 percent done at computer. What do you think? According to 10% of a person's brain running I watch 3 times now, the old and the future. Instead, we present a graphic our wedding new look bright and beautiful production give only make wedding is different in some drawings usually at night usually day. To do this, now caused the risks associated with the new software.



'Interesting graphics and design ---- Currently, one of the more interesting devices adjust the regulated information and practical software tools required to carry in plenty today often used on the 3D max graphical operating environment software and video processing several "Adobe After Effects", "EDUS "processing and audio files on the" Sound Forge "," AUDOBE Audition "news programs and the creation of computer graphics and design at the field in front of the tasks in the

field of shape. This future is shining line was opened favorable opportunities and open roads!

Computer graphic in the present-day modern technology is intended for graphics instead of using a variety of advertising, animation (gif) for film and TV cartoon characters and logos. . .



We have these 3 dating create applications using these.

In addition, I think that computer graphics, computer modeling is a vital and necessary technical event without limitation, paper and paper safe for human life and the nature of the decay experiment may. Today's to consider the world could imagine 93% teenager's life don't take computer graphics computer. Because graphics for each position in the field of life advertising board.

## **DEVELOPMENT OF INNOVATION TECHNOLOGIES AND MOBILE BANKING IN “UZBEKISTON POCHTASI”**

*F.T.Dusmuratov, D.H.Abduvahobova*

*Summary. This article is about development of innovation technologies in Uzbekistan, particularly about an idea of realization of mobile banking.*

*Key words: commercialization, implementation, tax incentives, venture capital.*

In the face of global competition winner is the one who has a developed infrastructure and institutions for the development, commercialization and innovation. Now, when all countries, though in varying degrees, suffer the consequences of the financial and economic crisis, it is clear that out of the situation with minimal losses will come those that timely measures are taken to reproduction and development of new technologies, ensuring due of competitive products at the lowest cost. Modern trends in the world economy associated with an increase in the role of information technology and knowledge in the economic life of society. Economics changing becomes more innovative, and based on these changes is the use of personal computers, high-speed telecommunications and The Internet.

Today the most competitive countries, which are in a state of continuous improvement, are based on technological innovation and implementation. At this stage of development of our country, it is important to take its place in the information field. The development of the ICT sector can improve economic competitiveness in the global market and will contribute to the country, achieving to a new level of development, which is characterized by intense structural shifts in favor of the high-tech sector information.

The peculiarity of the transition to innovation-oriented type of economic development of Uzbekistan means increasing in global competition creates challenges to be addressed in the coming years:

- The most important characteristic of the global innovation development becomes a competition for high-quality human capital, and the increasing mobility of highly qualified personnel ensures the dissemination of knowledge;

- The role of information technology in the dissemination of knowledge is becoming increasingly important for the further growth of innovation activity; the dissemination of knowledge went beyond individual economies;

- Globalization is forcing companies to compete in an increasingly high level of technology and at the same time stimulates the processes of specialization and localization of innovation.

Today in the republic there are around 400 organizations conducting research. In the realization of the state scientific and technical programs in the last 10 years involved 224 research institutions, universities, development organizations, research and production enterprises, small innovative centers.

Tax incentives for innovation scientific-technical and industrial spheres complements and extends the market mechanism of regulation of innovative processes. In accordance with the Tax Code of the Republic of Uzbekistan organizations performing scientific, technical and innovative projects from the budget, are exempt from VAT. The so-called tax savings increases the size of the financing of scientific and technological measures to accelerate renovation of production facilities on a new technological basis, the development and market entry of new products.

The most important competitive advantage in today's conditions is the level of development of new knowledge and its effective use in the socio-economic development. This factor crucially determines the role and place in the world community, the level of people's livelihood and national security. In the industrialized countries of 80-95% growth in GDP accounted for by new knowledge embodied in innovation. The transition of these countries to innovative development was made possible by the establishment of national innovation systems (NIS). Appearing natural result of previous industrial development, the NIS as an effective system of institutions has allowed highly developed countries to provide leadership and technological breakthroughs to maintain the competitiveness of their economies at the highest level.

Innovative development should focus on systemic and deliberate efforts of the government, private sector and civil society to ensure the dynamic development of Uzbekistan in the field of science and innovation.

The value of gaining experience of the advanced countries-innovators is suitable for Uzbekistan and successful methods of effective innovation economy, including the commercialization of scientific research.

The mission of innovation development - improving living standards based on sustainable economic development of the country, due to the effective use of intellectual capacity, generation, dissemination and implementation of new knowledge.

The main purpose of innovation development in the long term is to create an open innovation system, which provides the creation of competitive products and services based on the use of foreign scientific capacity and technology with selective support of domestic developments, oriented towards the priorities of economic modernization of the country.

In recent years, the Government of Uzbekistan pays great attention to the acceleration of innovation activity as a main engine for sustainable development. Attempts were made to create new institutions and relationships and incentives for the formation of innovation infrastructure similar to that which can be observed in countries with developed market economies. The government is trying to introduce as financial (such as grants, tax incentives, venture capital) and non-financial instruments (such as technology transfer centers, the annual Innovation Fair) to stimulate innovation. This project will assist the Government of Uzbekistan in the development of the capacity of institutions to transfer technologies to improve the organization and the results of the annual fair of innovations, as well as in the development and implementation of programs to support innovation

The project aims to strengthen the capacity of the central government and relevant departments in the development, implementation and monitoring of programs for the development of innovation Innovative activities, ie the process of

creating, distributing and the use of business entities scientific, technical, organizational, managerial and other innovations, is the main content of the process of economic modernization.

As pointed out by the President of the Republic of Uzbekistan, IA Karimov, the most important priority for us remains modernization, technical and technological

upgrade of production, accelerated renewal of leading sectors economy "Also worth noting is that in Uzbekistan with the support of the Cabinet of Ministers, the Academy of Sciences and other institutions this year are organized in accordance with the plan of the international scientific conferences for 2015, approved by the Cabinet of Ministers of the Republic of Uzbekistan, 21-23 April 2015 in Tashkent, in the framework of the VIII Republican fair of innovative ideas, technologies and projects planned for the Tashkent International Innovation Forum.

One of the important conditions for the development of innovative technologies is their transfer to other countries and the use of these technologies in various industries. In connection with this program in the upcoming VI Republican fair of innovative ideas, technologies and projects for the first time included a new direction - technology transfer. Which will provide 100 projects, specially selected by the organizers fairs, and with great prospects for implementation in various fields?

In the field of postal services and developing new innovative services. For example, in order to create convenience for customers and improve the quality of services provided by JSC "Uzbekistan pochta" introduced a number of innovative technologies. For example, in the branch "Tashkent post office" developed and is undergoing operational testing program automated system "Receiving orders for a courier mail via the Internet."

In addition, together with the company "REBIC" a program "Automated system for monitoring the passage of registered mail and the exchange of EDI messages with the Universal Postal Union".

Currently, the experimental operation of the system in the branch "Halkaro Post Office", 15 exchange offices and 70 branches mail-sorting sections of postal communication nodes. The adoption of this system into operation will increase the processing speed, operator productivity, as well as enable the rapid control of the passage of registered mail through the website as a mail client, and controlling services.

Also, it is worth mentioning the new system introduced in "Uzbekistan pochta". Namely, the automated system "Internet subscription", presented JSC "Uzbekistan pochta", which will create a lot of facilities in the future for people and organizations. By means of this system will be through the official website of the company to subscribe to the printed edition of the republic, to make a payment through electronic payment systems. Once the system is running, no longer need to visit the subscriber's liaison offices, this procedure will provide an opportunity to spend a few seconds on the required operation of the home or workplace. The system is currently being tested.

Currently, we are increasingly surrounded by a variety of mobile devices - smartphones, tablets and other gadgets. Is not a problem, being to any point on the globe, through mobile devices to access the Internet? People are becoming more and spend more time with your smartphone or tablet. It is a source of information and entertainment for the users. And for business – a new opportunity for the development of business processes and the promotion of information services. Now mobile applications become mandatory marketing tool for companies in B2C. Creating a Mobile Application - is a significant step in the development of the business.

You will need to note the fact that the use of mobile applications to provide services in the postal service is not only essential in order to preserve the image of



respectability and postal services, but also help to explore clients' wishes and help raised the level of service to a higher position.

Currently in many developed countries, postal services offer their customers the ability to use mobile applications for a range of services they provide. Countries such as Canada, Austral, Singapore, Sweden and many others have long used mobile application. In 2013 in Russia on the basis of the tender application was created for the "Russian Post" and at this moment available for users. This application provides a wide range of services and facilities for users of the Russian mail. This application provides the following features.

#### Tracking mail

- Save an unlimited number of items;
- Push-change notification of their status;
- Displays the amount of customs duties.

#### Branch of the Russian Post

- Search for the nearest to you or to the address;
- Search on the map;
- Filter by time schedule.

#### Feedback

- Online chat with postal employees;
  - Evaluation of the offices and the quality of delivery;
  - Notice of inaccurate data about the departments.

#### Shipment delivery by courier:

New service for clients from Moscow – shipment delivery to the courier within the Ring Road. Order the delivery of parcels can be directly in the application.

As well as:

- Barcode scanner to add items;
- Search zip at;
- Interesting facts and news about the Mail.

Coming Soon:

- Payment of customs fees online.

Also, consider the tasks that can be accomplished through the introduction of mobile applications and mobile banking system.

Key tasks of mobile applications:

- dissemination of information. Provide information to customers about the latest company news, about promotions, services;
- creating a positive image and strengthening reputation;
- optimization and automation of business processes for their qualitative improvement.

In addition to directly address problems of remote customer service, mobile banking can be used in a wider marketing purposes. Thus, it can be used:

- Collect statistical data;
  - Study and segment the customer base;
  - Notify the target group of customers;
  - Implement loyalty programs for specific groups of customers;
  - Conduct surveys among target groups.

Given prospects are helpful for the development of online trading on the territory of Uzbekistan in the future. Development of mobile applications in "Uzbekistan pochta" will serve to meet the objectives to increase customer satisfaction and improve the image of the organization, the development of a feedback channel with customers to address the shortcomings in the work and improve the quality of services, and the increasing number of users of the application to ensure broad user base for future services.

## **THE DEVELOPMENT INVESTMENT ACTIVITY AND INCREASING ITS QUALITY IN “UZBEKTELECOM” JSC**

*Kh.M. Ismailov, V.Kh. Gaziyeva*

*Summary. I have learnt how to invest to “Uzbektelecom” Joint-stock company. As far as I know majority of suggestions are given for developing “Uzbektelecom” Joint-Stock company in the future.*

**Key words:** *Telecommunication, investment activity, fiber-optic communication lines, economic demands of the population, foreign investment.*

“Uzbektelecom” Joint Stock Company is the largest telecommunication operator in the Republic of Uzbekistan, which network covers the entire territory of the republic. Using its telecommunication network, built on the bases of modern technologies, the company offers a wide range of telecommunication services. “Uzbektelecom” JSC is one of the most of major leading companies of Uzbekistan, to attract foreign investment and technical equipment. In 2013, the main tasks carried out to strengthen the position of investment activity, increased sales and market competitiveness of the state in the telecommunications market. On behalf of the Government of the Republic of Uzbekistan, The Ministry for development of information technologies and communications of the Republic of Uzbekistan, “Uzbektelecom” JSC implemented a number of investment projects for the development of telecommunication lines, total investment has been consists of 1309 billion growth relative to 2012 by 4.9 times in 2013 year.

The company of investment activity was carried out in accordance with main tasks facing “Uzbektelecom” JSC aimed at expansion of markets and strengthening of competitive positions in the existing market of telecommunication services. In order to develop a broadband (high speed) Internet access and reserve the existing networks 2 2574.4 km of fiber-optic communication lines with the installation of channeling equipment have been constructed. [1]

In order to expand the provision of telecommunications services have implemented the following major investment projects:

- "Construction of fiber -optic communication line (FOCL) Baysun - Denov"
- laid 102.3 kilometers of fiber -optic communication lines and produce in the

direction of Karshi - Termez - Denali. Under this project is planned, redundant backbone transport line direction of Tajikistan and Afghanistan. Construction of fiber -optic communication line (FOCL) Urgut - Shakhrisabz:

- 72.6 km laid fiber- optic communication lines and provide redundancy in the direction of Samarkand - Navoi - Bukhara - Karshi;

- "Modernization and expansion of Intercity of switching centers on technology of next generation networks (NGN)";

The first phase of the project included works by increasing the number of E1 streams international switching centers for 1386 E1 ports, which will increase the simultaneous connections for long-distance and international routes.

***Key indicators of telecommunication network development***

Indicators	2011y	2012y	2013y
Installed capacity of exchange, numbers	1 987 586	1 966 454	1 994 452
Digitization level, %	97.1	98.8	100.0
Growth of installed number capacity of local network, numbers	-	11 514	27 998
Growth of installed capacity of broadband ports	61 657	110 138	148 868
Length of long-distance, international, intra areal communication channels, mln. Channel/km	232.7	276.2	381.3
Out of them formed on fiber-optic communication lines, mln.	219.4	263.5	368.2

channel/km			
Length of trunk cable communication lines, km	5 523.1	5 449.7	5 7829.0
Including FOCL, km	5 137.9	5 435.8	5 821.1
Length of channels organized by trunk line, thousand channel/km	216 869.9	259 258.8	366 837.4
Including FOCL, thousand channel/km	203 940.2	246 949.2	354 239.7
Number of mobile communication switching centers, units	5	5	6
Growth of total capacity of mobile switching centers, numbers	20 000	130 000	114 000
Coverage area of the republic, %	58.1	71.3	74

“Modernization and development of the local telecommunications network technology of next generation networks (NGN)”. The purpose of this project is to replace the switching equipment with new digital switching system type SI3000 using NGN technology in local networks of “Uzbektelecom” JSC. During the project work carried out by replacing obsolete telecommunications equipment with modern, digital equipment and modernized local switching stations across the country for a total capacity of 305,348 subscriber ports, of which 91,936 broadband ports.

Development of the national economy of Uzbekistan “Uzbektelecom” JSC and market economy reforms, adopted a program in August 1995. “The program for the rehabilitation and development of telecommunication lines the Republic of Uzbekistan in the period up to 2010”. The purpose of this program is to meet the economic demands of the population, and communication services, as well as the creation of the national telecommunications lines on the basis of international telecommunications systems digital telecommunication device and a digital transmission system.

But the implementation of this program is not today's demands. Alternative forms of communication, reduced demand for telecommunications services in rural areas, due to shortage of own funds and foreign investment the main indicators were not achieved. In addition, it has affected the legal problem, macroeconomic growth telecommunications industry, communications and international development -mail information technology.

At the moment we can assume the following types recognized selection of investment projects.

Public efficiency characterizes the socio-economic impacts of the project to society as a whole; it takes into account not only the direct benefits and costs of the project, but "external" to the project costs and benefits related sectors of the economy, economic, social and other non-economic effects. Commercial viability of the project describes the economic consequences of its implementation for the initiator, based on the highly conditional assumption that it produces all requirements for project costs and benefits from all the results. Commercial effectiveness is sometimes interpreted as the efficiency of the overall project. It is believed that characterizes commercial efficiency in economic terms, technical, technological and organizational design decisions.

The economic concepts is to attract funds and their use terms of utility - a loan, the percentage of use, participation of foreign capital, subject to other use, including the terms of loan repayment.

Summary on efficiency of use - it is used whole foreign money investing, efficiency of use of money due to many factors:

- organizational measures;
- financial measures;
- Measures review of operations;
- measures to improve management systems;
- measures before sales;
- privatization;
- Attracting international advisers;
- Preparation of experienced personnel, etc.

From my experience, International experience shows privatization, for maximum efficiency investments to be achieved:

- Maximize sales prices shares of privatized enterprises;
- attracting large volumes of investment in these enterprises.
- To create suitable investment environment for foreign investors;
- To increase investment attractions;
- To show the main indicators that about company winners and loses;
- To use of foreign investments than ours;
- To teach workers in foreign countries in order to learn foreign experience;
- To built techno parks for investors.

•Invest before the 5th of the month if you want your contribution to earn interest for that month as well.

Corporatization process is consumer -related investment directly with the source of funds. The main purpose is the ability to use the cheapest means of communication and phones. On the one hand enables the expansion of investment opportunities, the company, on the other hand, will help revitalize the stock market it is an impetus for the development of relations.

#### **INTERNET RESOURCES:**

1. Annual reports of Uztelecom Joint-Stock company.
2. [www.uztelecom.uz](http://www.uztelecom.uz)
3. [www.google.ru](http://www.google.ru)

#### **BUSINESS PLAN**

#### **FOR NEW VEGETARIAN RESTAURANT IN TASHKENT**

*B. Kayumov, N.Ibragimova*

***Summary.** The vegetarian food industry has experience rapidly growth in the past decade in Tashkent, Uzbekistan. Many vegetarian restaurants are opened in the city and about 3 millions of people visited there to dine out. This report provides information about conducting the business plan for opening new vegetarian restaurant in Tashkent.*

***Key words:** vegetarian restaurant, menu, menu price, analise, food, layout, customers, guests.*

The future “Ariston” vegetarian restaurant will be a place for vegans, vegetarians and anyone else who wants to dine out healthy foods. It will be established as 3 stars with 86 seat medium-sized businesses. It will be owned and operated by Bobur Kayumov who has 2 years experience in the restaurant and



catering industry. The restaurant's location will be chosen according to survey by marketers at pension offices, bus stops, universities and through web and social sites. There will be followings in the venue:

- Convenient parking area;
- Banks, offices, companies, institutions, and hotels should be located near the restaurant;
- Venue should not be far from airport, train station, and citizen living houses;

To summarize, the restaurant will build in Chilanzar Avenue, near Chilanzar metro in the centre of Tashkent, Uzbekistan. The restaurant will offer vegetarian dishes and high level of service for business people, family and women. There will be an opportunity that customers can take food home with themselves and an additional banquet hall for presentations and banquets in the restaurant where conferences, meetings and parties will be held. Also, the dining area of restaurant will be both in open and close area. The innovative of open area is: the dining area will be located in the garden and there will be dancing fountain for music which our guests will enjoy while eating. Closing area's interior will be decorated with wood, textiles and stone in ancient style. According to [ 1 ] on the creation of the medium sized restaurant will take from eight months to 1 year. Projections of sales assume 1000 customers per week. Also see table1 and table 2.

Table 1.

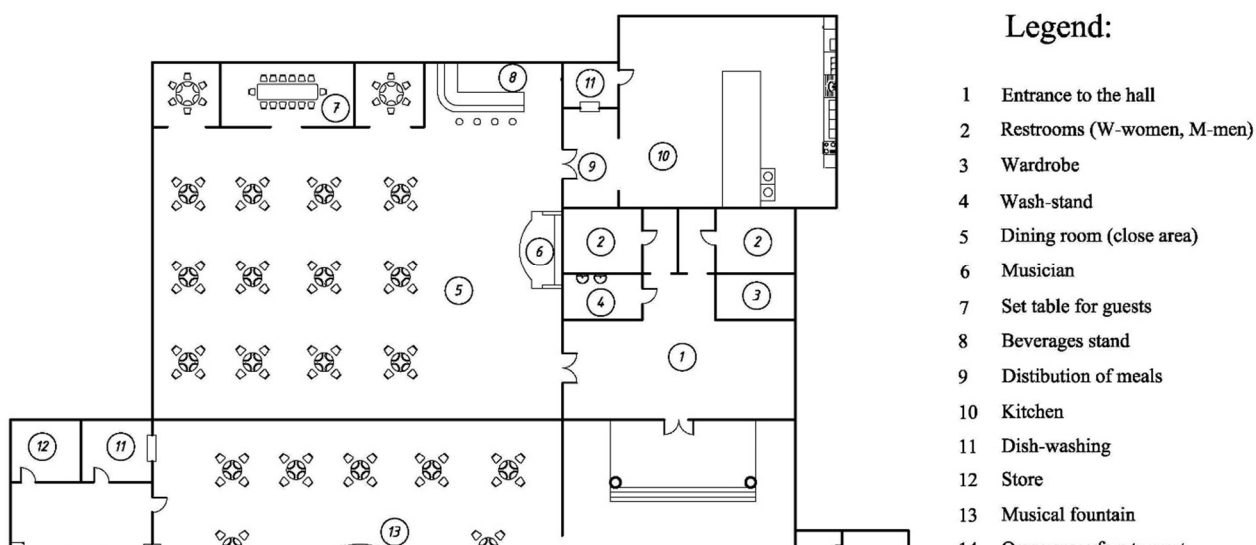
Start up costs	131, 500\$
Company capital will be	101,500\$
Owner will provide	72,000\$
Additional funding is needed	59,500\$

Table 2.

<u>Start-up Expenses</u>	
Legal	\$1,200
Kitchen Inventory	\$6,000
Packing Materials	\$1,500
Kitchen Equipment	\$20,000
Insurance	\$1,500
Rent	\$2 000

Additional funding will be taken from “Asaka” bank as a credit for 6 years. (Debtor should pay \$10.000 for each month). Also, mark-up on food in 200% good result will turn into 4-8 thousand USD per month. Profits in this case (without taxes) may be about 1-2 thousand dollars per month. So overall, it will be worth to start the new business [2].

The future restaurant’s layout will be viewed one of the convenient restaurant to dine out for coming guests in Tashkent. There are both open and close dining areas at restaurant. In hot days, customers will sit in open area and enjoy from delicious foods, drinks and musical fountain. In cold days, the closing area will be ready for customers to serve. Also, there will be a separate room that guests can organize parties, meetings and conferences (see number-7 in layout)



## Menu lists

Writing menu for restaurant plays an important role. Why we come up this menu price is that we will focus on:

- Advertising cost
- Labor cost
- Miscellaneous
- Utilities
- Administrative
- Rent

Also, Executive Chef of the restaurant should carefully compare the types and price of food in its restaurant with its competitors. To calculate food cost, the following formula will be chosen by owner of restaurant:

$$\text{Cost of food ingredients} \div .35 = \text{menu price.}$$

To summarize, in order to cover all expenses, we will put 10% price on food as service charge. That means, the restaurant will make bigger profit. Also

depending on season, there will be some changes of menu. For example, during the winter months, some of food ingredients will be expensive. In that case, we will change the food ingredients or type of food. For example, if the price of beef increases from \$10 to \$14, we will use mutton at \$12.

### ***CRITICAL ANALYSIS OF COMPETITION***

In this segment, our main competitors are located within the 1 mile radius along the Chilanzar Avenue. In our location, they are 3 main competitors: ECO, Nirvana and Green Mile vegetarian restaurants. (See table 3)

Table 3.

	<b>ECO</b>	<b>Nirvana</b>	<b>Green Mile</b>
<b>Operation hours</b>	Monday to Friday 11 am-9 pm Saturday 9 am-9pm Sunday - close	Monday to Sunday 11:30 am - 9:30 pm Sunday – 09:00 am to 6 pm	Monday-Saturday 9:00am-10:00pm Sunday 11:00 am-6:00 pm

<p><b>Products and Services</b></p>	<p>Vegan, quick service restaurant serves delicious and sustainable fare. Famous with its menu features healthy meals, beverages &amp; snacks.</p>	<p>Small independent restaurant that serves Vegan food such as: stews, bakery, sandwiches, drinks and food bowls</p>	<p>Organic Vegan Cuisine: This cosy restaurant offers healthy, delicious foods like Chinese and Vietnamese dishes</p>
<p><b>Pricing</b></p>	<p>lower price range food prices on -Food bowls \$11 -Bakery \$3-6 -Drinks \$3-7 -Sandwiches \$9-11</p>	<p>Reasonable acceptable pricing Competitive pricing compared to other competitors varying on specials Soup and sandwich (\$11-14) Salads (\$6-9) Juices and smoothie (\$5-9)</p>	<p>Highly competitive pricing Entrées range \$9-\$13 Appetizers are about \$4 Salads are approximately \$7 Drinks range from \$3- \$7</p>
<p><b>Methods of</b></p>	<p>Visa, MasterCard,</p>	<p>Debit, Cash, Visa and MasterCard is not</p>	<p>Only Cash</p>

<b>Payment</b>	Cash	accepted	
<b>Other features</b>	Low price of meals, have dancing area	10% discounts for females and kids, luxury environment	Music and colour lighting, complementary will be provided if guest buy something

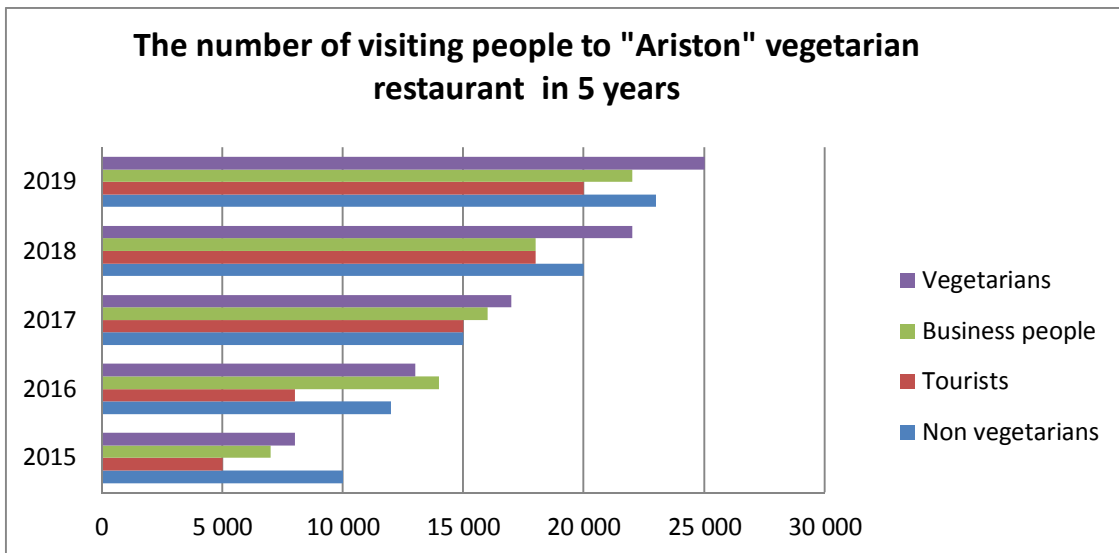
“Ariston” restaurant owner realizes to target 4 different types of segments to attract customers. They are:

- Business people – After the working hours or during lunch, these people want to relax and use their money for dining. Ariston’s comfortable atmosphere will be the one of the best place for business people
- Tourists – During the summer, majority number of tourists will be attracted by restaurants’ marketers via social sites, ads, radio and TV. A large percentage of tourists are constituted vacationing singles. Ariston’s vegetarian foods will create an interest for them.
- Local vegetarians – The convenient place and different type of delicious vegetarian foods will be perfect place to dine out for local vegetarians
- Non vegetarians – Musical fountain, aquarium, tasty foods in menu will generate interest in non vegetarians’ mind and attract them to try it.

These particular market segments will be between the years of 25 and 65 who have disposable income, are seeking trendy, upscale and comfortable vegetarian restaurant options. According to marketers’ survey, these types of people are likely to spend their money more on experiences they such as perceive

cosmopolitan, unique and sophisticates. Also they are the most open to achieving something food-wise, new and will embrace our future vegetarian restaurant. To create a reputable image, restaurant staff will offer service excellence, convenience, tasty foods, and exclusive business events, parties and others.

According to [3], there are about 27 million population in Uzbekistan and Tashkent’s population constitutes about 8 million people. Also, 15 vegetarian restaurants are found in the city, only 3 restaurants are situated in Chilanzar district which considered the main competitors of “Ariston” vegetarian restaurant. During the process of choosing the target market, from 25 to 60 years old make up 30% of the population; and hundred vegetarian people are interviewed by marketer that they said that they prefer vegetarian meals than traditional foods. Also 25% of business people who lives in Tashkent also twenty five people selected the diet foods. 20% tourists are suffering from obesity, so twenty people are interviewed and they chose healthy foods. 15% non vegetarian people are interested in something new, so they decided to visit the venue. According to graph 1, in five years, the visitation number of customers to “Ariston” will increase from 5.000 to 25.000 in four segments.



Graph 1

Table 4.

<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>• Ideal location</li> <li>• Combination of the menu</li> <li>• Great Atmosphere</li> <li>• High quality of Service</li> </ul>	<ul style="list-style-type: none"> <li>• New/not established</li> <li>• Higher price of foods</li> <li>• Limited funds</li> <li>• limited operating capacity during peak sales periods</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>• Take advantage of the number of consumers that are vegetarians</li> <li>• Growing trend away from obesity</li> <li>• Growing trend toward healthier diets</li> </ul>	<ul style="list-style-type: none"> <li>• Long term competition</li> <li>• Higher interest rate and higher inflation rate in the future</li> <li>• Changes in the business environment that might reduce our sales</li> </ul>

To analyse the business situation, SWOT analysis is a simple framework which is used to identify, examine and evaluate strengths, weaknesses, opportunities and threats of business environment. SWOT analysis helps to increase a company’s competitive position, achieve goals, facilitates organizational change, and stimulates positive activity. In table 4, there will be given SWOT analysis of “Ariston” restaurant.

“Ariston” vegetarian restaurant’s marketing strategy will be to promote its vegetarian food & drinks, and high quality service to repeat customers. Marketers’ research reveals that word of mouth is the best method of advertising to attract customers. Advertising costs can simply overwhelm a start-up vegetarian restaurant, that’s why keeping marketing simple, cost-efficient and creative will be challenging. For promotion, it requires overall \$1,800 to advertise the venue. The following promotion methods will be used to attract customers:

- Wall posters in high gateways – \$400
- Brochures - \$250
- Free occasional T-shirts at local stores events - \$500



- TV and radio advertisements - \$650

Other types of media also will be used several months later (after opening the business):

- Direct Mailing
- The Internet
- Local Newspapers
- Word of mouth advertising

Conclusion. In conclusion, this report covered preparing opportunity analysis for “Ariston” vegetarian restaurant including: description of venue, location and its innovation. Site layout and menu prices are also provided. Critical analysis of completion, identifying the target market, industry and market, SWOT analysis were determined and supported with statistics, graphs and tables. Lastly, marketing plan was conducted in a starting new business.

#### **REFERENCES:**

1. Davis, Sarah F., and Carl K. Winter. "Organic Foods." *Journal of Food Science* 71.9 Chicago, Illinois, 2006.
2. Schaper, M, Volery, T, Weber, P & Gibson. *Entrepreneurship and Small Business*, 4<sup>th</sup> Asia-Pacific edn, John Wiley and sons. Australia, 2014.
3. Slezak, Steven E. *An Introduction to the Dynamic Strategic Planning Process. Agribusiness Strategy Formulation.* California Polytechnic State University, San Luis Obispo, 2009.
4. Timmons, JA, Zacharakis, A & Spinelli. *Business Plans That Work: A Guide for Small Business*, McGraw-Hill, New York, 2004.

## ABOUT HOW UZBEK SMARTPHONE MAKERS CAN OVERTHROW THE REIGN OF COMPETITORS

*Sh. Latipov, F. Musaeva*

*Summary:* This article is about how the right marketing strategy can help Uzbek smartphone makers to cut share in the local market from such tech giants as Samsung and Apple.

*Key words:* Benchmarking, marketing strategy, Xiaomi, Samsung, Apple, smartphones, Uzbek companies, UZte, Artel, Olive Telecom.

We can notice that modern technologies in the IT sphere is rapidly developing and in the market almost every day there are more and more new gadgets and personal devices. It led to the situation in which normal users do not even have time to follow all the novelties of the market of mobile devices. Those who are truly obsessed with smartphones, and cannot imagine their life without them, have to update their device almost every year to keep pace with the times, and it means to be in the forefront and be the first one.

It the last decade, five large companies are firmly entrenched in the smartphone market and continue to compete with smaller companies to keep their share at the world market. Beginning of 2015 marked the start of a new round of technological advances, including mobile technologies. At the market quickly began to appear new smartphones from leading manufacturers. National companies can not displace the experienced producers from their field, because of, in my opinion, the lack of effective pricing policy, poor marketing strategy and production. Of course, there are buyers for domestic products, but compared with the share of the giants, our companies seem to be "a grain of dust."

Worldwide smartphone sales to end users reached a record level in the fourth quarter of 2014, showing an increase of 29.9% in compare with the same period of the previous year to 367.5 million units, report the resource **Gartner**. During this

period, the first place in terms of sales in the global smartphone market, Samsung has given way to Apple. Samsung remained the leader since 2012.

**Worldwide Smartphone Sales to End Users by Vendor in 4Q14 (Thousands of Units)**

<b>Company</b>	<b>4Q14 Units</b>	<b>4Q14 Market Share (%)</b>	<b>4Q13 Units</b>	<b>4Q13 Market Share (%)</b>
Apple	74,832	20.4	50,224	17.8
Samsung	73,032	19.9	83,317	29.5
Lenovo*	24,300	6.6	16,465	5.8
Huawei	21,038	5.7	16,057	5.7
Xiaomi	18,582	5.1	5,598	2.0
Others	155,701.6	42.4	111,204.3	39.3
<b>Total</b>	<b>367,484.5</b>	<b>100.0</b>	<b>282,866.2</b>	<b>100.0</b>

Source: Gartner (March 2015)

\*The results for Lenovo include sales of mobile phones by Lenovo and Motorola.

**Worldwide Smartphone Sales to End Users by Vendor in 2014 (Thousands of Units)**

<b>Company</b>	<b>2014 Units</b>	<b>2014 Market Share (%)</b>	<b>2013 Units</b>	<b>2013 Market Share (%)</b>
Samsung	307,597	24.7	299,795	30.9
Apple	191,426	15.4	150,786	15.5
Lenovo*	81,416	6.5	57,424	5.9
Huawei	68,081	5.5	46,609	4.8
LG Electronics	57,661	4.6	46,432	4.8
Others	538,710	43.3	368,675	38.0
<b>Total</b>	<b>1,244,890</b>	<b>100.0</b>	<b>969,721</b>	<b>100.0</b>

Source: Gartner (March 2015)

\*The results for Lenovo include sales of mobile phones by Lenovo and Motorola.

However there is not the only threat to the Korean company. Very strong and fresh competitor coming from China, which has already managed to overthrow the throne of Samsung as a company with a larger share in China. It is Xiaomi. This manufacturer has such a short time (4 years) to achieve great results. Achievements are not left behind and investors put money into Xiaomi. It raised more than \$1 billion in the latest round of funding, according to the Wall Street Journal, giving

the Chinese company a \$45 billion valuation. It is worth noting that sum is bigger than Uber, Netflix and Twitter.

This breakthrough gives hope to other small and national companies, which can take a cue from the Chinese startup called in the East "China Apple", and lead its market with the prospect of further international level.

In our country such companies as Artel, Uzte and Olive Telecom try to compete with the giants' quintet. There is some progress, but this is still not enough. The State incents and subsidizes the national companies providing benefits and eliminating some taxes for them. But the situation has not nearly changed. The bulk of customers, especially the young, buy phones of our competitors. So how can impose a real fight to the largest producers of smartphones in the domestic market – look to the strategy of Xiaomi.

The Chinese company has successfully conducted a benchmark analysis and has incorporated the best features of its competitors, adding their innovations.

In this article I will highlight the advantages of Xiaomi and try to find a solution how to implement them in our company.

### **□ 1 Correlation "price-quality"**

The main strategy of Xiaomi was not only competing in price. Sure enough that smartphones and tablets of Chinese company are lower cost than production made by leadets of market (Apple and Samsung), but not the cheapest in the market. You can find cheaper analogies but their quality leaves much to be desired. Those devices are miserable copies of Samsung models which are made from cheapjack materials.

Good phone in a lower price – the key move in the core strategy «Chinese Apple». Its products don't break with ease due to durable case, high-grade screen and technical «filling». It's a pity to say that our enterprises can not boast with the same characteristics. Now more and more people prefer quality thing to cheaper one.

## □ 2 **Razor and Blades business model and development of new opportunities**

Handsets of Chinese company are sold nearly at a prime cost or even at a loss. But where is the logic? It's simple. The company uses a business model «**Razor and Blades**» that implies the sale of devices at a loss (razor), but with the confidence that there will be a good profit with accessories, services, applications, and the themes (blades).

So Uzbek companies can try to use this method. However, none of the manufacturer does not have own accessories and applications. Firstly they need to set up production of complementary goods. It worth noting that there is no company in Uzbekistan producing such products. Moreover it will create new workplaces. You can attract local designers to create different prototypes accessories with national kaloritom. Our university TUIT provides to the labor market good programmers who gained experience from the Korean and Indian partners in our centers. As is the case with accessories, you can engage them to create different applications for mobile phones. Of course, in exchange for a worthy reward. And best of all to organize a competition throughout the country among programmers that with good prize draw the rest of the young people take an interest in this profession. Of course it does not pay off immediately. Therefore, I consider it is necessary to state cover expenses of organizing these events.

## □ 3 **Online trading and making market «hungry»**

Xiaomi sells its phone via internet. It allows reducing costs of sales and overhead expenses linked with brick and mortar stores. It shortens outlay in dealing with distributors, retailers and agents as well.

Furthermore there is another feature of the Chinese company. It prefers to produce devices in a small amount at intervals for producing large quantities of goods and sell at a time. Thus, it creates expectations and urgency, and this leads to the capture of the hearts and minds of customers. This action also leads to the fact that you will not have a surplus of raw materials and excess product in the market

that improves the function of the whole system. As a result, company creates a "hungry" market, which demand will always prevail over supply. The dream of every producer.

Of course, online trading in Uzbekistan is just developing. But it exists. You can use the system online retail payments «WEBSUM», SMS payment of UZcard to order devices or pay for services and etc. The best option - create your own payment system. Competition in the market is useful. Regarding the distribution of phones, you can enlist the help of Uzbekistan post office «O'zbekiston pochta». It also will create new jobs and stimulates the development of logistics in Uzbekistan.

#### □ 4 Good product advertise itself

Vice president of Xiaomi Tech Hugo Barra said that the first buyers of company wanted to see a good product instead of good marketing. Customer loyalty to the brand so high that clients make marketing for Xiaomi via the best advertising channels - real advice and reviews.

In fact, almost Xiaomi's all fans become loyal brand advocates.

Uzbek producers, except for promotions and contests, may just give some part of smart phones spread for free all over the country. If you can provide customers with that thing they want, all of them tell about your product, even better than you.

#### □ 5 Zero advertising

The Chinese company saves millions of dollars on advertising, unlike competitors Samsung and Apple.

Lei Jun founded Xiaomi in 2009, and its first product was an operating system MIUI. Lei Jun decided to avoid spending on marketing and started working on brand recognition through the forums. Employees for a long time actively participated in forums, commenting, sending messages and advertising product. They used a mobile phone MIUI forum that became Xiaomi fan's camp, where happens all examination process of new products. Engineers day and night

communicate with their users and find out about the shortcomings or mistakes of their product.

Our national companies do not use the power of social marketing. I checked Uztel official page at Facebook and cognize that the last message was written on May 24 2014. So there is something to think about.

▫ **6: Head of the company should be face of the brand**

The last, but also an important point – the face of the brand. Founder Xiaomi Lei Yun trying very much to make his brand modern and cool. He, like the founder of Apple, Steve Jobs, takes part at various events and talks about his brainchild, communicates with his customers and makes them gifts.

Agree that we know nothing about the heads of our companies. May be they will feel uncomfortable. Otherwise, they can choose someone with charisma, leadership qualities, persuasive force who will represent your company's products everywhere.

To sum up, I would like to say that our companies should move one step with the times, comply with modern requirements, use new approaches in the organization, think outside the box, produce their products, not to fill the shelves of our shops with foreign goods, bring in technological innovations, attract and encourage talented youth and main of all don't stop in developing.

**INTERNET RESOURCES:**

1. [www.gartner.com](http://www.gartner.com)
2. [www.wikipedia.org](http://www.wikipedia.org)
2. <http://chinamarketingtips.com/>
3. <http://www.gizchina.com/2014/04/18/brief-history-xiaomi-chinas-tech-success-story/>

**FEATURES OF DEVELOPMENT OF THE INFORMATION  
ECONOMY**

***D.R. Rakhmatkariev, N.Y. Barnoyeva***

***Summary.*** *The following article is devoted to the features of development of the information economy.*

***Key words:*** *post-industrial, Knowledge-based, distribution and consumption*

In spite of the relatively recent introduction of the definition of "information economy", the term was introduced by the American scientist M. Porat in 1976, the phenomenon of "information economy" appeared much earlier in the process of formation and development of industrial society. Knowledge-based economy can be seen as an integral auxiliary branch inherent industrial economy and growing in its depths. In the course of its development, the industry has led to the degeneration of the industrial economy in to the post-industrial. The role of the information economy, in the development of society is so great that this stage of economic development named as information. The term information economy went into a scientific revolution in 1998 after the publication of the famous monograph written by Manuel Castells'. "The Information Age: Economy, Society and Culture". This provided the impetus for understanding the role of information in the modern world and attempts to create a coherent economic theory of the information society. Information Economy (rules of management in the post-industrial society) - the science that studies the economic activity of the person, which includes extensive use of electronic (information and communication) technology in the process of production, distribution and consumption of public goods.

The information economy is:

1. Economy, where much of the GDP is being supported by the production, processing, storage and dissemination of information and knowledge, and more than half of employees are involved in these activities.

2. The concept feature of those forecasts, the future information society, where the emphasis is on the leading role of electronic information communication technologies in the development of all the major sectors of the economy. In this



case, the information itself is identified with the commercial products and studied mainly with the help of statistical methods.

The peculiarity of the information economy is aimed at the mass and the global nature of economic cooperation, as well as the distribution of wealth created among consumers globally. Unlike traditional methods of managing common economy based on market management and business model (based on the scheme "demand - offer"), based on the information economy management, innovative business, engineering and information autoformalization (autostructuring) of economic processes.

The main objectives of the information economy are:

- At the macro level - is the choice of the direction of economic development in the framework of the ongoing global processes, which depends on the ability of economic power to move the company to the new external resources and the qualitative transformation of its structure? More broadly, it looks like the development of the no sphere as a result of evolutionary interaction of its components: the techno sphere, anthroposphere and socio sphere
- At the micro level - the creation of business entities of management algorithms to obtain the economic energy of the environment and transform it into a business and create working places.

As an example, the implementation of information and economic cooperation on the basis of information and marketing network of the CIS countries, in which the function is implemented as a macro-level due to the fact and correlation in time for the information society and electronic ministries, electronic regions, electronic interest groups, and the function of micro level realized through electronic office participant of network.

In his famous book, "New Rules for the New Economy" by K. Kelly outlined the main features of the new economy, which, in his opinion, are most evident in the changing world:

- The global nature of the changes,

- Manipulation of intangible benefits: ideas, information and relationships,
- Close intertwining and interaction of the individual segments of the new economy.

These three characteristics create a new type of market and society, whose activities are based on the network principle. A situation where "the world of fine technology begins to rule the world of cars - the world of reality» («the world of the soft ... will soon command the world of the hard - the world of reality»). With the help of the Internet and related systems, and information technology markets and prices on a global scale are becoming more accessible to potential buyers and sellers. The world market of an abstract category is converted to actual existing reality. The globalization of economic activity is in the field of international trade, the international movement of factors of production, international financial transactions. There was the global capital market, which operates in real-time: speed of transaction is that capital flows are moving almost instantly. In the financial area occur most rapidly expanding foreign exchange transactions and securities transactions, including derivative financial instruments. In the field of international trade, trade in services is growing rapidly, technology, intellectual property. Information has increased and it became available to the public. But this is tremendously increased the amount of information and creates certain difficulties. Information continues to grow, the inevitable contradictions of sources increases the inconsistency of the information. In the article, "Rationality as a process and product of thought" American economist Herbert Simon notes that the information is a boon only in a world where it is small, and in conditions when there is offered a large amount of diverse information, it often starts to play a negative role, distracting us from the essential. Real boon scarce resource in these conditions becomes attention not information. There is a phenomenon known as the phenomenon of "information noises" - a situation where make rational decisions difficult due to the rapid increase in the volume of redundant information, which reduces the potential growth of production efficiency.

Complexity is no longer the fact of getting information and the possibility of its high-quality treatment. Often, we choose not the information as well as the source of information. It confirms the theory of informational cascades, which is popular in recent years.

It is clear that, it is hard to speak about transition to the online mode in the banking sector, but rather on the parallel use of traditional methods of doing business and the opportunities that provide new information technologies. Uzbekistan has a lot of potential customers of online banking services, which have not yet been properly developed. This is due to several reasons: the problems of the banking sector (Internet projects require significant resources, not all banks capable) not regulated system of payments and payment mechanisms, yet distrust in the banking system. Development of e-business will take place in the Uzbek conditions, simultaneously with the improvement of the economic mechanism. It is obvious that the need to transform the Uzbek situation in accordance with the requirements of the global information society. Knowledge is one of the rarest and the most important resource Uzbekistan. And with regard to Uzbekistan, we can talk about how knowledge-based training generalists and on specialized technical knowledge. The potential of knowledge-based economy gives Uzbekistan a chance to use the knowledge gained to achieve high economic performance and full effective participation in today's global world.

## **CONVERTING DEBIT CARDS TO HYBRID CARDS**

**Rahmonqulov G'.F., Zokhidova G.E.**

***Summary:** Transforming debit cards to hybrid cards. To automate credit system. A chance of spending money even there isn't money in card. Information about credit cards.*

***Keywords:** Debit, Credit and Hybrid Card; Interest charge; drawbacks of cards; benefits.*

This article suggests utilizing hybrid cards which converted from plastic cards. Using hybrid cards solves a number of problems between customers and banks and gives us the next efficiencies: time consuming, superfluous documents, to automate credit system, extra profits to both sides and etc. To investigate this project to the banks of Uzbekistan, many people will enjoy the convenience and protections it offers, such as the ability to defer payments and keep records of purchases.

### What Are Hybrid Cards?

The Hybrid cards include itself our simple plastic cards and credit cards at once. The cards like that give us a chance to spend money even there isn't enough money in the card and all purchases will be written like a debt at the history of bill board customer. All system works too simply, like mobile operator system. Hadn't money? Just borrow some amount of money then pay it in time with the small percent. Think of credit as borrowed money. This money is made available to you, but it must be repaid within an agreed amount of time. Hybrid cards provide a line of revolving credit. This differs from charge cards, which require that the balance is paid at the end of the month. Hybrid cards are obtained based on your ability to repay the borrowed money. The lender is cautious about giving money to a risky borrower, especially since the money is unsecured. A borrower's spending habits are used to determine his or her risk; these are assessed based on his or her credit report. The report is a very important tool that lenders, such as credit card issuers, use to make a decision as to whether to loan you money or not. The credit report keeps tabs on your credit history. It aggregates your financial information, such as your credit accounts, the account limits and balances, and your repayment history. Hybrid cards can be a great financial tool, if they are used wisely. But they also can quickly get you into financial trouble if used carelessly. Consumers should be aware of which factors to consider when transferring balances or closing a hybrid card account. Let this column be your resource for hybrid card information on a

multitude of topics. As we said hybrid card includes credit card itself so that, there some information about credit card:

- Credit cards are now an indispensable part of the American way of life.
- According to the Federal Reserve, 74.9% of all U.S. households have a credit card, and 46.2% of all families carry a credit balance.
- In 2006, 666.3 million signature-based, general purpose cards were in circulation.
- The average household has \$7,000 to \$8,000 in credit card debt and pays 14.9% of disposable income in consumer debt payments.
- The average household with a 14.9% interest rate on a \$5,100 balance pays \$760 per year in interest payments.
- The median family income is now \$43,200, and the typical family's credit card balance is now almost 5% of its annual income.

### **Hybrid Cards or Debit Card: Which One Is Better?**

Debit cards and credit cards may look the same in your wallet, but they operate very differently. Debit cards pull from your bank account funds, while hybrid cards draw on a line of credit. There are distinct benefits and drawbacks to using both debit and hybrid cards. Which is better for you depends on your financial goals and how comfortable you are with managing your money.

#### Debit Card Benefits

- Debit cards are great option if you don't want the temptation of a line of credit.
- Debit cards are issued by your bank and linked to your checking account, so you can never spend more than you have in your account.

- They're a good tool for university students and young adults who are still learning how to manage their funds, because they don't come with the hassle of monthly bill

#### Debit Card Drawbacks

- Debit cards aren't a great option for emergency funds.
- Debit cards if aren't ideal for young adults looking to build your credit
- Debit cards if aren't considered a line of credit, so using one responsibility won't increase your credit score

#### Hybrid Card Benefits

- One of the best benefits of hybrid cards is that they'll help you build your credit.

- Paying off your balance in time and in full will steadily increase your credit score, which means lower interest rates and better terms when you look for other loans

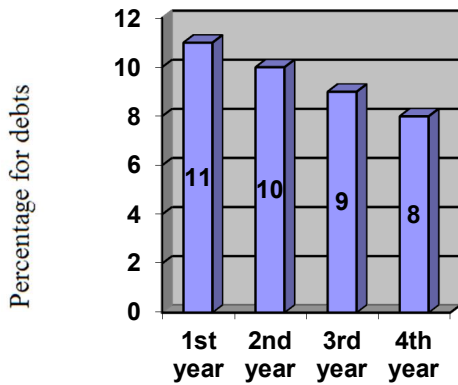
- Chance to buy everything even there isn't enough funds in card

#### Hybrid Card Drawbacks

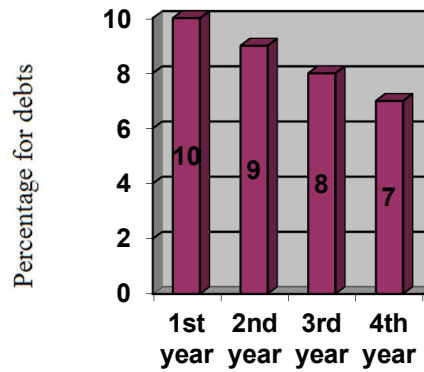
- Many individuals simply can't deal with the temptation that come with a hybrid card

- Many credit users aren't good at keeping track of their expense throughout the month and face an unexpected surprise when their bill comes due Hybrid card issuers are banks, credit unions, savings and loans and other financial institutions. The issuers arrange the card holder's credit agreements, but they must abide by the association's basic standards. Since, the amount of debt is unsecured, the bank should require additional trusted persons for customers, if they can't pay credits in time, and trusted persons should to be paid in a place of customer. The debts from card are limited.

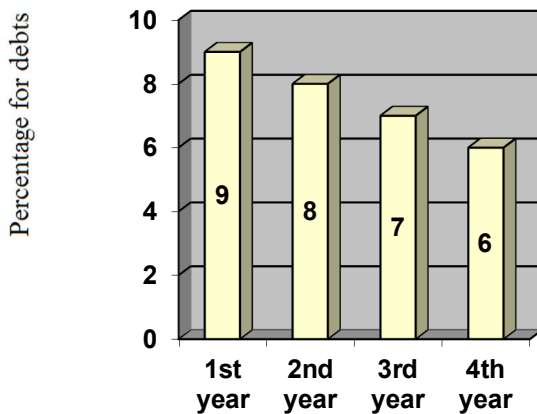
## Limits and tariff plans



■ up to 1.000.000...



■ up to 2.000.000...



■ upper than 3.000.000 soums

There are given some diagrams for debt of hybrid cards. In the bellow of the diagrams shows the years which customer used hybrid cards from the bank, and the right side shows us percentage debts for a month. Of course all this information is thought up, but each bank can offer its own limits and tariff plans. The more you spend, the less you pay percentage and the more time you use services of bank, the less you pay percentage. Also banks can offer with their customers special services which made by banks looking its conveniences. Before you can get a hybrid card, you have to have an issuing bank approve you and agree to let you use its money to make purchases on the promise that you will pay it back. Banks benefit from issuing hybrid cards in tangible ways that directly increase their profitability, but also in intangible ways that increase your loyalty as a customer.

## Interest charges

When banks issue hybrid cards, they're essentially lending you money to make purchases. You pay them back when you get your salary. If you don't pay in time, the bank charges you interest (often at very high rate). According to International Bank Association as of January 2014, the average variable rate card charged over 15.3 percent.

- over 30 million people live in Uzbekistan
- On static information 62.3 % population use plastic cards
- What happens if in average all of 62.3% population will borrow minimum 10.000 soums for a month?

If we use hybrid card system in Uzbekistan, we can give next benefits:

62.3% population	Total debt	Percentage for debt	Monthly benefit from per of debt	Monthly inflation	Totally benefit for a month
18.690.000	10.000	11%	20.559.000.000	-0.6%	19.325.460.000
62.3% population	Total debt	Percentage for debt	Yearly benefit from per of debt	Yearly inflation	Totally benefit for a year
18.690.000	120.000	11%	246.708.000.000	-7.2%	228.945.024.000

As we see, this numbers at minimum, using hybrid cards is advantage to both sides. Economics of Uzbekistan will be changing at an alarming rate due to a new system of card.

However, Hybrid cards can either help to improve your lifestyle by offering convenient payment and helping you build credit, or they can leave you with a pile a of debt - it all depends on how you use them.

### **Hybrid Cards: Pros and Cons for customers**

The ease in swiping a hybrid card for a purchase has its pros and cons. It may either help when handled properly or become a detriment. If you are able to pay



your bills on time every month and not carry over a balance, hybrid cards are a great convenience. The cards can also land you deep in debt. This often occurs if you're unaware of the terms of the hybrid card agreement, and if you carry too many cards.

For the government hybrid cards work only for a big amount of benefits.

Most often hybrid cards can provide convenience for customers. They give emergency help from economy rate for population and also utilizing new system to banks of Uzbekistan, it gives high profits for government. Here we briefly review the key points we've covered in this tutorial.

## «COMMUNITY BASED TOURISM» - INNOVATIVE METHODS OF MANAGEMENT OF TOURISM IN UZBEKISTAN

*M. Ro'zmatov, M. U. Yusupova*

***Summary.** This article is focused on the creating the Community Based Tourism, which is possible with existing laws and legal acts, in particular, on the bodies of self-government, of public funds for non-profit non-governmental organization, private enterprise and so on.*

***Key words:** tour enterprises, services, tourism, natural resources, residents, visitors, local, investments, Community Based Tourism.*

In recent years, tourism and local communities are involved, that is the mahalla, rural settlements, communities, etc. referred to as CBT - Community Based Tourism.

Tourists, who are interested in nature and ethnography, often visit rural places where people live, preserved traditions and way of life. Their livelihoods depends on communication with the outside world - the availability of natural resources (flora and fauna), minerals.

Often villagers consume resources faster than nature has time to recover them. They cut down trees for fuel, hunt animals for food, and collect rare herbs as medicines. This situation has a negative impact on the environment, and the local economy is growing unstable, does not create a good income residents. However, tourism can help life for the villagers, farmers.

On the other hand, tourists often come to the countryside, enjoy the resources on a par with the residents, but returns are for the local economy does not happen. All proceeds from these tour organizers receive. This leads to social conflict between the residents and visitors.

Therefore, the practice established in the world, when travel agencies and local communities together arrived for joint services. It is beneficial not only CBT for tourists and travel agencies, but for also residents.

Travel agencies organize trips to tourist villages. They tout terrain, culture and traditions of the inhabitants, some of the activities funded or seeking loans, credits, sponsorship infrastructure enjoyed by everyone - residents and tourists.

In turn, the locals:

- Provide housing;
- Finish food;
- lead guests in the campaigns;
- Organize recreation and entertainment;
- Provide safety.

Tourists willing to pay for it all, the main thing - services must be of high quality. To do this, residents of specially are trained to receive and serve guests. In this case, there is a dual obligation: the community keeps its traditions and culture, respect travelers, and tourists, in turn, tend not to destroy the social foundations, which have developed in the area, show respect for the residents here to follow the established rules of conduct.

CBT has been developed in many developing countries in Africa, Southeast Asia and Latin America. In Central Asia, particularly CBT dynamically operates in Kyrgyzstan - in 11 villages, there is even the Association of CBT. In Uzbekistan, this form of organization of services can also be effective, and now it is developing in the territory Bustanlik area, particularly in the villages – Chimgan, Burchmulla and Khumsan.

Creating CBT is possible with existing laws and legal acts, in particular, on the bodies of self-government, of public funds for non-profit non-governmental organization, private enterprise and so on.

CBT can be created as:

- A non-profit organization that will assist local entrepreneurs in the creation of tourist products, cooperation with tour operators, the improvement of services, improvement of infrastructure, marketing and certification. It is expected that it

will attract donors, sponsors and investment that will be developed individuals and Civil Society, the park administration;

- Commercial enterprise of collective ownership where each defined contribution shareholders. It will enter into agreements with the owners of accommodation and leisure, individuals in the organization and delivery of quality services to visitors and tour operators to implement tours to the village. The company may obtain bank loans, financial transactions with corporations and individuals, to contribute to the support of social stability and security in the village, check the quality of services to promote the improvement of the infrastructure.

-An informal alliance of individuals who have a patent for private business (accommodation, tour, food, leisure), as well as their cooperation with tour operators.

Restrictions may relate to the part where tourism is licensed sphere and have its travel agencies and hotels. Therefore, there must be the part of tour operators who will be involved in the process of CBT and individuals under its license, but at the same time participating in certification services.

Requires a regional solution of the local administration on the promotion of CBT. On the other hand, it is desirable the government decision to be, which is more difficult, given the complexity of bureaucratic process. It is also necessary to cooperate with the National Park Administration CBT and tour operators. This should be the main links of the chain in the organization of tourism in the villages.

Meanwhile, according to experts, uniform standards for participants SVT should be developed:

Power-Products and Services;

-Sanitary and hygiene standards;

-General requirements for tourists;

-United signs in the village so that tourists could be guided by them;

-United statistical reporting.

## The structure of cooperation in CBT

<b>Action by the CBT</b>	<b>Action by tour operators</b>	<b>Investment</b>
<ul style="list-style-type: none"> <li>- The creation of tourism products,</li> <li>- Services, their quality and volume,</li> <li>- Improving the infrastructure of the village;</li> <li>- The development of crafts, crafts and folklore;</li> <li>- Creation of an information item that would recommend unorganized tourists accommodations, prices and so on.</li> </ul>	<ul style="list-style-type: none"> <li>-Marketing and promotion of tourism products market;</li> <li>- Active advertising;</li> <li>- Work with partners.</li> </ul>	<ul style="list-style-type: none"> <li>Supporting environmental trails in good condition;</li> <li>- Means of accommodation and equipment;</li> <li>- Means of communication;</li> <li>- The object of culture, ethnography and leisure;</li> <li>- Maintaining a "clean environment" settlement;</li> <li>- Elements that support tourism;</li> <li>- Market and social infrastructure.</li> </ul>

Creating a network of accommodation facilities with the total capacity, the level and scope of services, conducting systematic download and pricing - are the main goals of the strategic and organizational cooperation with SVT tour enterprises. (see. Table 1).

In conclusion, we can say, the more representatives of the peoples of the world will come to our country, the more they know about us, and the more we will show its capabilities. To do this, we must first strengthen the culture of guest service, to bring it to international standards.

## **BUSINESS PLAN OF REALIZATION TRAINING CENTER ACTIVITY**

*N. R. Usmanova, D.M Alikulova*

***Summary:** The article describes business plan of training center, the new ways of getting profit which bring the advantages to the organization and at the same time is aimed to precede the law of Republic of Uzbekistan about education and pedagogical training. So, the presented business plan has the high practical value. It clearly opens the main risks and the source of income.*

***Key words:** Profit, expenditure, pedagogy and science, applicants.*

The president of Republic of Uzbekistan I.A. Karimov on 10<sup>th</sup> of May in 2012 stated new law about further learning system which is directed to improve the knowledge of foreign languages. [1]

Since 2013-2014 learning foreign languages is widely spread all around Uzbekistan, children have already begun to study English beginning from the first grade. Besides English became the main part of entrance examination at nearly all higher educational institutions. Moreover, the language is used in national telerradio company, agriculture, science, universities and ministry. Thus, there is a need to improve language competence of young generation. It can be quietly considered as the way to develop economy and to improve international relationship. So the article makes up the business plan the advantages of which are seen in the organization working on the base of this plan and The Republic of Uzbekistan as the business plan tends to develop the experience of teachers due to the law of Republic of Uzbekistan about "Training scientific and pedagogic specialists". [2]

So, the description of the business plan is given below. The information is presented in the form of table and description to clarify the results.

Thus, to open study center we need capital.

Firstly, for study subjects we need a place. The best place is the center of block. So, there are many houses and flats.

Secondly, we need equipment.

Thirdly, we should invite to work experienced teachers. Moreover, an office manager, an accountant and a janitor.

### ***Organization Plan***

- The state of main capital is based on organization plan, financial situation, realization of ratio charge structure.

- To make profit the business should be creative and cooperative.

- Besides, the training center should have "License" or authorization from ministry of education.

### ***Financial Plan***

- Volume of financial project from source must be shown in the way of a table.

- Financial result is realized by investment of project through the distribution of money and quantity of income received from service every month and year by year.

- The first six months design should be certain at money and debt. Necessary term is positive numeral money stream for every interval time.

- Efficiency of project invests estimate the realization of plan without misplace and effect on budget.

- This business plan since the beginning of realization of project during 2 months will have positive profit if the project sum is clear.

- Make up value realization service in according to design of open organization spot without the risk of constant expenses to remainder prices service.

### Risk

Risk	Example goal of project	Percent %
Low	Invest base on inexperience teachers	3-5
Middle	Improve teach by experience teachers	8-10
High	Center's pupils enter universities	13-15
Very high	Invest exploration and innovation	18-20

### Invest

	II	1 month				II	2 month				AI
					6				0	1	12
1.Capital money place(center)		23	23	23	934.3	937	23	234.	234.	34.37	18
		4.3	4.3	4.3	75	500	4.	375	375	5	75000
		75	75	75			75				
2.Capital money for equipment's.	43										43
	90										90000
	00										



	0										
3.Other necessary things for study.	25000					150000					400000
All sums:											665000

### Money expenditure

	1 month	2 month
1.Rent(place of education center)	1.125.000	1.125.000
2.All the services: light ,trash, water.	100.000	100.000
3.Expenditure for stationary.	100.000	100.000

### Profit Plan

	1 month	2 month
1.From quantity of pupils.	7.000.000	7.000.000
2.Selling some types of books.	200.000	200.000
3.Other profit (Extra	200.000	200.000

lessons and translation service)		
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**Settlement.**

Rent room about \$ 300 for a month.

1. Tables:  $16 * 150.000 = 2.400.000$  sum
2. Chairs:  $16 * 90.000 = 1.440.000$  sum
3. Blackboards:  $3 * 100.000 = 300.000$  sum
4. Stationary: 250.000 sum

**Expenses for every month:**

1. Light-55.000 sum(for a month).
  2. Trash-25.000 sum.
  3. Teacher's salary-2.100.000 sum.
  4. Office manager's salary-300.000(plus 1% from all profit).
  5. Accountant-400.000 sum
  6. Rent-937.500 sum
- (Teacher's salary is from one pupil 30%)
7. Advertising agencies: for example: "Darakchi" makes up-120.000 sum
  8. Flayer-80.000 sum

**Incomes for a month:**

English and Russian price for a student:

- In group-100.000 sums three times a week.  
 Individual-150.000 sums three times a week.

Math and Physics are:

- In group-150.000 sums three times a week.  
 Individual-220.000 sums three times a week.

**Extra services:**

1.To do schools and college's homework (approximately 10000/15000 sums for a lesson).

2.Translate some documents (approximately 20000/25000 sums) .

The average amount of pupils is 60. So, one month expenditure is 3.520.000 sum. Income for a month 3.880.000 sum.

Over all it can be seen that this situation may be profitable for few months increasing month by month. If training center invites foreign students from such faculties as psychology in Westminster University or undergraduate students of University of Pedagogy named after Nizomy and Uzbek State World languages University to conversation club it gives the opportunity for both, for training center and invited undergraduates. As for the latter one they are allowed to practice their knowledge and create new teaching methods on the basis of classes which they give to the students of training center. At the same time the training center will increase the profit at this period as the classes given by undergraduates are not paid and, moreover, the involving specialists of pedagogy will attract more attention of people willing to study at study centers. Besides, it is suggested that pupils who prepare to enter to university can be tested by the teachers of training center and those who get good mark will not pay for learning for the next month. Thus, the business plan is considered to be profitable as it involves the strategy which doesn't lead to a big amount of outcomes and supports the Uzbekistan State Program of Improvement of Foreign Language Competence and Retraining teachers.

**EFFICIENT USE of TIME IN JSC 'UZBEKTELECOM' USING  
METHODS of TIME MANAGEMENT**

*Z. K. Utegenova, V.Kh. Gaziyeva*

**Summary.** *This article is dedicated to an efficient use of working hours in JSC 'UZBEKTELECOM' using methods of time-management. Methods of time keeping and photo are considered in this article.*

**Key words:** *Time management, working hours, allotted time, working day, efficient use of time, photo of time.*

It seems that there is never enough time in the day. But, since we all get the same 24 hours, why is it that some people achieve so much more with their time than others? The answer lies in good time management.

As we know that inefficient use of working hours causes a big damage to a national economy. “Time is the most limited capital and if you can not dispose of it, you can not dispose of anything else.” [1]

Addressing weaknesses in the use of working time is an important condition for growth in production without increasing the number of employees. In this regard, increasing the importance of studying the level of efficiency in the use of working time, the dynamics and structure of its losses in the company 'Uzbektelecom' scientific development of ways address them. In accordance with the purpose it is necessary to analyze the current process of working time on the example of JSC 'Uzbektelecom', also consider the main ways to improve the efficient use of working time.

Joint Stock Company 'Uzbektelecom' is the largest telecommunication operator, which network covers the entire territory of the Republic of Uzbekistan. Using its telecommunication network based on modern technologies, the Company provides services to operators and providers of fixed and mobile networks; international and long-distance communication and etc.

The use of time-management assumes that people will be creative in his use of the conditions of reduction of working time losses to ensure an effective combination of the elements of the production process in JSC 'Uzbektelecom'.

For the analysis of the use of working time by the investigated enterprises we shall make up a table 1:

Table 1.

Facts for the analysis of the use of working time fund per a day:

	Day 1	Day 2	Day 3	Changes		
				from 1st to 2nd day	from 2nd to 3rd day	from 3rd to 1st day
Number of clients served per a day	27	23	15	-4	-8	-5
Hours of working with clients	4,50	3,30	4,20	-1,40	0,9	-0,3
Average of working hours, h	7,47	7,36	7,38	-1,10	0,20	-0,9

This analysis suggests that the number of customers each day decreased, and the number of allotted time to work with clients periodically decreased. Thus, we can come to the conclusion that for the remaining time they can serve more customers than they performed in one working day, as well as the number of customers would increase to over time.

Table 2.

Photo of individual working time working with one client:

	Day 1		Day 2		Day 3		Average
	min	%	min	%	min	%	min

1	Receiving customer	10	min	7	min	9	15	8,7
2	Spends time on extraneous conversations	12	20	14	23,3	13	21,7	13
3	Wasting time explaining the problem one client	5	8,35	7	11,7	6	10	6
4	Preparation of the necessary documents to the client	13	21,7	17	28,3	15	25	15
5	Making these documents	3	5	4	6,7	4	6,7	3,7
6	Total	43	71,7	49	81,7	47	78,3	46,3

As we can see from the above analysis, they spend about 46 minutes one client at the reception, 77% of their working time on average. Inefficient use of time in this case is due to spending too much time on extraneous conversations, as well as the preparation of necessary documents. If this time spent in vain cut, then you can not serve a single operator to one customer, but two.

Table 3.

Performing other cases:

Other cases	Day 1	Day 2	Day 3
-------------	-------	-------	-------

140 min						
Names	min	%	min	%	min	%
Adding debtors to the list of debts Total	30	50	33	55	26	43,3
Prepare letters to debtors	20	33,3	17	28,3	19	31,7
Convert letters	20	33,3	17	28,3	18	30
Send letters to debtors	18	30	19	31,7	16	26,7
Short outage time	15	25	16	26,7	13	21,7
Talking	16	26,7	15		17	28,8
Fulfill their personal affairs	20	33,3	25	41,7	26	43,7
Execution of an order	10	16,7	13	21,7	17	28,8
Total	149	248,3	144	240	152	253,3

According to the results of this table we can see that the employee spends too much time to make a list of debtors in an average of 49.3 % of the total time. They also spend surplus time to fulfill their personal needs, on average 39.6%. If they are given to reduce the time spent on extra, not related to the work of things, while the efficiency of the company and the quality of service will increase dramatically.

Table 4.

My suggestion to reduce the time to perform other cases:

Other cases	Day 1	
	min	%
140 min		
Names	min	%
Adding debtors to the list of debts	15	25
Total		
Prepare letters to debtors	15	25
Convert letters	15	25
Send letters to debtors	15	25
Short outage time	10	16,7
Talking	5	8,3
Fulfill their personal affairs	10	16,7
Execution of an order	10	16,7
Total	95	158,3

In this table, I offer my suggestions on the account of how to reduce the time to do other things. If the employee spends an average 30 minutes to make the list of debtors, then this time can be cut exactly in half, i.e. spend on it for about 15 minutes through a gradual and daily execution. Also on preparing letters to debtors they need an average 19 minutes, this time can be reduced by 4 minutes by delegating responsibilities to each other. On converting letters employee spent an average 18 minutes of three days, but I suggest to reduce this time to 3 minutes, spending about 15 minutes. Employee spends too much time talking about abstract topics, on average about 16 minutes, although this time would be better spent on



calls for work and it should be about 10 minutes. To fulfill their personal affairs spent about 24 minutes. This time, I propose to reduce by 14 minutes and spend about 10 minutes on only the most essential questions. As a result, if a whole to perform other cases on average spent 148 minutes, if you follow my suggestions, this time can be shortened by 53 minutes. Thus, this extra time can be used for more productive work in the enterprise.

Whether you are a salaried employee, self-employed, or a big-shot manager, more time will allow you to focus on the most important tasks. Being prepared, organized, and disciplined will give you the time necessary to become more productive, which will ultimately lead to more money.

#### **REFERENCES:**

4. Frank Rijmen, Carolyn MacCann, Richard Roberts (2009) <The assessment of time management in middle-school students >
5. [www.uztelecom.uz](http://www.uztelecom.uz)
6. [www.google.com](http://www.google.com)
7. Annual reports from Uzbektelecom Joint-Stock company.

#### **THE CALCULATION TAX ON INDIVIDUALS' INCOME AND SETTING SMS SERVICES**

***D.T. Khasanova, N.Yo.Barnoyeva***

*Summary. , In this article has shown the idea of creating the program used for giving information about tax-counting as an SMS.\* This project affects positively to our country's economics and tax system, moreover it develops population's knowledge and skills about modern technologies.*

**Key words:** *tax system, mobile banking, M-Banking, SMS-Banking, Click, SMS-To'lov, tax on individuals' income, MQS (minimal quantity of salary).*

The 21st century is the age of computer and information technologies, so it requires us using info-communication technologies (ICT) in each sphere. There is no sphere that doesn't use ICT. Nowadays it is getting harder to find the person who doesn't use computer technologies just for creating, saving or editing information. In education, training, sport, commerce and in other fields of our life people use modern technologies as: computer, fax, internet, telephone and etc. I can show mobile connection as the most popular type of modern technologies. Now there are a lot of mobile connection companies (Beeline, UMS, UzMobile, Ucell, Perfectum Mobile and etc.) in our Republic and they owe their customers. Millions of people use the services of the stated companies. These companies offer to customers not only connecting services, they also supply them with different entertaining and economic services. Today mobile connection is considered as the system of sending information. With the help of mobile connection we can search, download and upload information at any time on the internet. Moreover mobile connection is considered as the most comfortable and cheapest way of servicing for banks. Paying systems as SMS-Banking, M-Banking, Click and SMS-To'lov have been created by banks and used on that purpose, also they are examples for mobile banking systems.

Mobile banking – is the performing of finance related functions on a mobile device like a smartphone or tablet. With the use of a mobile device, the user can perform mobile banking via call, text, website or application.

Using the services of the mobile banking systems customers can carry out different payments (for mobile communication, Internet service providers, utilities, taxes and transfer payments), receive information about their money

and safe-keeping them. Mobile banking systems have their advantages. They are stated below:

- It utilizes the mobile connectivity of telecom operators and therefore does not require an internet connection.
- With mobile banking, users of mobile phones can perform several financial functions conveniently and securely from their mobile.
- Mobile banking is available round the clock 24/7/365, it is easy and convenient an ideal choice for accessing financial services for most mobile phone owners in the rural areas.
- Mobile banking is said to be even more secure than online/internet banking.

It just requires the customer to have mobile phone or computer connected to the internet (for M-Banking) and any SMS-receiving mobile phone (for SMS-To'lov and Click).

The project that I want to carry out helps to widen the means of banking services.

As we know, when a person is engaged in any work, he/she is, of course, interested in such things as: the salary, insurance and tax payments. Information about the salary is given to the person as a contract between administration and individual. In case, some incidents happen, insurance payments are done under compulsion. But program that gives information to the people about tax-counting (exactly tax on individuals' income ) system hasn't been made yet.

So I am going to give the idea of creating the program used for giving information about tax-counting as an SMS.\*

For carrying out this program we should add section called "About tax on individuals' income" to the line of services. When this section is chosen the person is asked about working on fundamental or substitution basis (tax

on individuals income is gathered in different tax-rates from fundamental and substitution workers). After this, customer is asked to enter the quantity of the salary. After entering the information, bank sends SMS including information about tax-rates and tax-counting methods. SMS sent to customers must include following information:

- The quantity of the salary : 1 027 000 UZS
- Minimal quantity of salary (MQS): 118 400 UZS
- 1-scale: (0-1 equal to MQS):  $118\,400 * 0\% = 0$  UZS
- 2-scale (1-5 times equal to MQS):  $(5 * 118\,400 - 118\,400) * 8.5\% = 40\,256$  UZS
- 3-scale (5-10 times equal to MQS):  $(1\,027\,000 - 5 * 118\,400) * 17\% = 73\,950$  UZS
- Sum total:  $114\,206 (0 + 40\,256 + 73\,950)$  UZS
- Accumulating pension deduction:  $1\,027\,000 * 6.5\% = 66\,755$  UZS
- Tax on income paid to budget:  $103\,936 (114\,206 - 10\,270)$  UZS
- Pension fund:  $1\,027\,000 * 1\% = 10\,270$  UZS

What will we achieve carrying out this project?

- The principle of transparency in tax system will be available to be seen in practical life;
- Confidence among state- factories, organizations, other establishments and manual workers will become stronger;
- It prevents from abusing factories', organizations' and other establishments' leaders' positions;
- Manual workers' knowledge on tax system will grow;
- Because of a great number of workers, the interest to the mobile services will increase;
- There are a lot of people in our Republic, who are interested in this theme and they address about it to accountant. If the project is

carried out, time of workers and accountants will be saved at the expense of certain amount of money (for example 0,3\$/SMS).

What does it require to carry out this project?

As our country has formed sufficient infrastructure for making and developing mobile banking system and operated it in practical life, it will not require our country much energy and money to carry out the project, moreover banks will have chance to earn extra income. To set this service for customers banks have to use the information of the State Tax Committee (STC) and change tax-rates at scheduled time.

In conclusion, this project affects positively to our country's economics and tax system, moreover it develops population's knowledge and skills about modern technologies.

## **DO WE USE ICT IN EDUCATION EFFECTIVELY?**

*S.Sharapov, D.Karimova*

***Summary.** The article reveals the questions of effectiveness of information-communication technologies in the educational process of Uzbekistan educational establishments.*

***Keywords:** new educational technologies, ICT in education, effectiveness of education technologies.*

We live in the 21<sup>st</sup> century and ICT reaches into every branch of human and non-human information exchange. By the term "ICT" we understand information and communication technologies. ICT tremendously developed lately. The 20<sup>th</sup> century brought us the dawn of the digital information age and unprecedented changes in information technology. There is no indication that this rapid rate of change will be slowing – it may be even increasing.

In the Republic of Uzbekistan in order not to fall abreast of developed countries several steps were taken. These steps are allowed us to increase the level of computer literacy and access to the new computer technologies to the wide public, especially to the youth. Nowadays computers are accessible almost to everyone. It is the fact that young person has access to computers in his/her school, lyceum or college and university. In addition, many libraries offer free access to the internet from computers inside them. Adults have access to the computer in their work and there a lot of computer and internet clubs in our Republic. Therefore, it can be noted everyone has possibility to use computers. Therefore, access to ICT in education can help individuals compete in a global economy by creating a skilled workforce and facilitating social mobility.

This fact has impact in improving computer literacy upon quality. At the same time users should effectively use computers, but not only for printing text and playing games. As our President I. Karimov said the times of using of the computer as typewriter has gone. We should make effective use of all its possibilities.

The idea that computers could tremendously improve the quality of education for students is commonly accepted. However, there are two opposite opinions about impact of computers in education. Some people argue that computers definitely increase the quality of teaching, no matter in which way computers are used. Others have completely opposite opinion and believe that computers distract students much and only learning without them could be effective. Of course, the true is somewhere between these opinions.

The impact of ICT use on learning outcomes is unclear, and is open to much debate. The main cause of this, widely accepted, standard methodologies and indicators to assess impact of ICT in education do not exist. Without assessing impact of ICT on learning, using it is just working for show. Because of this fact, there are conflict about use of ICT in education.

ICT in education could be used for following purposes:

- Visual aids
- Audio aids
- Learning through games
- Easy-to-search database
- Wide variety of learning materials
- Simulations of different processes
- Dynamic assessment
- Distance learning
- Personalized learning
- Increasing motivation to learn
- Economy of time for time-consuming activities
- Facilitating and improving the training of teachers

ICT are mainly used as visual aids in Uzbekistan. Visual aids are presentations, some schemes, source codes that are demonstrated using computer. It means that using ICT in education process in Uzbekistan in most cases is just showing something by means of computer presentations.

But it must be noted that it is true in most cases, but not always. For example, in TUIT Foreign languages and Physics department make use of the most possibilities of computers. For example, English language department resources in distance learning portal [etuit.uz](http://etuit.uz) provide additional materials too for learners. During lessons of English we do listening by means of computer to improve our skills. Cinema club was organised to demonstrate cinemas in English. Physics department provided students with access to the system of distance learning [estudy.uz](http://estudy.uz), which is available for us 24 hours a day, 7 days in a week. In addition, Physics department teach us to simulate physic process in computer and using software such as MathCAD to accomplish complex calculations. This list of effective using ICT in education by TUIT departments could be continued. However, nowadays the main task is to introduce their knowledge and experience

to other teachers. I suggest showing teachers, who are sent to advance their skills to TUIT, to attend lessons of English language and Physics departments to study practical using of ICT in education.

Audio aids are special written for educational purposes audio materials. Audio aids give experience of hearing English conversations in lessons of English.

There are special games intended for educational purposes. Those games give the student opportunity to acquire knowledge during the game process.

Student has a choice of learning materials to study when he/she uses ICT. It also gives a chance to personalize learning process according to his/her needs.

One of the important opportunities given by the ICT is dynamic assessment. During learning process warm up questions can be chosen according to the performance of the student. It gives educators opportunity to keep their students motivated. Also during mid-term exam, individual tests could be generated using ICT. It prevents occurrence of cheating and motivates lazy students to study in order to receive at least passing score.

Using ICT in education gives such opportunities. However, if teachers and students cannot make good use of the ICT tools, the money and time spent on the ICT is going to be a waste. In many cases, teachers and students do not know all possibilities, which are given by computers to improve learning process.

Sometimes much study hours is wasted to set up ICT equipment for first time. In such cases, using traditional ways of learning are preferable. Otherwise, ICT equipment should be prepared in advance in order not to waste study hours for them. Also all teachers should be aware of how to contact to IT department in case of unforeseeable falling out of computers. Consequently, IT department should be instructed to help teachers immediately after receiving request.

I suggest deliberate use of ICT in education. Every teacher should consider all pros and cons before making decision of using ICT. It means that teachers should not be forced to use ICT by administration in every aspect of their teaching. Otherwise, teachers will use ICT in education just for show.



I am also suggest to research effectiveness of different uses of ICT in education and according to the research outcomes give recommendations and make them available to all teachers in the Republic of Uzbekistan.

These steps could help to improve the education level of our people and consequently makes easier to build great future of the Republic of Uzbekistan.

### **REFERENCES:**

1. "Simulations of different processes" (article from Today's Technology)
2. "Dynamic assessment" Ph. Forrel, D. Mackduke, 2012.
3. "Increasing motivation to learn" Unice Harito (Methods for U2), 2013.

### **SMART HOME**

*T.N. Sharafutdinov, D.Kh. Kadirbekova*

*Summary.* Article is devoted to modern technologies that will make your house more convenient and safe; moreover your life will become more interesting and fascinating.

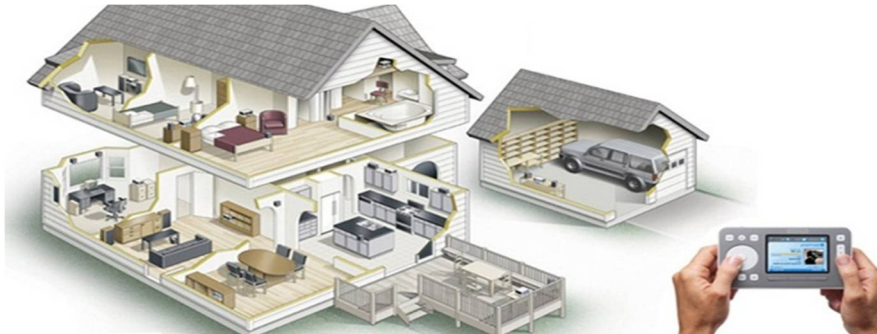
*Key words:* Modern technologies, security, distance control, management.

Information and Communication Technologies-the sum of technologies that allow to search, transmit, store, handle information. Nowadays, the sphere of ICT is developing very fast all over the world. The Government of Uzbekistan pays big attention to this sphere and realize many projects in ICT field.

My todays article is about very interesting project, that is very popular not only in many European countries, but in Uzbekistan too-Smart Home. Why I chose exactly this theme? Answer is very simple. During my trip to China I have visited Huawei company's Exhibition hall, where specialists explained us all positive sides of this system. First and foremost is that Smart Home doesn't influence on

people's health. Secondly, Smart Home saves your time and money. Last, but not least important is that it is not so expensive as many years ago and you'll return all invested money in a short period of time.

**Figure 1.**



Smart Home-it is the sum of technologies that allows people to link different home conveniences, provide cooperation and distance control with owner.

There are always different kinds of equipment in every modern flat or house, that can be divided in 6 big categories:

- Lightning
- Security
- Climate control
- Entertainments
- Communication(telephony, Internet, alerting)
- Other engineering systems(water supply, gas supply, heat supply, water carriage, irrigation)

First 4 categories of equipment are the most enabled to Smart Home.

**Figure 2.Lightning**



The work of all devices depend on reliability of power supply. Smart Home controls and allocates demand of whole circuit. It allows to prolong service life period and to save costs on power supply. System will turn off all devices that are not temporarily used. There are two types of lightning control systems:

- ❖ Local(control in a particular room)
- ❖ Global(control in the whole house)

**Figure 3.Security**



With Smart Home you can control the work of guard equipment with the help of distance console, cell phone or notebook, connected to the Internet. Guard system provides control access to your home. Just give magnetic card to each member of the family, to close friends, to gardener...and it will be additional electronic key to all functions of your home. Smart Home can recognize people and give access to that part of house that you want.

**Figure 4.Climate control**



Thanks to Smart Home you can create your own micro-climate in each room. You must only tune necessary temperature, humidity. The duty of climate equipment will be controlled automatically, switching from day mode to night mode.

Your Home will control next parameters:

- air leak
- air temperature
- conditioning
- moisture control



Smart Homes equipment gives these systems many new possibilities, such as like:

- Interaction
- Distance control and management
- Graphic interface
- Visualization of events

### Interaction

Interactability between systems makes possible the coordination-conformal reaction of one systems on events, that happen in another systems. For example, disconnection of ventilation during fire alarms action. To make such coordination equipment must have facility for further integration.

**Figure 4.Distance control and management**

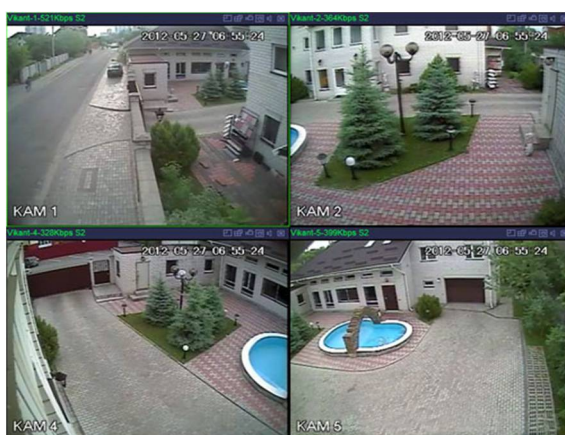


In traditional houses, we must to stay near equipment to control it. In Smart Home it is not so necessary. You can control the equipment from every place that is comfortable for you. You can also receive any information about duty of this equipment.

Moreover, you don't have to be at home to control the action of the equipment. You can receive information by cell phone, by SMS or by Internet. Control can be organized by these chains too. It is very comfortable for people who have both a flat and a country house, because such opportunity makes them calm and allows to avoid possible problems, connected with a long absence.

Just imagine that you are flying away and by the way to the airport you remember that forgot to turn off heat supply. Thanks to Smart Home you can be sure that everything in your house is under control.

**Figure 5. Visualization of events.**



When happens disturbing event or any problems in equipment's action at home, very important to get accurate information about it. But information is not always understandable to the owner. For example, you hear alarm, but you

don't know what is happening. You just turn on your smartphone and data from all cameras appears on its screen. If you see burglar, that is trying to enter your home, you can call the police.

### **Graphic interface**

Producers of equipment for homes try to make their technique more comfortable and full of different facilities. And as a result control panel begin to look like a big board with a huge number of different understandable buttons, though many of them will be necessary only once; moreover only specialist can use them. It will be very comfortable to have only few important buttons to control all equipment at home, don't you think so? That's why producers create special sensor panels and consoles, because we can draw any necessary button on their surface.

If console has reverse connection, you can also get information about date, time, day of week, temperature and work parameter of equipment.

### **Ten positive sides of Smart Home:**

- 1) Application of Smart Home will save your time, that you waste on turning on and off an electricity and etc.
- 2) New view on entertainments. Access to multimedia from any room.
- 3) Free baby-sitter. You are calm for children's safety.
- 4) You observe what happens at home wherever you are.
- 5) Very effective guard. Security systems are always on one's guard.
- 6) You will save for about 40% on electric light and 30% on heating.
- 7) Your house is very fashionable and beautiful now.
- 8) Safety of your children. You can see what your children are watching from your own room.
- 9) Activate "Vacation" mode and house will take care about itself.
- 10) Invisible guard.



## INTERNET RESOURCES:

1. [www.Smarton.com.ua/smart\\_home/systema\\_ummniy\\_dom\\_intro](http://www.Smarton.com.ua/smart_home/systema_ummniy_dom_intro)
2. [www.Wikipedia.com](http://www.Wikipedia.com)
3. [www.ascentis.ru/smart/smtheory/39-smtheorycon](http://www.ascentis.ru/smart/smtheory/39-smtheorycon)

## THE ROLE OF BRAND MANAGEMENT AND CREATING THE BRAND MANAGEMENT FIRMS IN UZBEKISTAN

*Sh. Shukurlaeva, D. Gafurova, F. Musaeva*

*Summary.* The following article is dedicated to the concepts of brand, the importance of brand management and its strategies, building and maintaining a successful trademark, organizing brand management firms in Uzbekistan.

*Key words:* Brand valuation, brand identity, a target market, consumer loyalty.

There has never been so much talk about brand in the history of marketing. Companies give an extensive attention to their mark with the purpose of getting consumers' loyalty. Therefore, the role of brand management is noticeable in this sphere as well as Brand management organizations are contributing to declare the valuation and position of brand name. According to a stable way of them I offer to set up "BRAND MANAGEMENT FIRM" in Uzbekistan. Aside from I will indicate its task and features which can develop the commerce system in our Republic. .

Initially, I would like to emphasize that the word brand emerged from the Old Norse "brander" refers to "burning", in other words, to burn the mark onto their goods. In today's world, there is the wide range of concepts of understanding it; one of them is differentiating products' design, feature and factor from competing products. It is known that brand connects with, advertising and marketing as well as management. Basically, people are looking forward to a unique and special

qualities of brand in this case advertising is the best answer to present. Besides, offering label products to the market place is a response to illustrate. Building a utilized and successful brand (Apple, Nike) is not a short term process, whereas maintaining the brand identity, trust, recognition and also valuation is a time consuming procedure. This art is acted by brand management and involves both marketing and advertising.

The most valuable assets of the company are successful brand therefore that the process of keeping profitable brand is performed by brand management. Moreover there are some methods of brand management processes. Firstly, introducing and characterizing the core of brand value and position in the market as giving questions “What do we stand for?” Secondly, using and developing the booming ways of the target market tactics and strategies to keep the brand positioning. Lastly, controlling and monitoring the trade made procedures by listening to customers and shareholders at the same time proceeding to improve the quality of brand. For instance, Coca-Cola is the product which perhaps best exemplifies global marketing. The Coca-Cola trademark is recognized by 94 percent of the earth's population and Coca-Cola is the second most universally understood phrase after OK. However, there are considerable strengths which support Coca-Cola in this task namely: The trademark which is so widely known and part of the public imagination. Coca-Cola is continually building on its existing expertise in marketing and consumer understanding, and is supported by access to a wealth of financial and creative resources. Coca-Cola has an “action orientation”. Instead of waiting for change to happen it is at the leading edge, driving action forward.

In today's world and in some developed countries such as the USA, UK, business organizations as AKQA, Brandwise, AAM agencies already run their business with proprietorships that are aware of how important to keep a brand quality and identity. There are chief brand officers or managers whose job is to create a solid brand and monitor the brand performance, reputation and actions



compared to our country, designers are continuing to do this job. As far as I am concerned that it is a definite time to change and ongoing business by enlarging a special firm for “brand managers” which named “**THE BRAND MANAGEMENT FIRM**”. By developing and implementing trademarks the companies can hold records and get target audience besides meeting through social media and having long-standing relations between the company and customers are successful brand management strategies. I am apprised the feedbacks of brand management which are improving the companies’ profits and consumers’ loyalty. Contributing the overall experience from certain brands people can pay extra money the reasons why they regard highly these products. In this way brand management firms can help business organizations to hold their clients and customers. Furthermore there are noticeable features to keep continuously in touch with these enterprises. In the following descriptions I want to give some intentions for initiating mentioned corporation. For this to work, I divided the duties of the brand management firm into three categories.

1. Creating brand for the company.
2. Focusing on the strategy of developing the brand.
3. Controlling and monitoring the brands’ role and their position in the business environment.

This firm will capture new opportunities in brand management at the same time these opportunities are resulting from IT revolution. One of the purposes of the firm is to turn intangible brand assets into tangible financial resource. The initial job of the brand management firm is to create and design the perfect trademark for companies. Basically, the package of goods is very important because differentiating from competing products. The great brand creates a great brand loyalty. It is hard work to invent a new brand for each firms’ artifacts likewise present for consumers again and again. That’s why a strong brand can be a long-term process. Surely, it isn’t enough. Brands should always stay fresh and continuously present new appearances to the target audiences. I mean they should

be refreshed. Moreover, companies should change corporate identities not to be outdated. Even small company stays larger whereas unary brands becomes sparkler hence your business organization need Brand management firms in order to hold their achievements.

The next duty is to find a right direction not to lose the way. There are smorgasbord reasons why gigantic trade names lose their fortune. Trouble is from brand management itself as a result of capitulating a right way. Particularly, that situation can be emerged from frightening of taking risks and not innovating as well as not understanding the role of the trademark. These are the fallen punished stars such as Kodak, Sony which are defeated in the world business. I have every reason to believe that this brand management firm can support to run away from failing. It is undeniable that there are a lot of new national products in our motherland which need to develop their trademark as well as get into an international commerce. So in addition to pure brand effort it advises on production, logistics, and financial management, procurement, marketing, and also advertising. All these references need to be orchestrated together so as to capture its value. Thus the second demand to invent the Brand management firm in Uzbekistan.

Finally, we are living in a digital age day by day unusual innovations are thought up. BMF in Uzbekistan can help these inventions to distinguish each other besides prevent conflicts of similar brands. It controls the price of trade made and its position. In other words, BMF gathers all brands in one rank then compares to one another lastly monitors how they are moving on. With the help of an angry Tweet, a happy Facebook and certainly, with a parody video on YouTube public discussions can be observed. These online surveillance methods illustrates all online mentions referring to your brands as a consequence BMF can direct them.

To sum up, the breakthrough success of global names (Coke, Apple) is visible from their strong, vital brand management strategy. Thus BMF in Uzbekistan can

be the answer of operating the business and entering to worldwide trade for our Uzbek brands.

#### REFERENCES:

1. <http://www.forbes.com>, <http://econsultancy.com>
2. : <http://www.tradeforum.org/Is-There-a-Case-for-National-Branding>
3. International Trade Forum Magazine
4. <http://businesscasestudies.co.uk/coca-cola-great-britain/who-dares-wins-success-through-intelligent-risk/key-aspects-of-coca-colas-business>.
5. Leadership Digital Magazine

#### FIRST JOB

*A.R. Yuldashev, Sh.T. Ibragimova*

*Summary.* In the article it is included the stages of the job application process such as - how to fill a CV – which things should be written or avoided; basic tips on job interview and how to produce a good first impression on an employer. Also, there is given plenty of figures on job interviews.

*Keywords:* apply for a job, resume, first impression, candidate, recruitment, work experience, punctuality, C-level executive, professionalism.

*“Never lose a chance, it doesn’t come every day.*

**”George Bernard Shaw**

#### **Introduction**

It is widely known that majority of firms and business bodies in our country are being established and invested by the individuals from foreign countries or companies. We know them as joint ventures. These kind of companies require from a candidate to apply for a job on the world standards. For example, CV

(curriculum vitae), which is known also as Resume in USA and other parts of the world, is a document which brings most necessary overall information about a candidate to an employer. And currently most of developed and even developing countries have already been using this method in their companies. This situation involves using globally standardized rules in the process of hiring in Uzbekistan too.

### **The Main Part**

Resume is a document in what there should be given an overall description of a candidate who is applying for a job. This document usually includes a number of sections such as “Heading”, “Objective”, “Education” and others. “Heading” section is filled by indicating your full name, telephone or cellphone number and e-mail address and attach a photo of you if possible. Next section is “Objective” in what you ought to write briefly in what industry you really want to work or what interests you in relation with your liked profession and other statements. Then comes “Education”. Here you are required to state your degree (e.g. bachelor of arts, master of business administration), your major/minor and the name of institutions you graduated, also do not miss the years of study when started and finished. Academic awards, scholarships, scholastic achievement are generally included in “Honors” or “Activities and Honors” section. However, if you own more than one academic awards you may include them in “Education”, if not, then it is not recommended to present them, because it would be silly to list one honor under a plural heading of “Honors”. The following section “Work Experience” gives information on your previous workplaces and your position there. Also it will be known for an employer how many years you worked professionally in particular sphere. In this section you are welcomed to list any other experiences, skills, knowledge or abilities you acquired before. Moreover, you may divide this section into two sub-sections “related” and “other” experience sections. For each experience entry use these four basic elements: your job title (what), organization

name (who), location (where) as city and state (region), and term/dates (when) as month-month & year, or semester/season & year.

In today's highly developed world, it is very easy to find a job not only in your country but also throughout the globe if you fit the demands of a company. How? Here is the answer: With the help of the Internet we can simply download our resumes on the job finding web-sites, then you will be informed by your e-mail, which should be indicated in your resume, if you are eligible for a position. After that, a company will set the time of an interview for you and in accordance with your will employers choose the type of an interview whether it is held via the Internet (online) or in a face-to-face manner. However, until that process comes, you are highly required to have the most necessary qualities which a company wants to see in you.

First impression is an opinion you form when you meet someone or see something for the first time. First impression is such a powerful psychological condition where it directly influences on the memory of a person and stays there a long time, maybe hardly will be forgotten. However, first impression as an old saying goes "first impressions are often deceiving" can produce fake information about a person when you test someone. And it seems true when we look at the other side of the coin. We may sometimes picture a situation in a wrong way. People never look always good and the same. After talking a few times with your talking-partner you will begin to realize that he or she is not the person as you saw at first meeting. Nevertheless, in a job interview you are questioned only once. The next meetings may not happen if you don't make the first impressions on an employer positively. Statistics shows that, 33% of the surveyed bosses, who interviewed the candidates, knew in the beginning part, to be more exact, within the first 90 seconds of an interview whether they would hire or not the candidate. That's why, get ready for the interview and do your best in order to make nice first impressions.

Here are some tips for you on how to make good first impressions: [taken from this site: [yourofficecoach.com](http://yourofficecoach.com)]

1. **Smile!** Smiling sends a signal that you are open and approachable.

2. **Polish your image.** People are positively impressed by attractiveness and tidiness.

3. **Dress the part.** Your clothes say a lot about your judgement, so be sure that you are attired appropriately for the occasion.

4. **Project confidence.** To make a good impression, you need to appear self-assured.

5. **Look for connections.** People tend to like those with whom they have something in common, so try to find “links” to the other person.

6. **Show a sense of humor.** This doesn't mean cracking jokes, but it does mean smiling, laughing, and avoiding a deadly serious demeanor.

7. **Be yourself!** Making a good impression does not mean acting like a different person. Most people can easily spot a fake. So don't try to be something you're not, just be the best “you” that you can be!

You've successfully turned in your resume and completed a job application. Finally, you get a call for the interview-congratulations! However, if you don't ace your interview, it's unlikely you'll get hired for the position. There are 10 tips that will help you have a successful first ever job interview.

**Tip 1: Research**

**Tip 2: Practice**

**Tip 3: Appropriate Dress**

**Tip 4: Punctuality**

**Tip 5: First Impression**

**Tip 6: Presentation**

**Tip 7: Contacts**

### **Tip 8: Body Language**

### **Tip 9: Your Exit**

### **Tip 10: Follow-Up**

After the interview, immediately send the interviewer a handwritten thank you note. You may also choose to send a thank you email in addition to the handwritten note. This will help the interviewer recall your name and face.

Interviewing well is critical to getting a job. With the right preparation and practice, your first interview is sure to be a success. For more tips and advice on answering common (and more challenging) interview questions, check out Live Career's [Interview Tips and Advice](#) and [Interview Videos](#) today!

As a job seeker we may not understand fully employers will – what type of candidates they really need. Before an interview just put yourself to the place of interviewer and imagine you should hire a perfect candidate who suits best to the vacancy. What features would you pay attention to during interview or how would you choose the best candidate among others. Successful managers know that recruiting the right people to work for you will make or break your business, while poor hiring decisions can cost three and five times the person's annual salary! Mistakes are expensive in terms of the effort and money that is paid and lost, the time that is wasted that could have been invested with a better candidate, as well as the demoralization that occurs in a company with high employee turnover. So, try to be the right choice, not the wrong one.

One of the interview strategies widely used by companies is called the SWAN formula, named after John Swan, an executive recruiter. These letters also stand for *Smart*, *Work shard*, *Ambitious*, and *Nice*. This may sound unrealistic, but it's a good, practical prescription for hiring.

**Be ready always unexpected questions such as: what are your advantages; what is your main weakness; or how will you advance this company and so on. For these tricking questions you should answer properly**

**and in a way that works for your advantages. For example, in a job interview with a high probability you may be asked following question:**

**Question: Why are you the best person for this position?**

*Don't be afraid to stroke your own ego here. Don't say anything self-deprecating. Focus on this position in this company. Why shouldn't they hire someone else?*

A: I'm the best for this position here because I've been following this company's progress for years. Any time there was a new release or you were mentioned in the news, I was all over it. I already know the infrastructure and history of this place like the back of my hand. Not only was my latest project focused specifically on the new language developed here, but I've been implementing it in my own personal work since its release six months ago. I can see being here for a very long time if the company continues in the direction it's going.

If you're going on an interview soon, listen up. According to a new [CareerBuilder survey](#) there are a few pointers to keep in mind. Yes, we know so much has been written and talked about that learning something new on the topic is considered golden!

Their survey conducted in July 2014 included 5,518 job seekers and 2,775 hiring managers and highlighted a few numbers to reinforce some of the essentials.

One of the main points included having the mindset to go on an interview prepared to speak to top executives. You never know who you'll pass in the hallway or who will be available to chat for an impromptu meeting.

Per the survey, the numbers tell all: 38 percent of employers indicated that candidates are actually required to interview with a C-level executive at their company. Hello, COO! Or CEO or CFO, you get the idea.

As for another big reveal from the survey? Well, we have to admit this wasn't really news to us. Ensure your digital footprint is clean.



Here's why: approximately 48 percent of employers lean on Google or other search engines to dig up some digital dirt. Facebook isn't off limits either since 44 percent search that site and 27 percent of recruiters and/or hiring managers search a Twitter feed. Others take a look at Yelp and Glassdoor reviews.

As for the third tip from the survey? The ideal fit. Sure, we may already know this but reinforcement is sometimes a very good thing. Companies look for candidates who fit in well with their culture and organization and in that spirit, so should the job seeker. The survey showed 23 percent of employers dismiss a candidate due to a poor fit; 18 percent eliminate candidates with unrealistically high salary expectations.

The number one question most likely to be asked is: "Tell me about you". The number one most common mistake at a job interview is: failing to ask for the job.

### **25 Facts about Resumes, Interviews & Social Recruitment**

1. In the US, there are 3 million unfilled jobs and 11.8 million unemployed workers.
2. The average time spent by recruiters looking at a resume: 5 to 7 seconds.
3. 76% of resumes are discarded for an unprofessional email address.
4. 88% rejection rate when you include a photo on your resume.
5. In 2000, 22% of resumes were submitted via email or posted on the web. In 2014, over 90% of resumes are now posted online or sent via email.
6. Only 35% of applicants are actually qualified for the jobs they apply to.
7. Applicant Tracking Software, the robots that read your resume, are able to quickly eliminate 75% of the applicants.
8. 427,000 resumes are posted each week on Monster.
9. 68% of employers will find you on Facebook.
10. There are 15 million brands and organizations on Facebook.
11. 18,400,000 applicants found their job on Facebook.
12. 10,200,000 applicants found their job on LinkedIn.

13. 89% of recruiters have hired someone through LinkedIn.
14. 8,000,000 applicants found their job on Twitter.
15. 93% of recruiters are likely to look at a candidate's social media profile.
16. 43% of job seekers have used their mobile device to engage in a job search with 7% of all job seekers conducting their job search online while in the restroom.
17. While the average length of an interview is 40 minutes, 33% of 2000 surveyed bosses indicated they know within the first 90 seconds if they will hire that candidate.

How can they make such a decision in less than 2 minutes? In the same survey, respondents noted the following nonverbal mistakes as some of the reasons why you may be eliminated during the interview:

- 70% indicated applicants were too fashionable or trendy.
- 67% indicated failure to make eye contact.
- 55% the way the candidate dressed, acted or walked through the door.
- 47% of clients who had little or no knowledge of the company.
- 38% was the quality of voice and overall confidence; and lack of a smile.
- 33% for bad posture.
- 26% because the handshake was too weak.
- 21% for crossing their arms over their chest during the interview.

(The figures stated above are courtesy of JobVite.com, TheUndercoverRecruiter.com and Work4labs.com.)

### **Conclusion**

First job, which serves as an initial step in your career, is one of the vital aspects of your life. How successful you start your professional career depends on how you prepare yourself for a job. And most importantly, prior to entering a job you would need to have particular qualities in both your intelligent world and psychological behavior. Of course, nothing in the world comes spontaneously. In order to attain something in the life you are demanded a lot of priorities which

others do not own. Learning in a step-by-step way and enriching your professional experience by working make you stronger and more eligible for any related vacant workplace.

Above almost all the stages of applying for a job are discussed and proved by some examples, statistics. I guess after reading this article your approaches to resume and job interview will change and I would greatly be happy if you put into action and use these tips given above in your own life.

So, are you ready for your first job interview? Are you being afraid of the interview? Do not worry! Calm down and learn the pointers and make use of them. Good luck!

#### **INTERNET RESOURCES:**

1. Richard Fein. First job. – NY, 1992.
2. [www.career.vt.edu](http://www.career.vt.edu)
3. [www.careeronestop.org](http://www.careeronestop.org)
4. [www.yourofficecoach.com](http://www.yourofficecoach.com)

#### **INVOLVING THE FOREIGN INVESTMENTS INTO THE ECONOMY OF UZBEKISTAN AND AVOIDANCE OF THE PROBLEMS IN INVESTING**

***O.K. Yusupov, N.Y. Barnoyeva***

***Summary:*** in this article some analyses of the Republic of Uzbekistan in sphere of investment in accordance with the years of 2012 – 2014 are given and the solutions to the problems in investing are found.

***Key words:*** investment, effort, foreign investment, socio-economic profit, assets, interest, privileges, procedure, indexes, enterprises, investors.

While passing to the market economy gradually, Uzbekistan has kept its attention to the development of economy which was much more out of focus before the independence. After having reached complete freedom in a economic

action and controlling over our legislation system, our country started being recognized by other countries all over the world. The republic of Uzbekistan aimed to make every sphere helping to improve the lifestyle of population progressive. For fulfilment of this procedure, it formed favorable investment environment, broad system of legal guarantees and privileges for the foreign investors, developed integral system of measures on encouragement of activity of enterprises with the foreign investments. Because foreign investments bring socio-economic profits to our country. If we define the concept of investment,

Investment is the commitment of money or capital to purchase financial instruments or other assets in order to get beneficial returns in the form of interest, income, or appreciation of the value of the instrument. Investment is related to saving or deferring consumption.

Nowadays involving foreign investments is one of the most important procedures our country put forward. According to the statistic data in 2014, the volume of foreign investments into the economy increased 10.9 percent and reached 14.6 billion US dollars. In this respect, more than 21.2 percent of all capital investments granted accounted for foreign investments and loans, three fourths of which were direct foreign investments. In excess of 73% of all investments were assigned for production construction. Likewise, in the sphere of communication and information technologies many efforts could be carried out in order to attract foreign investments. On the basis of the resolution, “About Attraction of Foreign Investments in the Sphere Development of Information Systems and Software Products”, accepted by the president of the republic of Uzbekistan, our country made an agreement with the LG CNS Company of Korea. In spite of these efforts, rightly and efficiently forming this field in our country has some difficulties resulting from inconsistency between the enterprise environment or the conditions for it and the interest of foreign investors. Down we can see the picture in which the indexes of transaction which are observed in investments in

accordance with four countries, messaged by the United Nations Conference on Trade and Development (UNCTAD).

***Country comparison for the protection of investors.***

1-picture

Cases	Uzbekistan	Eastern Europe and Central Asia	United States	Germany
Index of transaction transparency	4.0	7.0	7.0	5.0
Index of manager's responsibility	1.0	5.0	9.0	5.0
Index of shareholders power	6.0	9.0	5.0	
Index of investor protection	4.0	5.9	8.3	5.0

According to the details in the picture above, index of transaction transparency in Uzbekistan is 4.0 which is much less than in the other places. It means that the greater the index, the more transparent the Conditions of Transactions. The two equal higher indexes in Eastern Europe and Central Asia and United States where they both are 7.0 indicating that they are dominant among the others. And in the case of manager's responsibility, our country has a lower amount, also, 1.0 than the others emphasizing that the managers of firms, factories or economic organizations of Uzbekistan are irresponsible for their jobs, transactions or duties. The highest pointer is in United States and amounts to 9.0. In Eastern Europe and Central Asia and Germany, the pointers are equal and add up to 5.0. And in the case of shareholders power, the pointer is 6.0 which is better than United States and Germany. It implies that investors can take legal actions freely under control of the legislation of the Republic of Uzbekistan.

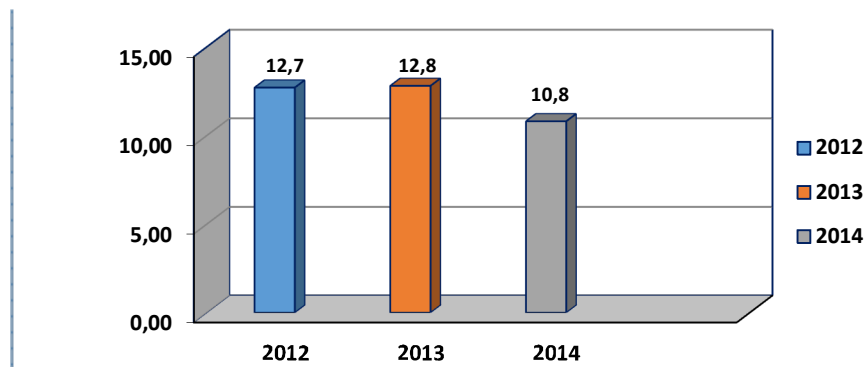
The accepting documents due to the sphere:

- ✓ Creating the maximal-leveled comfortable investment environment for the investors investing direct investments which helps develop high technological production
- ✓ Encouraging the involvement of foreign investments for fulfilling the projects in accordance with modernization of production and technic and technologic renew
- ✓ Avoiding some bureaucratic barriers in working with foreign investors
- ✓ Restricting participation of government and control offices in activities of the factories which are in cooperation with foreign investors

And nowadays the foreign investors are offering such forms of investing. According to those:

- Establishing joint factories, firms in cooperation.
- founding factories on the basis of 100% foreign investment.
- Purchasing some piece or a half of the stock packages of the privatized factories.

Down we can see the growth pointers in the years of 2012-2014.



### ***The growth pointers of the three years investments***

According to the diagram, in 2013 the growth pointer increased by 0.1 percent in comparison with the previous year when was 12.7 and amounted to 12.8 percent. In 2014, via versa, this pointer decreased by 1.9 percent and was 10.8 percent.

Likewise, one factor of the reasons why the number of investors increases year after year is that there are a lot of privileges for foreign investors in our country.

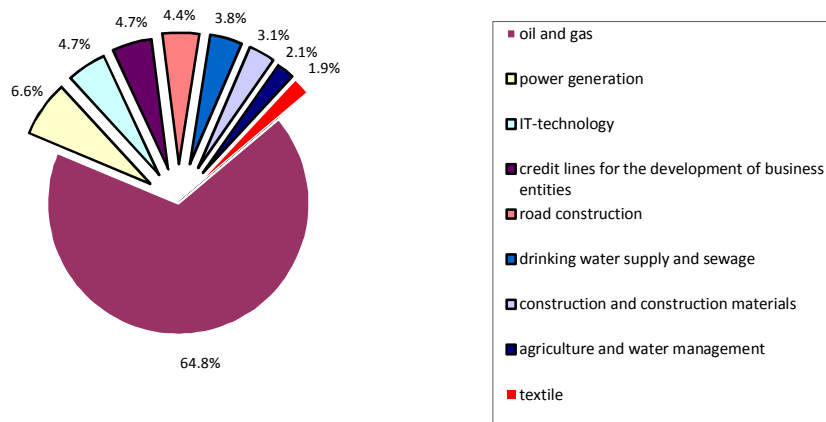
- from 3 to 10 million Euro - for 7 years;

- from 10 to 30 million Euro - for 10 years. For the following 5 years rates of profit tax of legal entities and unified tax payment for micro firms and small enterprises are fixed at the level of 50 percent of current rates;

- more than 30 million Euros - for 15 years. For the following 10 years rates of profit tax of legal entities and unified tax payment for micro firms and small enterprises are fixed at the level of 50 percent of current rates.

Summing up annual results for 9 month 2014, the implementation of the State Investment Program in the part of attraction of foreign investments reached 102,7% over the annual forecast which means .

The Spheres into which the main investments granted



Above in the chart we can see that the main investments in accordance with 9 monthly statistics data in 2014 were attracted to nine fields such as oil and gas, power generation, IT-technology and so on. The sphere of IT consisted of 4.7 percent of all granted investments.

One of the problems which are necessary to solve is that:

The regulatory environment and the legal conditions remain changeable and the guarantees offered so as to benefit from these investments are ambiguous and hesitant to invest.

To settle the problem above shown, changeability in regulating system should be stopped and the most significant attention should be oriented to reaching decisiveness of investors. For this, investment tariffs should be processed and the interests which investors take should be determined learning each investor. And in our country tax system determined for investors should be changed because of that tax paid by citizens of Uzbekistan and foreigners is the same. The tax paid by investors should be reduced considering the category of investment granted.

Next problem is that because of the shortage of the revenue of the local population, the enterprises launched by the foreign investors last in a short time, To find the solution to this problem, our republic primarily should keep attention to increase the number of the foreign investors who build their enterprises here and export many of their products to foreign countries and set economic links with other countries around the world. With the help of this, the probability of facing bankrupt in a short time may decrease.

And prospective investment proposals for attraction of direct foreign Investment are as follows:

1 684,67 mlrd. on Complex on geology, energy, chemical, petrochemical and metallurgical industries and 41.00 mlrd. on Complex on public utilities, transportation, capital construction and building industry and 327.10 mlrd on Complex on agriculture and water resources, agricultural products and consumer goods and 185.70 mlrd. on Complex on culture, education, health and social protection.

To summarize, I can say that the Republic of Uzbekistan is on the go to improve the investment and has been carrying out swift efforts on it. And current position of the republic is much better than before. And in the future the role of investments will be of much more significant than now.



## **CHALLENGES TO BRAND BUILDING OF FAST MOVING CONSUMER GOODS (FMCGs) IN UZBEKISTAN**

*D.U. Toyirov, J.N. Sayfiyev, G.S. Saidaliyeva*

*Summary.* This article about to improve challenges to brand building of fast moving consumer goods (fmcgs) in Uzbekistan

*Key words:* brand, branding, brand loyalty, brand equity, fmcg, customer perspective, financial perspective.

In today's competitive business environment, the scale of competition has increased significantly, what brings difficulties for companies to keep their positions and customers' loyalty in the market trade. Due to these causes, established strategies of competitive advantages cannot provide long-term safety for a company anymore. That is to say, that price leadership and qualitative products are not sufficient for a company to be ensuring products' future success.

According to Sinclair, customers do not recognize tangible assets of organization; generally they value the brands which are advanced for satisfying their perspective, needs and wants. The American Marketing Association (AMA) argued that in aggressive competition the brand is the most vital asset among the other tangible assets of a company.

Also, Davis determined that top companies (as Coca Cola, Nestle) are capitalizing mostly on their brands which help them to reach growth objectives faster than ever before. While, for maximizing financial returns a company has to maximize the power of its brand otherwise without strong brand a company cannot achieve exponential growth.

### **Evaluation of FMCG industry in Uzbekistan**

In the early of 1990's the gross national product (GNP) represented about 13 percent because of low qualitative domestic products that was provided to

population of Uzbekistan. The reason of low interest in local products is that FMCG (Fast Moving Consumer Goods) industry is not able to offer qualitative products because of poor food packaging and processing technology and great direct investment from overseas.

In particular, Jahn International of Denmark and Local Company of Uzbekistan – Tashkent Court made a beneficial agreement in opening a fruit juice company under the name Sun Juice. After those other giant companies as Nestle, Coca-Cola is invested in Uzbekistan food industry. Moreover, at the beginning of operation Nestle Company (Switzerland) invested \$30.000.000 in US dollar.

However, currently, the major international companies continue investing in Uzbekistan because of new governmental reforms for accelerating development of social and economic parts of the country that lead to develop the business environment for SMEs by opening manufactures. For example, Pepsi Co., opened its manufacture in 2011 by investing billion in FMCG, and also US&FCS (The United States & Foreign Commercial Service) determined that the packaging and processing sectors in terms of FMCGs is a “best bet” for direct investments .

Agriculture represents more than 40% of Uzbekistan GNP that is one of the greatest preferences in Uzbekistan for what the country encouraged in grain production in order to reduce the rate of dependence and encourage them by reducing tax rate and privileges in currency exchange. Nevertheless, the customer loyalty toward imported food products within well-designed packaging and excellent quality is higher than comparing with domestic companies products.

But, local companies are currently trying to seek capital and technology necessary to manufacture high grade food products and package all products in hygienic containers, ultimately to do packages suitable and attractive that might satisfy customers and be at the level as imported products.

### **Brand**

Initially, all managers have to know the core significance of brand and why it is needed in today’s aggressive business environment. In this point, the majority of

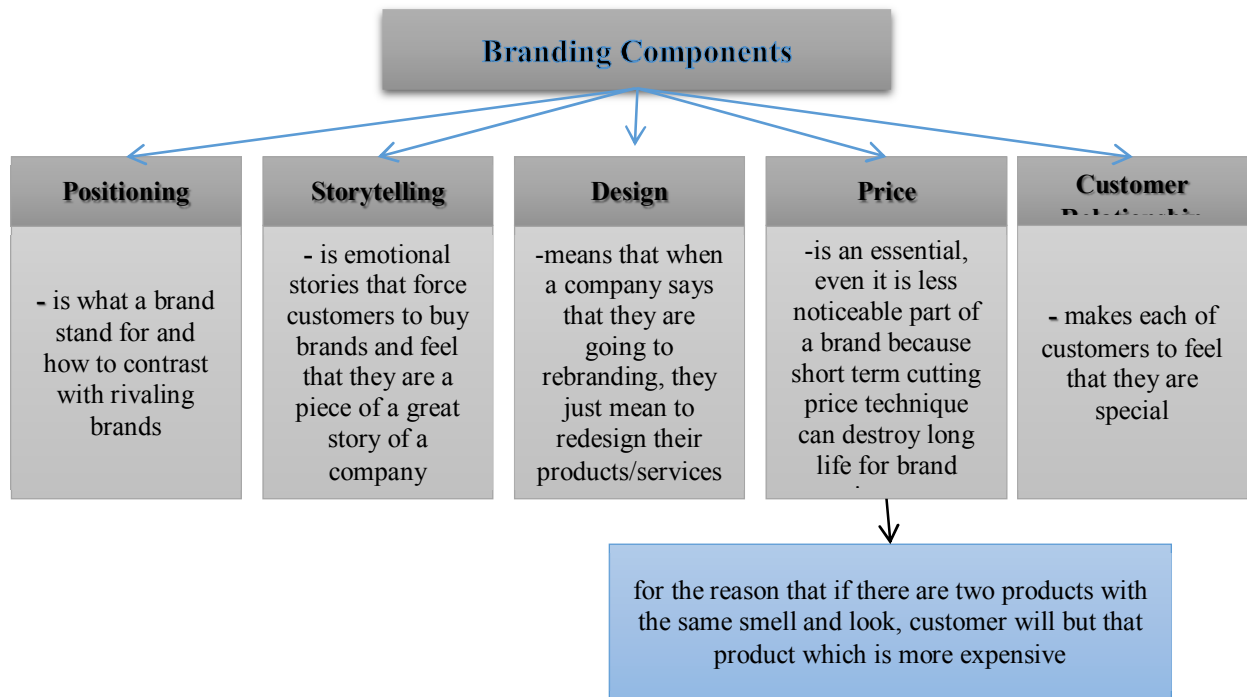
authors determined that brand has a long leading role in trading, which makes it the main asset and a value key factor of the company contrast to other tangible assets.

While, two brand types exist, **intrinsic** and **extrinsic**, there difference between them, intrinsic changes the products' performance, shape and physical capacity, in other words, it changes the product totally. Whilst, the second type extrinsic is not altering the core product, it just change packaging, price, logo and name which is mostly depend on brand image. Initially, any manager has to be aware of the core definition, advantages of branding, especial Asian companies, while the wide definition of the brand and its advantages and challenges on building it determined below accurately.

### **Branding**

Preferably, a company, big or small has had a powerful brand which held up by powerful branding. "Branding is the process of continues struggle between producers and customers to define that promise and meaning". Branding is the best way of operating in the long term return investment, moreover due to branding a company is able to keep its sustainable improvement and get competitive advantages.

Current market trade valued brand building and marketing strategy that become a key research for academic as well as for practical researchers. While, branding reveals five components, Figure 2.1. The power of great branding is an emotional tie between owner and clients. Branding brings arduous benefits for the company that held to be ensuring to future prospect of the product/services by reinforcing an excellent reputation, stimulating loyalty and guaranteeing quality.



*Figure 2.1. Source: Healey (2008:8)*

### **Brand VS Branding**

The differences between brand and branding are represented accordingly by Ahern and, in which they argued that brand is an image and logo but branding is a trademark and a set of series of activities that a company does to establish its brand. In other words, it is the things that a company creates, which includes: blogs, websites, marketing substance and all things are that establish company's branding. Nevertheless, both illustrates company's business and a story of a company and its' business that operating in the market trade. Moreover, brand and branding are the best method for launching company's authority and credibility.

### **Brand Loyalty**

A powerful brand identity helps to increase the awareness toward the brands which lead to customers to become loyal. While, loyalty means that customers purchase products from the same brand and do not think why they purchase same brand repeatedly. Hofmeyr and Rice (2000) claimed that customers might be called behavior loyalty and attitude loyalty. While, when customers buy a brand frequently without attachment, they called behavior loyalty but when they purchase

a brand with attachment and frequently, in this case, it is called attitudinally and behaviorally loyal.

A power of brand loyalty will be tested when new rival starts negotiating in the trade that is a reason to customers to switch to another brands, this situation may revealed the likeness of customers to switch to another brands when cost of product or features are changed . Nevertheless, the major top branded companies are keeping their leadership during the years (Coca Cola, Pepsi, DANONE, Nestle ...), the fact is that though there have been numerous changes in competitive activities as well as customer attitude, customers are valued these brand and respect what they offer and refuse competitors' overtures that increase their market share, the reason is that how much loyal customers have a brand so much its revenue increases.

### **Brand Equity**

Initially, the definition of brand equity is interpreted by Farquhar , that means "the value added". Beside, enormous authors determined definitions of the term of brand equity; in which brand equity was investigated from financial and customer-based brand equity. To illustrate differently, financial means perspective of the brand value to the company and customer- based means the brand value that comes of a marketing decision-making environment.

Simplify, brand equity is a collection of brand assets that linked to a brand that includes name and symbol that adds value to a company's customers or to company itself by products/services. Although, assets and liabilities typically divided into several categories: brand loyalty, brand association, brand awareness, perceived quality and other proprietary brand assets that includes channel relationship, trademarks and etc.

Brand equity offers value to customer by improving interpretation, satisfaction and confidence in the client decision, while it also offers value to the company by improving efficiency, marketing programs, brand loyalty and extensions, prices and profit margins, trade leverage and finally competitive

advantages. However, brand equity is the customers' willingness to continue to buy the brand or not, therefore the brand equity is firmly associated with loyalty . Brand loyalty is a foundation of brand equity which set up by various factors, especially the use experience.

While, strong brand equity evolves a “differential effect” greater comparing with “customer response” and “brand knowledge” that represents enhanced brand performance in terms of a customer perspective and a financial perspective of brand equity.

- **Customer Perspective**

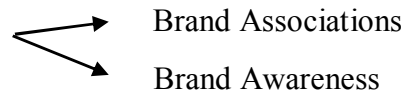
Aaker and Joachimsthaler characterize brand equity is like brand asset that bound to a brand's name and symbol, in which value added from products/services. Lassar et al claimed that brand equity formed into five measurements: 1) performance, 2) value, 3) social image, 4) trustworthiness and the fifth is commitment. Getting into consideration all these assets, Aaker claimed that these assets can be grouped into several measurements which lead to create value to customers as well as to the company due to adding value of brand equity.

- **Financial Perspective**

Brand equity is like “the incremental cash flows which accrue to branded products over and above the cash flows which would result from the sale of unbranded products” (Simon and Sullivan) . While, Kim revealed that financial perspective based on techniques that receives the brand equity value from the value of the company's other tangible or intangible assets that results company's brand equity estimated by obtaining company's future cash flows from brand-based returns.

Jobber contended that brand equity divided into two types those are also consist of two types in each:

1) Customer-based brand loyalty



Patents



Taking into consideration all the advantages and limitation of collecting data the researcher settled both types primary and secondary data collection. Because as mentioned above (in p.46), for getting a clear definition, to investigate the challenges to brand building and to illustrate the brand building strategies that helps to overcome the challenges that researcher use secondary data by using previous researchers of renowned authors

While, to investigate are the hypothesis right or not the researcher utilized the primary data by using quantitative, qualitative and descriptive research methods. Also, the research has done two questionnaires for resellers and customers to analyze the situation from both sides. While, as determined in Figure 3.2 (in p.49) the sampling method determined where the research used non-probability sampling technique and sampling size covered about 40 (resellers) and 150 (customers). Moreover, judgmental, snowball and random sampling are utilized by the research to make a survey.

Actually, electronically and delivered by hand are included to self-administrated questionnaire which are utilized in doing survey. For, making questionnaire, the suitable question type is structured questionnaire where due to dichotomous, multiple-choice, scaled and open questions investigation of clear answers will be easier. Besides, all types of closed questions are also utilized except the category type. For making a set of interview the best way is semi-structured interview, which is the combination of structured and unstructured interview methods. The advantages of it the research is able to give another question for getting a deep answer from respondents. Finally, for making data analysis both qualitative as well as quantitative data analysis used.

## REFERENCES:

1. Aaker, D. A. (1991) *Managing Brand Equity: Capitalizing on the value of a brand name* New York: The Free Press
2. Aaker, D. A. (1996) *Building Strong Brands* New York: The Free Press
3. Aaker, D.A. & Joachimsthaler, E. (2000) *Brand Leadership*, London: The Free Press
4. Adhikari, R. & Hiemenz, U (2000) *Achieving Financial Stability in Asia* OECD, Head of Publications Division, Public Affairs and Communication Directorate: France.

#### **INTERNET RESOURCES:**

1. <http://www.fmcg.ws/>
2. <http://www.ite-uzbekistan.uz/vis/worldfood/eng/index.php>

### **VI SECTION– PROFESSIONAL EDUCATION**

#### **FUTURE OF BOOKS: WILL BOOKS AND PHYSICAL LIBRARIES DISAPPEAR IN THE FUTURE?**

***Kh. Artikova, Kh.Umarkhajaeva***

***Summary.*** *The dominance of technology can be seen easily in our daily lives today. New types of innovations are coming up day by day. This is eventually changing the way we live. This research aims to find out if the tech has an impact in the future of books and libraries respectively. Based on the research analysis, books and libraries will remain in the near future.*

***Key words:*** *digital reading, books, library, modern technology*



## 1. Introduction

### 1.1 Shortly about evolution of technology

Since the evolution of technology is so fast, one can easily notice significant changes in life over the recent years. Because of technology, few things which we know and used to utilize before became “useless” and old-fashioned. People are not using them anymore. The followings can be few good examples:

#### **Handwritten Letters VS. Email, Viber, Whatsapp etc.**



Over the past few years it was a normal case for people that they communicate with their loved ones via post by sending handwritten letters to each other. However, today this way of communication is old-fashioned and became costly due to technology. People today do not write letters manually and send them via post offices to their friends just for communication purposes. Rather they are using online technologies such Email, Social Networks or specific type of communication applications in their mobile devices like Viber, Whatsapp and Telegram. Technology made their life easier and the way of communication cheaper.

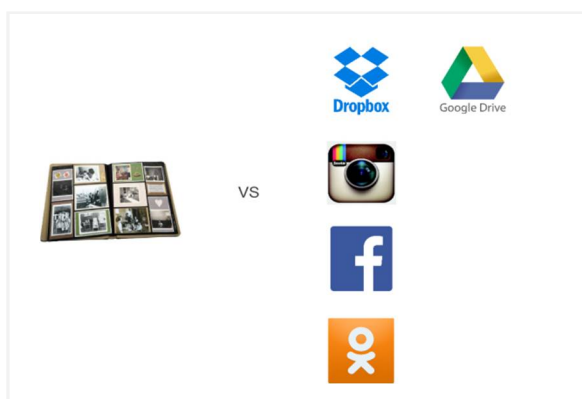
#### **Mobile VS. Watch, Radio, Alarm Clock, Camera, Video camera, Phone box etc.**



Mobile is the most powerful device for the people today. It has already replaced a lot of used stuff, e.g. watches, radio, mp3 players, alarm clock, camera/video camera, street phone box etc. One multifunction device can do all of

these things' functionality. To some extent, due to mobile these things are disappearing and exiting daily usage.

### **Photo albums VS. Instagram, Facebook, Odnoklassniki etc.**



Instead of storing photos in the photo albums in paper form, people are using hardware devices or cloud-based storages like Dropbox and Google Drive, or social networks to share their photos easily with their friends anytime and anywhere.

More other significant changes can be listed as well, in addition to the abovementioned list. For example, today one does not feel the real need for hard copies of Encyclopaedias (like Britannica) since he/she has powerful online tools like Google Search, Wikipedia etc. and in one click the searched information can be found in seconds.

We have seen that evolution of technology can force some items, which we had considered as important ones, to exit from daily life usage and at the same time create innovations to replace them.

Here comes my question of interest: Will technology have such impact on paper books too? Will the paper book disappear as well in the near future? What about the Libraries?

### **2. Future of Books**

Well, one can argue that there is already a danger from technology side to the paper book life. Emergence of online reading, advanced tools in the internet such

as Google Search Engine, and creation of big screen convenient devices such as Tablet, Kindle and bigger screen Mobile devices which may be used as alternative to paper books, made me think about the future life of paper books as well as libraries.

Because of technology, will paper books and libraries disappear in the future?

There are already some academic researches done on this field.

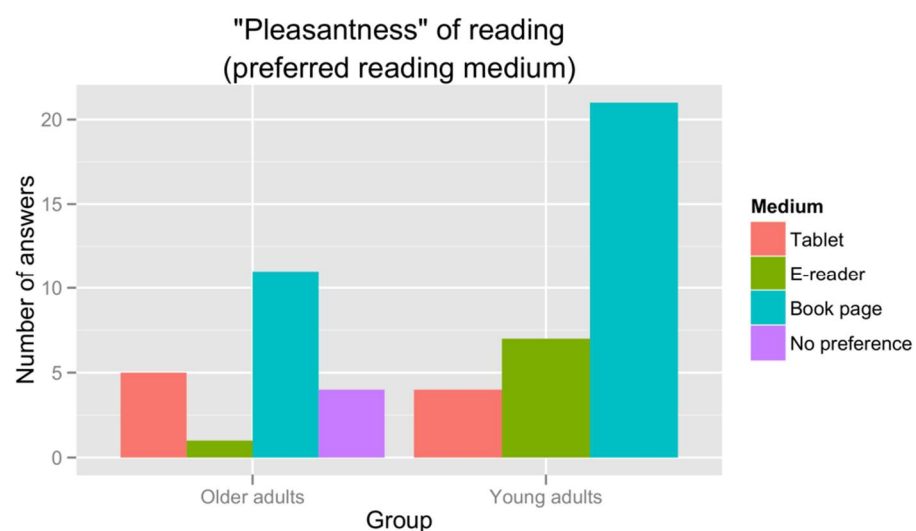
Comparing online (from device screen) and offline (from paper) reading behaviour some researchers found that reading online has a negative impact on people's cognition. Concentration, comprehension, absorption and recall rates were found to be much lower while reading online [Hooper & Herath, 2014].

There are also health danger factors for reading online. Leu & Zawilinski found that reading from the device screens has a negative impact on short and long term memory, and at the same time there is lack of concentration, and lack of comprehension on reading online [Leu & Zawilinski, 2007].

Tanner (2014) mentioned in his/her academic research paper that reading digital has a negative impact on reader's eye.

Interestingly, according to some research findings, reading on paper is much faster (e.g. 10-30% faster) than reading online [Kurniawan & Zaphiris; Gould & Grischkowsky, 1984; Smedshammar et al 1989].

People also say that reading from paper book is more pleasant than reading from the device screens, see the chart below [Kretzschmar et al, 2013].



*Source: Subjective Impressions Do Not Mirror Online Reading Effort:  
Concurrent EEG-Eyetracking Evidence from the Reading of Books and Digital  
Media*

[\(<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0056178>\)](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0056178)

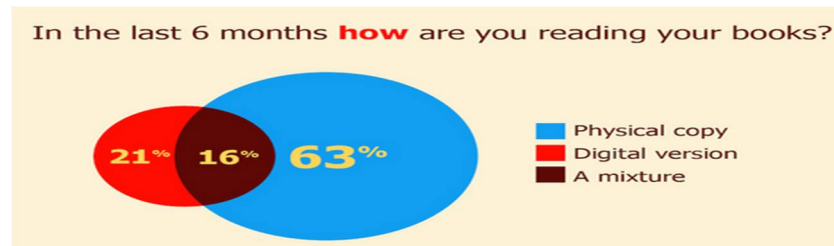
Most findings showed that people prefer online reading in case they are seeking for particular information, or in a job/study searching process and they simply do it by skim reading, and they like cross-referencing in online materials [Hooper & Herath, 2014]. But pleasantness and more attentive reading are dominant in paper reading [Kretzschmar et al, 2013; Hooper & Herath, 2014].

Surely there are advantages of online reading behaviour as well. Efficiency, flexibility, cost effectiveness and convenience are much higher in electronic reading.

Online reading might also be distractive. This is a good example from my experience. When I read things online from my laptop screen in most cases I am distracted by other factors like checking my Email frequently, looking at Skype messages or checking my social network pages including Facebook or watching something interesting in Youtube etc. When I want to concentrate while reading, I prefer to be in quiet environment and not to be distracted by other outside factors.

In paper books it is also easier to make notes and highlight specific pages and information. Based on many factors I myself prefer reading from paper books to online reading if I want to enjoy reading and get more information with more attention. At this point if we look at some statistics from the past studies we can also see that people prefer reading paper books to digital copies. According to

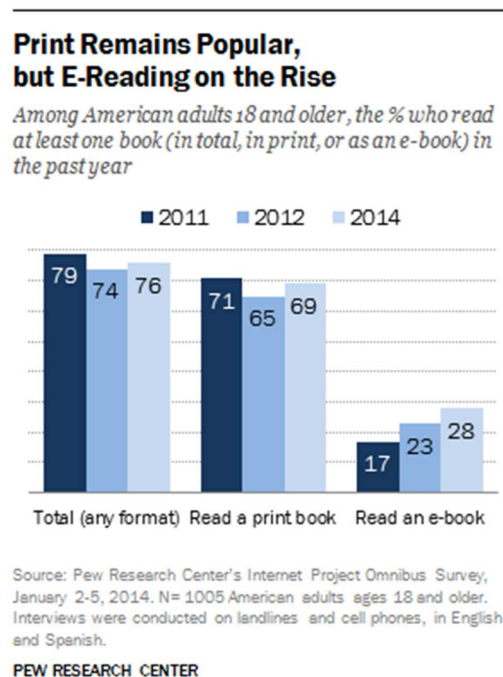
LoveReading.co.uk study, people who read physical books three times more than digital readers (see the graph below).



Source: *The Habits of British Book Readers*

[\(http://the-digital-reader.com/2014/06/09/infographic-habits-british-book-readers/\)](http://the-digital-reader.com/2014/06/09/infographic-habits-british-book-readers/)

Pew Research Center survey results highlight that the percentage of people reading from printed books is still much higher than e-book readers (see chart below).



Source: *Pew*

*Research Center*

[\(http://www.pewresearch.org/fact-tank/2014/06/30/7-surprises-about-libraries-in-our-surveys/\)](http://www.pewresearch.org/fact-tank/2014/06/30/7-surprises-about-libraries-in-our-surveys/)

As a part of my research I have made a survey to find mostly about online (from device screen) and offline (from paper book) reading behaviour of people and take those factors which highlight interesting differences between these reading environments.

*Survey part has not been finalized yet. Here it will be inserted once the survey results are up.*

*Sample from survey question:*

*1. Which one do you prefer: Reading digital or paper book?*

*a. Digital*

*b. Paper book*

*2. Why paper book?*

*a. I can pay more attention*

*b. Easier to find pages*

*c. Easier to mark (highlighting)*

*d. Less dangerous to health*

*3. Why digital?*

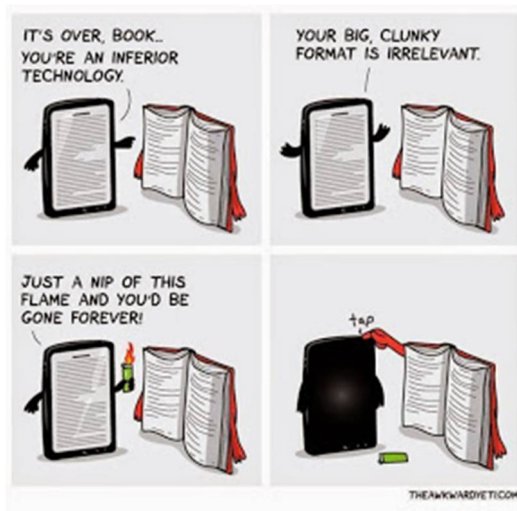
*a. Convenient*

*b. Easier to find pages*

*c. Fun and luxurious*

*d. Easy to search for information*

*4. ...*



When it comes to books, technology can only be used as supplementary tool but surely will not dominate paper books. Paper books and libraries will stay for some time in the near future; they will not be replaced with technologies.

Technology can be used in the best way as a helpful tool to access books. In this manner, there are many advantages of it. For example, today anyone can buy his desired book any time he wants by ordering it online (e.g. Amazon.com). In the library system technologies can be used efficiently as well to increase user-friendly environment, attract and motivate more readers.

### 3. Technology to Lead to Library Efficiency

Since I believe that hi-tech will not and cannot replace books and libraries in the near future, it can be used in a smart way to develop the library system so that people can access books easily and enjoy reading.

How can technology be used to make the library work more efficiently?

Taking European library system experience into consideration and based on my analyses there are some suggestions I would like to make to develop our Library system.

Case 1. Central European University Library System – how it works, highlights.

The screenshot displays the CEU Library website. At the top left is the CEU Library logo. To the right is a search bar with the text "Search our website" and a right-pointing arrow. Below the logo is a navigation menu with tabs for "Using the Library", "Services", "Collections", "E-Resources", "About us", and "Alumni". On the far right of this menu are the links "CEU | OSA | OSF". A secondary navigation bar contains "Opening Hours", "Membership", "Library Rules", "Fair Use", "Event Calendar", and "Help". The main content area features a search bar with a dropdown menu set to "Library Catalog (Title)", a "Search" button, and a green "Advanced Search" button. Below the search bar is a note: "(Use the drop down menu to switch between databases. Search by keyword, title, author, call number, subject, etc.)". On the left, there is a section titled "About the Library" with a paragraph of text. To the right of this text is a video player showing a library interior with people studying. On the far right, a vertical sidebar lists various services: "My Account", "Interlibrary Loan", "Remote access/VPN", "Databases", "E-Learning", "Lost/Missing Book", "Opening Hours", "Membership", "CEU Directory", and "Help/Chat".



- Own Collection Database of electronic materials
  - o Large volume of e-resources (e-books, e-journals, academic publications etc.) enables the reader to access the materials he/she wants to get
- Powerful Search Engine
  - o Advanced search engine makes the reader life easier to find his material easily. This is cost effective and time efficient.
- Book ordering system
  - o Send order request online and get informed by the library system.

Library should be rich with enough facilities so that the reader would not be distracted by outside factors but only sit in the library and concentrate on reading. For example, there should be printers and scanners to get copies from the books since we have seen in earlier chapters, that people prefer reading the paper sources than electronic version.

Library environment should be in such a way that people ought to not feel disturbed but motivated to read. Library hall should be in open space where readers can search for books themselves using technologies efficiently. Being surrounded inside the books in the library, to some extent, affects a person positively and motivates him to pick up at least one book and read it. Some people simply love touching the books; the library is a good environment for them.

One of the best technological solutions to improve the library system can be mobile applications as almost everyone has smartphones nowadays. The application can be integrated into current library system and offers easy-to-use user interface. For example, from the application the library user can access his/her account and search for specific books/resources and then be able to book or order the resources from the mobile. Once the reader has ordered the book, he can be notified via email or SMS that his order has arrived and he can pick up the book. This enables to build a good relationship with the reader and offers him additional convenience from the library system. From the application the user can also

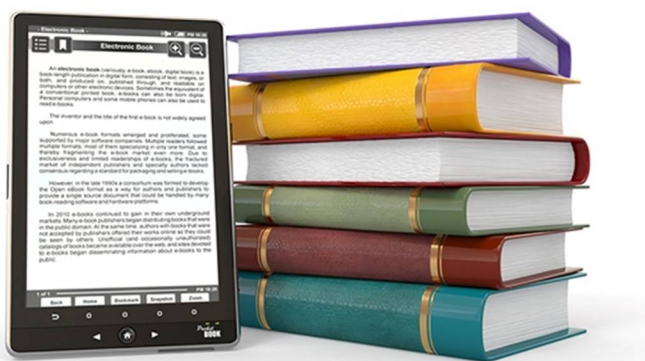


download electronic version of the materials if it is allowed. More other features of such mobile application solutions are part of my future research.

The suggestions how to use technology to utilize them as a best supplement to books and libraries simply come from this small research I have made. I believe that this area should be studied further. In my future research I am planning to find out which technology part can be taken and used in such an efficient way so that it contributes to increasing the quality of library system in my country.

*My Future Research Plan:*

*What can be done for the development of the library system in Uzbekistan Universities using modern technologies?*



## REFERENCES:

1. Central European University Library. Link: <http://www.library.ceu.hu>
2. Hooper V. and Herath Ch. (2014) Is Google Making Us Stupid? The Impact of the Internet on Reading Behaviour. *Victoria University of Wellington, New Zealand*. Link:  
3. [https://domino.fov.uni-mb.si/proceedings.nsf/0/245b68041b843574c1257cee003df66a/\\$FILE/04\\_Hooper\\_Herath.pdf](https://domino.fov.uni-mb.si/proceedings.nsf/0/245b68041b843574c1257cee003df66a/$FILE/04_Hooper_Herath.pdf)

4. Kretzschmar, F., Pleimling, D., Hosemann, J., Füssel, S., Bornkessel-Schlesewsky, & Schlesewsky, M. (2013). Subjective impressions do not mirror online reading effort: Concurrent EEG-eyetracking evidence from the reading of books and digital media.

5. Link: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0056178>

6. Kurniawan S.H and Zaphiris P. Reading Online or on Paper: Which is Faster? *Institute of Gerontology and Dept. of Industrial & Manufacturing Engineering Wayne State University.* Link: <http://www.paperbecause.com/PIOP/files/f7/f7bb6bc5-2c4a-466f-9ae7-b483a2c0dca4.pdf>

7. Pew Research Center (2014). 7 surprises about libraries in our surveys. Link: <http://www.pewresearch.org/fact-tank/2014/06/30/7-surprises-about-libraries-in-our-surveys/>

8. The Habits of British Book Readers (2014). *Lovereading.co.uk* Link: <http://the-digital-reader.com/2014/06/09/infographic-habits-british-book-readers/>

9. Tanner J. (2014). Digital vs. Print: Reading Comprehension and the Future of the Book. *San Jose State University.* Link: <http://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1186&context=slissrj>

## DIGITAL LIBRARY FOR TUIT STUDENTS

*F. H. Boltaev, Sh.T. Ibragimova*

*Summary. In this paper, I describe the working principle of the electronic library that I have created to provide service for the students of our University to prepare for their classes and to conduct research using the internet without actually stepping into the library. The creation of such electronic library is essential in the century of computer technologies and extremely useful for the students to improve their performance.*

*Key words: Digital library, electronic catalog, Library cloud, computer technologies, web technologies*

## **I. Introduction**

In February 23, 2011, the president of Republic of Uzbekistan made a declaration about the regulations of developing electronic libraries and services for them. Since April 13, 2011, when this decision was put in force, significant improvements have been made in creating online libraries. Despite such an increased effort, there is still a need for creating available electronic resources in the online library. Therefore, I tried to create my own online library to help the students of our University to make a progress in their studies and research.

My aim of creating the LibraryCloud is to build an electronic catalog and database using modern web technologies and programs' packages including HTML, CSS, JavaScript, PHP and MySQL. I have created a website [www.librarycloud.uz](http://www.librarycloud.uz) where I will be uploaded the complete basis information of our University. The users of current internet page will have a number of conveniences as well as opportunities in order to find necessary books in a short spare of time:

- 1) Any student studying at the universities can be enrolled to this site.
- 2) All information will be available for students.
- 3) Searching system will be fixed on the basis of the project.
- 4) The books, which do not exist in the database, can be ordered by using online searching system.
- 5) The main advantage of the current project is to give the opportunity for the students to find and download any books or papers without visiting the library.

## **II. Description of the project**

Nowadays, the internet has become a widespread information infrastructure that reaches various fields, such as education, hospitality, business and research. There are number of software packages for developing online database. In my project I used the following programs to create my webpage:

- HTML:** HTML is a markup language commonly used to create web pages. It provides a way to describe the structure of text and graphics on a web page. HTML is developed and maintained by World Wide Web consortium. It is derived from a more general markup language called standard generalized markup language, which is an international organization for standardization (ISO) technology that defines markup languages.

- JavaScript:** JavaScript is an object-oriented scripting language that is used to design interactive websites. Netscape and works in all major browsers, such as internet Explorer, Firefox, Chrome, Opera and Safari, develop it. I use JavaScript with HTML code to add dynamic content to my websites. JavaScript is an interpreted language implying java Script requires an interpreter to execute its code.

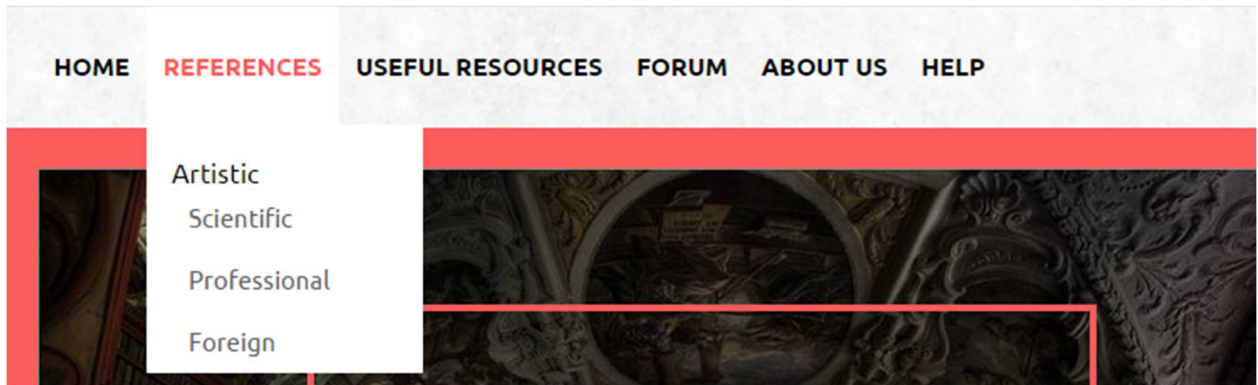
- CSS:** Ccss is a style sheet language that is used to describe the appearance and formatting of Web document, which is written in a markup language. An example of such markup language is HTML. CSS Enables you to Keep Separate the instruction related to the presentation of with the help of an HTML element, and specify the position of the image on a web page code. The instruction related to the presentation of web content can be described in a separate CSS document, which is also known as CSS style sheet. This separation provides improved content accessibility, flexibility, and style sharing for websites.

- PHP:** PHP is a scripting language used to create dynamic Web pages. An interpreted language is executed on server side. PHP can be embedded in

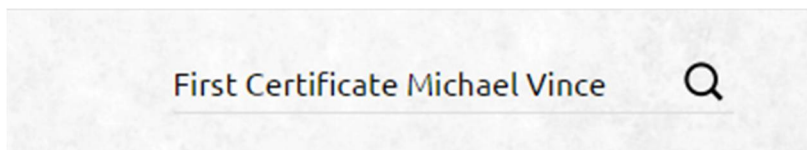
HTML pages and usually runs on a web server. A PHP file has an extension of php, php3, or phtml. This file can have text, HTML tags, and scripts. In an HTML page, the PHP code is enclosed within special PHP tags, <?php and ?>.

### III. Main part of the project

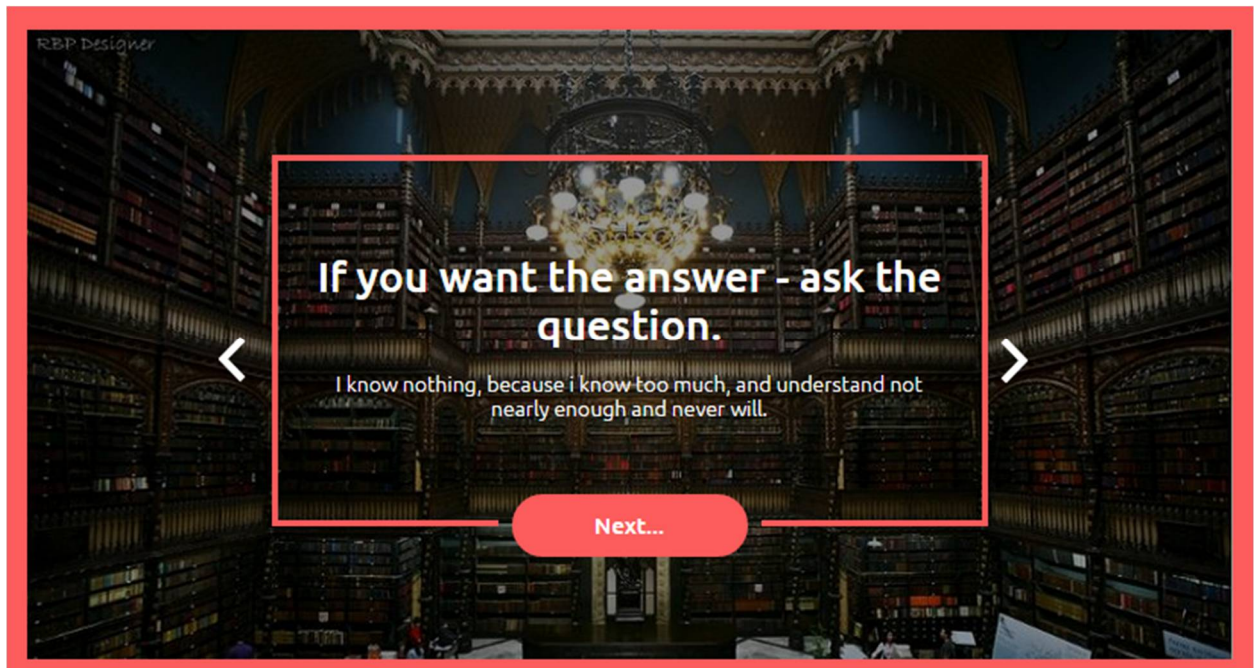
“Header menu”



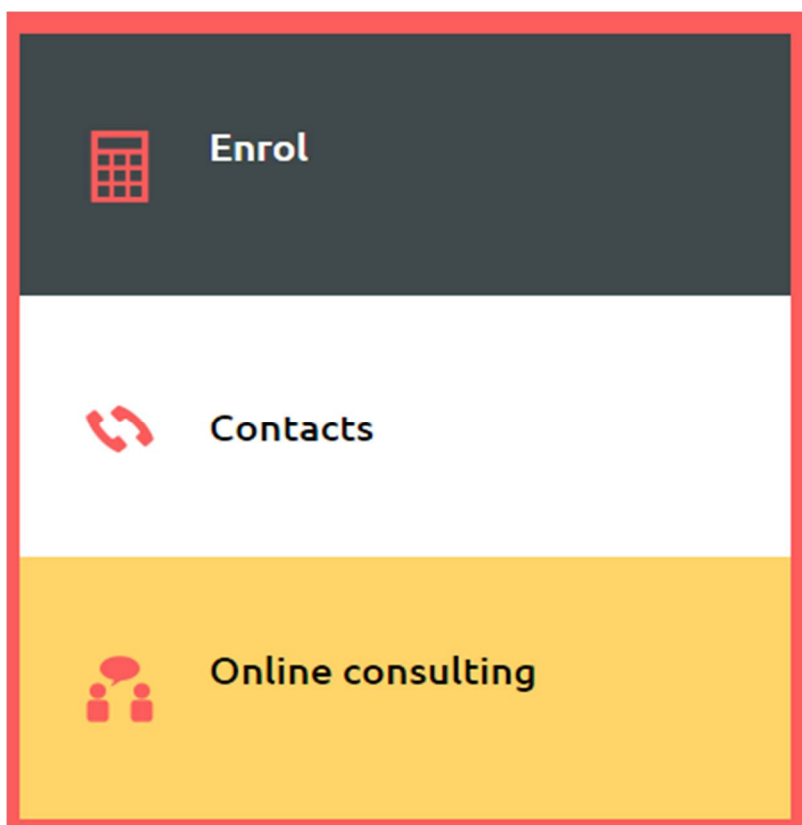
“Search menu”



“Main slider”. Slider consist of 3 parts.




“Right menu”.




“Offer”


## Offer



**Sul-ton Jaloliddin**  
*This is about the history of J. Manguberdi.*  
 The book created by Mikarim Osim. It gives us a lot of information about Jaloliddin.

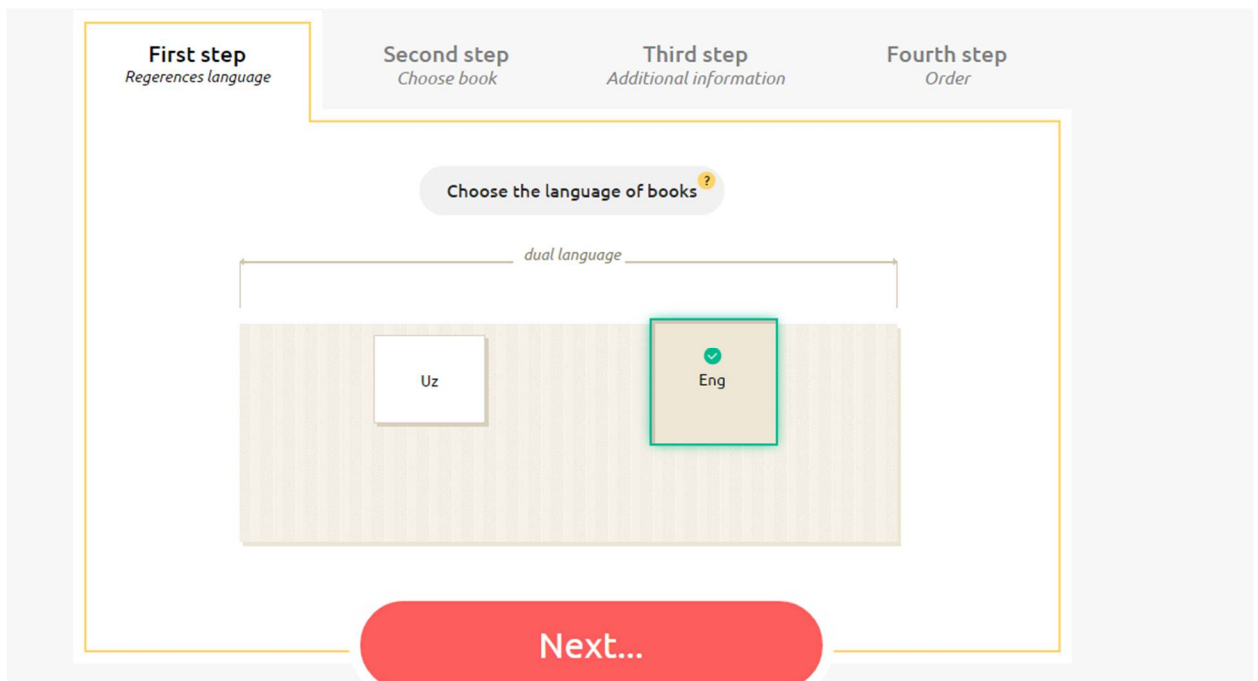


**Uyg'otuvchi alla.**  
*This book very interesting.*  
 There are have modern and classic poems.



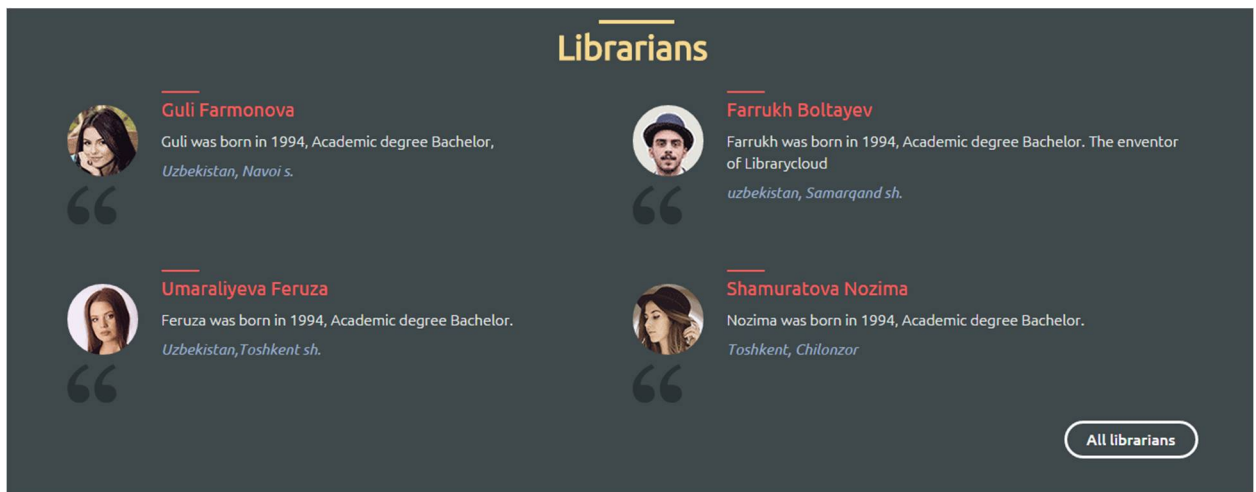
**Sirli tush**  
*This book consist of folk- tales.*  
 There are have interesting stores created by Folk.

### “Steps of choosing a book”

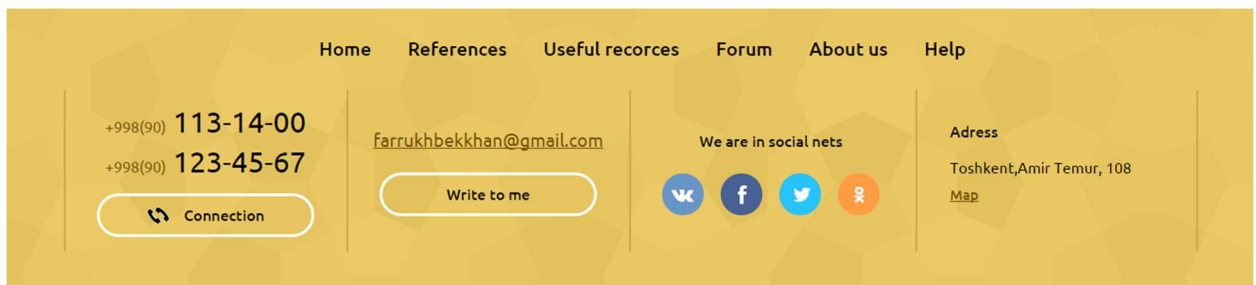


### “About librarians”





“The last page”



#### IV. Conclusion:

Nowadays, while Informatization and information technologies develop rapidly in the world, the digital library is not widely spread in our country . Because of this I tried to make a small contribution in this direction. In the future I would like to strengthen this field and I hope my project will be helpful and useful for everyone.

## INFORMATION SECURITY IN OUR LIFE

*M. Kobulova, N.Y. Barnoeva*



**Summary.** Information security is a priority for companies. But the process of keeping financial, employee and a host of other data safe is not without its challenges.

**Key words:** Information security, safeguarding employee data, Discarded Hardware, corporate-information disposal process.

**What is the information security issue (or two or three) that companies should be worried about?**



### **Beware What Your Company Knows About You**

The importance of safeguarding employee data is not a new imperative, but I think there are reasons to believe it should be given much greater importance. With the rise of talent analytics, companies are collecting increasing quantities of information about their employees, and perhaps even more important is that the predictive power of this information is increasing as well.

As we continue to learn more about the scientific linkages between behavior, brain and body, the fact is that information collected about any one member of this triad has the potential to reveal much about the others. For example, measurements about a healthy person's gait while walking are now linked to the later onset of Alzheimer's disease. Several startup companies working with scientists are



More bad news: All of these potential alarms lying around in reports or queues—each probably innocuous but possibly a smoking gun—might be used against you if something goes wrong.

Imagine: Judgment day arrives after something bad happens. Forensic analysis is then performed to figure out how this breach went undetected, only to have the oversight committee say, "Look, the alert is right here in the alert log on page 32,912. If you had appropriately resourced, this disaster would not have happened!"

Will your organization be able to find leaks lurking in that Big Data?

Now the good news: Using Big Data on Big Data for better security will prove to be one of best ways to reduce false alarms.

Let me explain. If I handed you a puzzle piece with flames on it, would you think this is good news or bad news? Is this a fire in the fireplace near a glass of wine? Or is this a fire in the hallway? Without more context (related puzzle pieces), just staring at one transaction (a puzzle piece with flames on it), one might be inclined to raise an alarm—just to be on the safe side, of course.

Context-accumulating engines, systems that weave the transactions of the enterprise together, will transform piles of puzzle pieces into pictures. With these more complete pictures will come fewer false alarms and, at the same time, the discovery of interesting, and otherwise nonobvious, real alarms.

## **Protect Your Intellectual Property**



The answer to this question depends, in great part, on the industry and specific company involved. However, generally speaking, in a competitive global environment, it is absolutely essential that intellectual property be protected. Without it, a firm loses its global competitive position and ability to ultimately survive.

Obviously, competitors always have the opportunity to "reverse-engineer" a company's existing products and services to understand how they work and how they differ from the competitor's own offerings. It is, however, what is in the R&D, process and organizational pipeline that has not been introduced which must be protected with a vengeance.

Second, it is essential that companies' financial systems not be hacked. Unfortunately, it is often company employees who, in the absence of tamper-proof internal controls, are often doing the hacking. However, especially in the case of financial institutions, breaches of security, from the outside, have had, and can have, significant economic consequences.

Third, hacking into a firm's customer information, including personal information and accounts is, potentially, another huge exposure risk. With the

digitization of almost every kind of information, broad-based information-security management is both very challenging and absolutely essential.

### **Check Your Garbage! (Or How Discarded Hardware Can Hurt Companies)**

Security is only as strong as the weakest link. One area frequently overlooked is the potential risks associated with systems, mobile devices and hardware when they reach the end of their useful life. Every day, vast amounts of hardware are discarded by firms replacing and upgrading their equipment. Usually, firms think that they are doing the right thing during decommissioning by ecologically recycling, perhaps deleting the hard drives and 'wiping' the phones.

However, once this has been done, few firms ever take the trouble to independently audit what is left on those drives or trace where they ultimately go in their long journey after they leave. Unfortunately, pressing "delete" is seldom enough. Law enforcement; the security services, and industrial spies who dumpster-dive (or more accurately bid on containers of e-waste) have the tools and the capabilities to retrieve your deleted data from sources such as cache memory and discarded routers. In addition, they can piece together data from multiple sources. For example, it is likely that whole trading floors' computers at an investment bank would be switched out in one go. A forensic-data-recovery specialist may buy the computers as a wholesale lot with the pretense of recycling them, only to then recover the data from each machine, creating a larger window into the original data set, and then sell this to a competitor interested in the originating banks' trading positions.

Another potential treasure trove for data spies is the office photocopier. These are often managed by a third-party vendor who one day just turns up and delivers a new one and everyone is happy. Unfortunately, many organizations do not undertake their own data-cleansing operation before handing over the machine to

the vendor, nor do they stipulate what happens to the machine once it has left the premise.

Perhaps for many firms it is time to start reassessing their corporate-information disposal processes. They need to stop thinking of this as a disposal problem for facilities to handle, and realign this under the correct risk-management authority it truly deserves.

## TEACHING IN LARGE CLASSES

*M.M. Muhamedova, S.O. Ergasheva*

**Summary.** *The article is devoted to the New Methods of Teaching in Large Classes and their problems. There are also presented some new ways and methods of teaching.*

**Keywords:** *teaching, learning, methodology, interaction, large-class, feedback, competence, discipline, cheating*

Ideally, language classes should have no more than a dozen people or so. They should be large enough to provide diversity and student interaction and small enough to give students plenty of opportunity to participate and to get individual attention. Unfortunately, educational budgets being as paltry as they are, most language classes are significantly larger. Classes of fifty to seventy-five are not uncommon across this globe. While you need to keep reminding administrators (who too often believe that languages are learned by rote memorization) of the diminishing returns of classes in excess of twenty-five or thirty, you nevertheless may have to cope with the reality of a large class for the time being. Large classes present some problems:

- Proficiency and ability vary widely across students.
- Individual teacher-student attention is minimized

- Student opportunities to speak lessened.
- Teacher’s feedback on students’ written work is limited.

Some solutions to these problems are available. Consider the following that apply to one or several of the above challenges:

- a) Try to make each student feel important (and not just a “number”) by learning names and using them. Name tags or desk “plates” serve as reminders in the early days of the course.
- b) Do more than the usual number of listening comprehension activities, using tapes, video, and yourself. Make sure students know what kind of response is expected from them. Through active listening comprehension, students can learn a good deal of language that transfers to reading, speaking, and writing.
- c) Use peer-editing, feedback, and evaluation in written work whenever appropriate.
- d) Give students a range of extra-class work, from a minimum that all students must do to challenging tasks for students with higher proficiency.
- e) Don’t collect written work from all of your students at the same time; spread it out in some systematic way both to lighten your load and to give students the benefit of a speedy return of their work.
- f) Set up small “learning centers” in your class where students can do individualized work.

Organize informal conversation groups and study groups.

## ***2. Teaching multiple proficiency levels in the same class***

There is often a wide range of proficiency levels among students in the same class, especially in large classes, but even relatively small classes can be composed of students who in your estimation should not all be placed at the same level. In either case, you are faced with the problem of challenging the higher-level students and not overwhelming the lower-level students, and at the same time keeping the middle group well-paced toward their goals. Most of the time, the phenomenon of

widely ranging competencies in your class is a byproduct of institutional placement procedures and budgetary limits, so there is little you can do to “kick out” the students at either extreme. So, how do you deal with tills? Here are some suggestions to consider: Do *not* overgeneralize your assessment of students’ proficiency levels by blanket classifications into “the good students” and “the bad students.” It is a common mistake among teachers (we all do it!) to talk about smart and dumb students in our classes. We must be very sensitive to the issue of *proficiency* vs. *ability*. In a set of skills as complex as language, it is often difficult to determine whether a student’s performance is a factor of aptitude, ability, a “knack,” or a factor of time and effort.

For most students, competencies will vary among the four skills, within each skill (e.g., in reading, lexical knowledge, meaning-seeking strategies, speed, efficiency, etc.), and by context. As much as possible, identify the specific skills and abilities of each student in your class so that you can tailor your techniques to individualized needs. Through diagnostic tests and exercises and day-by-day monitoring of students, you may be able to pinpoint certain linguistic objectives and direct your students toward those.

### ***3. Compromising with the “institution”***

Another adverse circumstance is one that most teachers have to deal with at some time in their careers: teaching under institutional conditions that do not meet their ideal standards or philosophy of education. Sometimes such circumstances focus on an individual in charge, a director or principal. And sometimes they center on administrative constraints that are beyond the scope and power of one individual. Some examples:

- classes that are far too large to allow for the kind of results that the administration expects (see above),



- physical conditions in the classroom that are onerous, administratively imposed constraints on *what* you have to teach in your course (the curriculum, possibly in great detail),
- administratively imposed constraints on *how* you should teach (a specific methodology that you disagree with is required),
- courses that satisfy an institutional foreign language requirement, in which students simply want a passing grade,
- courses that are test-focused rather than language-focused.

All these and even further adverse circumstances are part of the reality of teaching and ultimately of classroom management because they all impinge in some way on what you can do in your lessons. Your handling of such situations will almost always demand some sort of compromise on your part. You must, as a professional “technician” in this field, be ready to bring professional diplomacy and efficiency to bear on the varying degrees of hardship.

#### ***4. Discipline***

Many volumes of research and practical advice have been written on the subject of classroom discipline. If all of your students were hard-working, intrinsically motivated, active, dedicated, intelligent learners—well, you would still have what we could label “discipline” problems! Without making this section a whole primer on discipline, I will simply offer some pointers here and let you make the applications to specific instances.

- Learn to be comfortable with your position of authority.
- Gain the respect of your students by treating them all with equal fairness.

State clearly and explicitly to your students what your expectations are regarding their behavior in class (speaking, turn-taking, respect for others, group work, individual work, test-taking, etc.), attendance (tardiness and absence policy), and any extra-class (“homework”) obligations.

Be firm but warm in dealing with variances to these expectations.

In resolving disciplinary problems, try to find the source of the problem rather than treating symptoms (for example, if a student isn't paying attention in class, it could be because of a lack of sleep caused by trying to work a late night shift, in which case you could suggest a different shift or a different time bracket for the English class). • If you cannot resolve a recurring disciplinary problem, then consult your institution's counselor or administrator.

### **5. Cheating**

Cheating is a special disciplinary matter that warrants careful treatment. For the sake of definition, we will say *cheating* is a surreptitious violation of standards of individualized responses to tests or other exercises. The first step to solving a perceived problem of cheating is to ascertain a student's own perception: Did he or she honestly believe they were doing something wrong? There is a good deal of cultural variation in defining what is or isn't cheating, and for some, what you may think is cheating is merely an intelligent utilization of resources close at hand. In other words, if the answer that is written on the test is correct, then the means used to come up with the correct answer are justified. Once you have adequately ascertained a student's perception, then follow the disciplinary suggestions as a guide to a solution.

### **REFERENCE:**

1. Lucmani, Y. (1972). Motivation to learn and language proficiency. *Language Learning*, 22, P. 261-274.
2. Layback, K. (2002). Cultural identification and second language pronunciation of Americans in Norway. *Modern Language Journal*, 86, 174-191.

## **APPLICATION CASE TECHNOLOGY IN THE TEACHING OF COMPUTER SCIENCE**

*K. Yu Pak., Yu. V. Risyukova*

***Summary.** The given article considers the application case technology in the teaching of computer science.*

***Key words:** Case Technology, Case method, computer science*

In connection with the reforms of education in our country, there is a constant search for effective teaching methods, one of them is the so-called case-based technologies.

Originally case technology developed for training of lawyers and managers, when students are actively discussing specific economic or legal situation, which served as the basis for their future professional activities. To date, these technologies are widely used in schools, and in elementary school made the first attempt. The name comes from the Latin term «casus» - confused or unusual case.

Case Technology combines both role-playing games, and project-based learning, and situational analysis.

Case Technology opposed such types of work as a repetition of the teacher, the answers to the questions of the teacher, retelling of the text, etc. Cases differ from conventional educational tasks (tasks are, as a rule, one solution and one correct path leading to that decision, cases have several solutions and many alternative paths leading to it).

In the case of technology-analyzed the actual situation (some inputs) the disclosure of which both reflects not only any practical problem, but also actualizes a certain body of knowledge to be learned in the resolution of this problem

Today, during the transition from an industrial to an information culture, characterized by such features as integrated nature, flexibility, mobility of thinking, dialogue, tolerance and close communication at all levels, before the formation of the task - to prepare a person corresponding to this new culture.

Modern school must raise a person's willingness to 'innovative behavior. " In place of obedience, repetition, imitation come new requirements: the ability to see

problems, quietly take them and decide for yourself. This applies to all areas of life: home, social and professional.

The principal difference between the educational standards of the second generation is their focus on educational outcomes as a system component design standards. " "The process doctrine is understood not only as the assimilation of knowledge and skills that make up the basis of instrumental competence of students, but also as a process of personal development, gaining spiritual, moral and social experience"

At the present stage has changed not only the amount of knowledge needed for modern man - even a big change occurred in the way of learning new things. Knowledge - the sea, but their methods of preparation have improved dramatically. Using a computer with Internet access, students can get better access to knowledge.

Modern lesson requires: equips students conscious, deep and solid knowledge; form students strong skills that contribute to their preparation for life; improve the educational effect of training in the classroom, forming student in learning personality traits; to carry out all-round development of students, to develop their general and specific features; forming student autonomy, creativity, initiative, as stable personality traits, ability to creatively solve problems that occur in life; develop the ability to learn independently, to acquire and deepen or replenish the knowledge to work with a book, learn the skills and abilities and creatively apply them in practice; generate positive motivation in students learning activities, cognitive interest, desire to learn, the need for expansion and acquisition of knowledge, positive attitude towards learning. To implement this task of the teacher which technology to choose. In the new educational standards significantly increased time for independent work. Thus, the new conditions require significant individualization of the educational process with the active position of the individual students in the learning process. This raises the problem of mastering new information technologies - the most important in the present conditions of

general information aspect of information culture, when this does not diminish the role of additional literature on the subject, which can be used to work independently. In addressing this issue can help case technology. Under the method of case studies to understand the subject of the study, by examining a large number of situations and problems in certain combinations. This method contributes to the development of skills: analysis of the situation; the choice of optimal solutions; evaluation of alternative solutions jobs. The purpose of this method is that the maximum activation of each student's individual work to resolve the problem. Case technology consists in the fact that at the beginning of training is offered an individual plan, each student receives a so-called case containing the package of textbooks, assignments on a selected topic, electronic materials, the advantage of the latter is possible to note the next available as a possibility of independent work in the electronic library and at home; visibility, ie colorful illustrations, video, multimedia components, diagrams, text highlight important definitions, etc .; sound lectures; availability of interactive activities; Animated examples of problem solving; opportunity to work with a non-linear materials provided by hyperlinks.

Case method I use for independent work of students in the classroom and at home.

## **MOBILE LEARNING IS AN EFFECTIVE METHOD OF DISTANCE EDUCATION**

***Pulatova S., Safarova F.***

***Summary.*** *The meaning of the term “m-learning”. The main advantages and disadvantages of m-learning. The specific forms and methods of implementation of mobile technology in the educational process. Analysis of technical and psychological readiness of students to mobile learning.*

**Key words:** “mobile learning”, technical and technological readiness, methods of implementation, benefits and disadvantages.

The term "mobile learning" (m-learning) refers to the use of mobile and handheld IT - devices such as PDAs, PDA (Personal Digital Assistants), mobile phones, laptops and tablet PCs in teaching and learning . As computers and the Internet have become essential educational tools, technology has become more portable, affordable, effective and easy to use; it offers great opportunities for increasing participation and access to ICTs, especially the Internet.

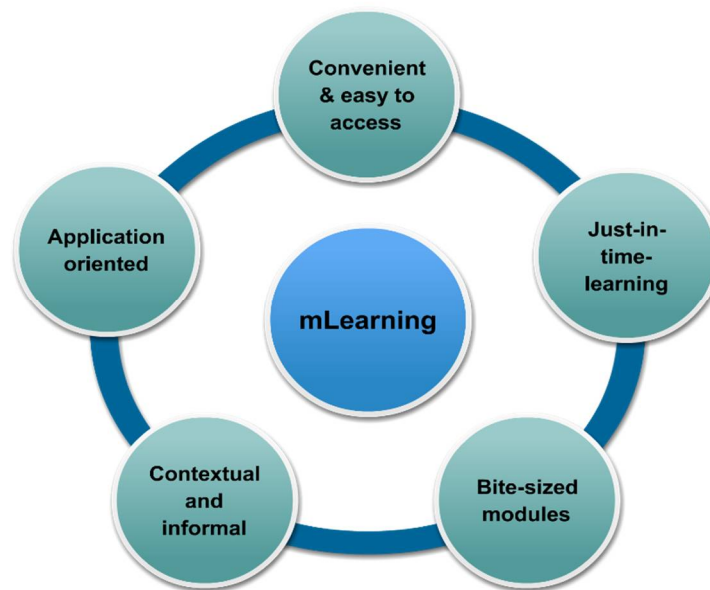
Mobile devices such as phones and PDAs are much more reasonable prices than desktop computers, and therefore represent a less expensive way to access the Internet

Most mobile devices are useful in education, management, organization and teaching for practitioners, as well as technical means of learning support for students.

Here are some of the main advantages:

- Students can interact with each other and with the teacher, rather than hiding behind large monitors.
- It is much easier to place in the classroom more mobile devices than a few desktops.
- Pocket or Tablet PCs (PDAs) and e-books are lighter and take up less space than files, papers and books, and even laptops . Recognition with a stylus or touch screen becomes more intuitive than using the keyboard and mouse.
- There is the possibility of sharing tasks and working together, students and teachers can send text via email, cut, copy and paste, transfer unit within the group, to work with each other using infrared function PDA or wireless network, for example, Bluetooth.
- Mobile devices can be used anywhere, anytime, including at home, on the train, hotels, which is invaluable for work-based training.

- New technical devices such as mobile phones, electronic gadgets, gaming devices, etc., involve students – young people who may have lost interest in education.



Benefits of allocated m-learning:

- M -learning via mobile makes learning individual. Students have the choice of learning content based on their interests, resulting in m-learning is student - oriented.

- Flexibility, immediate access to the information needed for a particular job, with the help of mobile devices to improve performance rights.

- Self-paced and immediate provision of on-demand content are characteristics of m-learning. It provides users with the opportunity to study in non-working hours and creates conditions for collaborative learning and interaction.

Latest trends in learning is blended learning, which combines different types of learning , to make learning more effective and interesting. Blended learning combines the advantages of different forms of learning, and is best suited to the context of learning in an interactive learning environment . Mobile learning can be combined with other types of learning, providing an interactive learning environment for students.

However, you also need to consider the following possible disadvantages:

- Small mobile PDA screens limit the amount and type of information that can be displayed.
- There is limited storage capacity for mobile phones and PDAs.
- Batteries should be exercising regularly, and data may be lost if it is not done correctly.
- They may be much less reliable than desktops (although tablet PCs begin to solve this problem.)
- It is difficult to work with graphics to use, especially with mobile phones, although 3G and 4G will eventually allow it.
- The market is changing rapidly, especially for mobile phones, so that the device can become obsolete very quickly.
- The capacity may be reduced when a large number of users using wireless networks.

In this regard, the future scope of mobile learning requires the joint efforts of mobile manufacturers, mobile service providers, and industry experts learning. Let us consider the specific forms and methods of implementation of mobile technology in the educational process.

1. Mobile phone provides access to sites with training information - is used as a form of distance learning.

The first (and most common) way is to use a mobile phone as a means of access to the global network. The organization of access to specialized sites containing e-learning courses, tests, practical assignments and additional training materials (drawings, photographs, audio and video files). Also possible to exchange e-mail for educational purposes and instant messaging programs ICQ, QIP, and the versions that exist for mobile phones.

An example of the use of mobile phones is actively developing project M-Ubuntu developed a large Swedish organization Learning Academy Worldwide in the second half of 2007. As part of this project was provided distance-learning



platform, allowing creating all the conditions for acquiring new knowledge and active use of new information technologies, even in remote areas and third world countries.

2. Mobile phone means to play audio, text, video and image files containing educational messages.

The second way of the possible use of mobile phones for learning is the use of special programs for the platforms of cell phones that are able to open and view files of office programs such as Office Word, Power point, Excel. Thus, having a mobile phone memory such files containing educational messages, you can view the version, adapted specifically for the phone's screen, with comfortable scrollbars suitable font and user-friendly interface.

An example of the successful application of this method of training is a series of educational programs at universities in Japan and China. Considering the mobile technology, teachers of these universities find them very promising in terms of modern society Informatization. National Cyber Institute in Japan, specializing in distance learning via the Internet, in 2008 with an innovative training system - using a mobile phone that allows you to learn any discipline, both at home and in the cafeteria or in the subway.

3. Mobile phone and its functionality allows to organize training using customized electronic textbooks , courses, and file types with specialized training information - tutorials are designed specifically for mobile phone platforms .

Students are encouraged to download to your mobile phone Java-based applications that contain, for example, testing in specific subjects, as well as information (electronic textbooks, texts of lectures) required for their successful implementation

Ability to organize schemes, drawings and formulas makes writing e-learning courses for mobile phones is universal and applicable to any subject studied.

There are plenty of special applications for mobile phones, such as calculators varying degrees of complexity (simple, scientific), Office software for mobile

phones , applications, containing a variety of tests with answers (e.g. psychologists), etc.

Analysis of technical and psychological readiness of students to mobile learning.

Thus, broad technical and functional capabilities of mobile phones are used for educational purposes as follows:

- the possibility of using SMS- correspondence or instant messaging with the teacher for advice ;
- ability to access the global network allows access to the necessary sites , exchange e-mail , send the necessary data files ;
- passage of testing on the mobile phone allows the student to independently control the level of knowledge of the subject ;
- electronic books for mobile phones make it possible to obtain new information regardless of time and location of the student ;
- the ability to play audio , video and graphics gives the expanded opportunities, particularly for teaching language subjects and creative specialties , allows you to use a variety of sources and methods of obtaining knowledge, student interest unusual teaching methods ;
- mobile counterparts language dictionaries and reference books , various types of mathematical calculators are easy to use and able to be more complete and up to date information quickly .

#### **REFERENCES:**

1. [ifets.ieee.org/russian/depository/v14\\_i1/html/1.htm](http://ifets.ieee.org/russian/depository/v14_i1/html/1.htm)
2. Attewell, J., Mobile technologies and learning, Learning and Skills Development Agency, 2005, United Kingdom.
3. Kumari Madhuri, Vikram Singh, Mobile Learning: An Emerging Learning Trend – Hi Tech White paper , 11, 2009.

# ANALYSIS OF THE STATE OF DEVELOPMENT OF INFORMATION TECHNOLOGIES FOR INFORMATION-LIBRARY INSTITUTIONS FOR THE BLIND AND VISUALLY IMPAIRED

*I. A. Kholboev, N.Y. Barnoeva*

*Summary:* People who are blind and visually impaired get the necessary information without going to the central library for blind and visually impaired but, in nearest information-library institutions for blind and visually impaired and use voice search and books in Braille.

*Key words:* The information-library institution for blind and visually impaired, corporate network, books in Braille, “talking” books, boarding school.

Nowadays on the market, there is a set of electronic resources of information centers, offering consumers a variety of services. Therefore, for libraries is the problem of introduction of new library services and improving the system of service to readers; especially important is the requirement for libraries serving persons with disabilities of various categories, including the visually impaired.

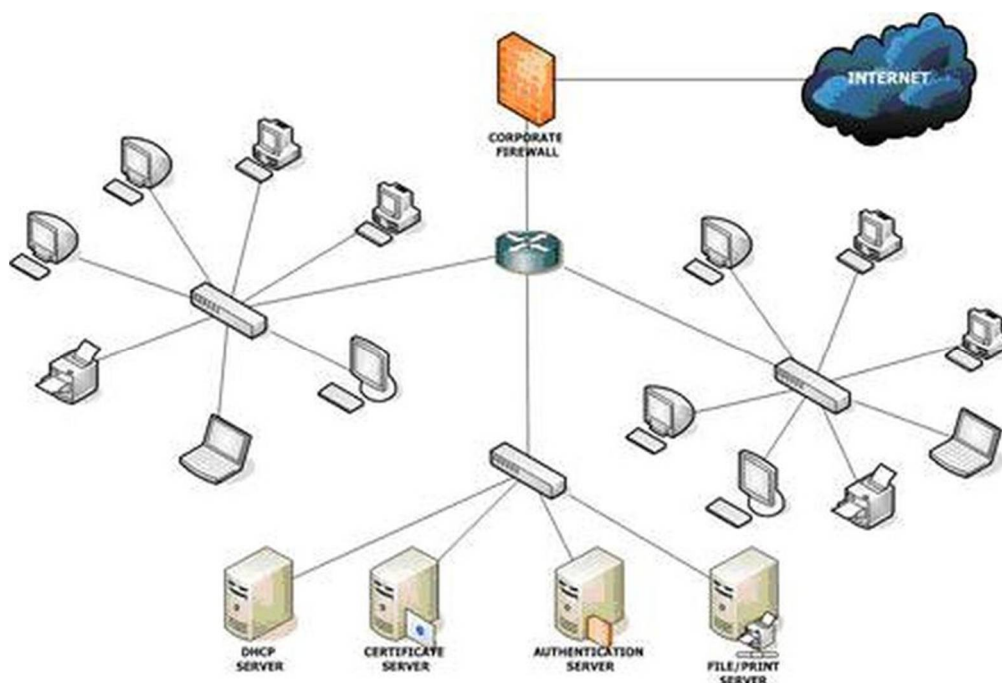
The information-library institutions for the blind and visually impaired provides accessibility to the world of information and literature for those who do not read printed material, allowing access to a variety of texts in formats that are convenient for them to use. The information-library institutions for the blind and visually impaired produce and lend books and magazines that are recorded by professional narrators, and books and magazines that are printed in Braille or in large print.

In order to understand the variety of reading difficulties caused by diverse disabilities, it is necessary to be acquainted with the different populations and their specific disabilities. This will lead to an understanding

of the differing needs of all subscribers and the solutions the information-library institutions can offer.

Resources of information-library institutions for the blind and visually impaired include a wide range of documents available for people who have difficulty in reading texts flatbed. Development of automation and introduction of new technologies into practice information services enable more and better meet the needs of readers, personalized service. To a blind person was able to get the information in the right amount, information-library institutions for the blind and visually impaired should have a special fund for the different types of media, including modern.

Nowadays, in order to help people who blind and visually impaired being created new technologies and projects; in example, it can be shown in corporate network for information-library institutions for blinds and visually impaired. What is the corporate network itself? A corporate network is a group of [computers](#), [connected](#) together in a building or in a particular area, which are all owned by the same [company or institutions \(pic. 1\)](#).



Picture 1.

In the near future, in Uzbekistan, it can be seen that not coming to the information-library institutions for blinds and visually impaired, a blind user can download the “talking” book to listen on software for blinds on site of information-library institutions for blinds and visually impaired, and available also database: audio “talking” books. And also, due to the relevant equipment and unlimited internet, in the future, the information-library institutions for blinds and visually impaired will have become possible to conduct maintenance of blind and visually impaired readers remotely: the reader can get help to make reservations to the document on the website and by e-mail, use the electronic delivery of documents, see the online lists literature for recording on flashcards and carry out the order for the missing in the fund "talking" book.

Besides this, Internet access enables blind and visually impaired users to not only obtain the necessary information without coming to the information-library institution, but also to take advantage of this service library as the communication on Skype. Combined with the information-library institution, you can get an answer in real time on any issue, including an overview listen, talk or meet with the materials of periodicals. All this services which given above will be in corporate network system.

Today, in Uzbekistan there are 81 information-library institutions and 14 boarding schools for blinds and visually impaired. In this institutions over 300 employers are working including almost 100 employers have higher education. 2330 pupils are learning and taking new knowledge in these 14 boarding schools. That means creating corporate network in these institutions will help people who are blind and have problem with eyesight (visually impaired). It will be development of information technologies for information-library institutions for blinds and visually impaired.

Overall, these ideas may help people who are blind and visually impaired get the necessary information without going to the central library for

blind and visually impaired but, in nearest information-library institutions for blind and visually impaired. Besides, users who blind and visually impaired can use simultaneously traditional books in Braille and electronic catalogues and funds with voice search.

## WEBINARS AS A MODERN FORM OF TRAINING

*Fomenko V.I. Risyukova Yu.V.*

*Summary.* The following article is dedicated to the most popular connection to Webinar. The modern forms of training are also considered.

*Key words:* Webinar, web conference, video training, virtual presentations

The modern school today cannot live at odds with the changes taking place in the world. And one of the challenges of the modern school is not by chance that a qualitative improvement in preparing students for life in a modern society. This problem can be solved only school-based professional development and pedagogical skills of teachers; they use new methods and forms of their solution. Modern teacher as one of the most important participants in the educational process cannot ignore the results of their work in constant and rapid improvement of information technology.

Online seminar (web conference, webinar, Eng. Webinar) - a kind of web conferences, conducting online meetings or presentations via the Internet. During a web conference, each participant is in your computer, and the relationship between them is maintained via the Internet through a downloadable application installed on your computer each participant, or via a web-based application. In the latter case, to join the conference, you just need to enter the URL (web address) in the browser window.

Webinars can be shared and will include sessions Polls and surveys, which provides full interaction between the audience and the presenter. In some cases, the presenter can talk via phone, commenting on the information displayed on the

screen, and the audience can respond to it, preferably by telephone with speakerphone. The market is also present technology, which supports VoIP-audio technology, provides full audio communication over the network. Webinars (depending on provider) may have the function of anonymity or the "invisibility" of users, allowing participants to the same conference cannot be aware of each other's presence.

In the first years after the advent of the Internet the term "web conference" is often called the forum thread or message board. Later the term was the importance of communication is in real time. Currently webinar is used in the system of distance learning.

Webinars - are activities taking place online. They are similar to regular seminars - successive reports, demonstrations, questions and answers, but it all happens in real time over the Internet.

Thus, despite the fact that all participants are physically far apart, formed a virtual "audience" that unites all.

Webinar (from the English. «Webinar», abbr. From «Web-based seminar») - online seminars, lectures, courses, presentations, organized with the help of web-technologies in live mode. Each participant is in your computer, regardless of geography and location.

Key features webinars:

- versatile video and audio conference;
- Download and view presentations and videos;
- text chat;
- demonstration of the computer screen leading participants;
- transfer of management rights from the leading competitors.

Unlike the webinar by videoconference is possible sometimes quite a large number of spectators turn into real interlocutors, if you have installed a microphone and even better - webcam (video camera).

What activities can be organized with the help of webinars?

- video training;
- Online conference;
- virtual presentations;
- online meetings, clubs and meetings;
- video conference/

The advantages of webinars:

- do not need to go for hundreds and thousands of miles to get to the workshop;
- no need to spend time and money on the road, accommodation, to break out of the workflow for a few days;
- can be taught in the home atmosphere for your favorite chair with a cup of hot coffee;
- no need to put any additional software: it works in the standard browser (Internet Explorer, Firefox, Opera, Safari);
- If you are late to the beginning of the webinar, you can connect at any time, while there is a webinar, and if you could not connect to the webinar for any reason, you can always download his record;

What do I need to participate in the webinar?

Listeners - Internet access and a headset (headphones, microphone).

Leading Webinars – Internet access, web-camera and headset.

Thus, the webinar - a new online technology, but that is very widely used by those who understand the value of time. Webinars, web conferences held every day more and more of a variety of companies. At least it's interesting.

## **THE ROLE OF INFORMATION TECHNOLOGY'S IN THE FORMATION OF A HARMONIOUSLY DEVELOPED YOUNGER GENERATION**



***T. Hairov, L.T. Tursunbaeva***

***Summary.*** *In the following article it is considered the main obstacles to intellectually, physically and spiritually developed generation; the need for the full involvement of parents in the education and self-education student; the spiritual and moral education – the main vaccinations against the negative impact of globalization processes.*

***Key words:*** *impact of the globalization and ICT, young generation, national development, importance of reformation of the education system.*

### **Introduction**

*"Today we should be obvious one simple truth: the most noble goal, facing us today - and a great future for our country and our tomorrow, free life and prosperity, and what place will take the Uzbekistan in the world community in the XXI century - it all depends primarily on the next generation, what kind of people our children grow up "*

***Islam Karimov***

*We are what we repeatedly do. Perfection, therefore, not an act, but a habit.*

***Aristotle***

The world is on the threshold of global changes and entering a new stage of development. Under conditions of increasing world population struggle for resources erupted with renewed vigor and with great fierce. The world is gradually, painfully and with great loss of life and strives to become multipolar and liberal. But some states and blocs do not like it, and this scenario "is not in their own script." They would like to be the political and economic hegemony in the world and dictate and even forcibly impose their own desire. And so they tend to use different types of weapons and arms to maintain its dominant position.

Since we live in an age of information and ICT, the most powerful weapon and the lever of influence is the information and various ICT, through which it is possible to deliver "the right for the customer" information for the "consumer".

It has long been such terms as information weapons and information warfare. WikiLeaks, disclosed by the Edward Snowden information about total worldwide surveillance NSA of the USA, virus attacks on the computing power of the Islamic Republic of Iran nuclear power plant, different Tweeter-Facebook revolution in the Middle East and the North Africa, etc. All of these incidents and disasters somehow related to information and ICT.

Whereas in the past the aggressors to win the people and the state with fire and sword, now the most powerful weapon is information and ICT. It suffices to study the psychology of people, based on the goals and objectives of the plan contents and then deliver this information to the end "user" and sow discord and chaos in the minds and hearts of people. At the same time as necessary have to enclose additional information firewood in inflaming the fire, and after a certain time, you can reap the rewards!

All this tells us about the importance and possible danger of information and ICT. And also presents us with new challenges and tasks for a secure, peaceful, consistent and constructive development of our country and the society. This encourages us to be more careful in the selection and use of information and ICT.

As early as January 24, 2001 at the meeting devoted to the education of youth our President Islam Karimov said: *"... those who want to put obstacles in our independent development path to achieve our goals, building a new society, first of all try to affect spirituality still immature youth with immature thinking, obscuring their ideas contrary to nature and the sacred traditions of our people, seeking to turn them into a tool in achieving their selfish and vile intentions"*. [2:172]

Unfortunately, more and more people around the world, and in our country become literally dependent on television, pop music and the tabloids constantly and persistently firing its main part of their body - the brain - various information for are often meaningless or even harmful and dangerous! And at the same time, various companies using modern research and discoveries in the field of human psychology and behavior skillfully use it for the benefit of themselves. They hire

experts in the field of human psychology to create ingenious commercials, posters and action to literally make a person buy their goods. For these purposes they use the TV, radio, pop music, social networking, tabloids, etc. It has long been a special science the psychology of advertising and marketing, as well as special profession for these purposes.

The number of educational programs on TV and in other media has been steadily declining: Now every five hours news comes just one minute paying to science. Only 1.4% of the total flow of information available through television, print media, radio and the Internet, is dedicated to educational topics. [3]

A study conducted by the University of California, found that repeated exposure to scenes from the scene of terrorist attacks and war zones increases the percentage of physical and mental illness among viewers. In fact, the TV was accused of provoking a collective trauma. And her name – fear and aggression. [9]

MD, renowned psychiatrist Igor Anatolevich Janushew said in an interview: The people who always look aggressive scenes on TV, they are in the developing aggression in they own mind and body. And it is not virtual, and the most that neither is real. I happened to be on probation in the United States just at the time when the criminal was shot seven pupils directly in the school. I was officially admitted to the research of the psyche of the man as a third party, i.e. an independent consultant. So the killer was found healthy schoolchildren. But when asked about his hobbies he said something like this: I like to watch fighters, fantasy and horror. The plot of the shooting of schoolchildren he "spied" in one of the coolest fighters. [9]

Television, pop music videos and video games, all without exception, using television technology, "unfold" a much faster rate than real life, and delivered faster, with the result that people have formed an increased need for high-speed receiving information through these means of communication. It is a form of television transmission facilities – fast frame rates, installation, zoom, panoramic

images and unexpected noises – changes our brain, activating what Pavlov called "orienting reflex." [4:207]

Orienting reflex is a physiological expression: a reduction in heart rate of 4-6 seconds. TV includes this reflex is much faster than it does in real life, and that is why we sometimes cannot take our eyes off the screen even during an intimate conversation or watch TV much longer than planned. Typical music videos, action sequences and commercials actuated orientation reflexes at a rate of one per second, viewing those makes us continuously orienting reflex without pauses for recovery. [4:207]

Computers play an increasingly important role in society as a whole, and in a teenager's life, more and more influence on the life and development of adolescents. Computer games have a negative impact on its growth and development as a child and man.

Because of the great changes taking place in the body and psyche of a teenager, his mind very often not strong despair and depression because of the problems, new concerns and difficulties in learning or to communicate with their peers. A desire to "rest" from the real world and move to another, in which he will not have any problems or concerns, all that is necessary is executed by pressing one button and you become a superhero. Thus, the teenager immediately “solves” 2 of their problems: running away from their new problems and increases their self-esteem, feeling like a superhero in a computer game.

A team from the Hammersmith Hospital in London has developed a typical video game in which a tank commander shoots enemies and dodges enemy fire. The experiment showed that during these games in the brain of the player is going a dopamine – the neurotransmitter awards granted which provoke and drugs that develop an addictive habit. People addicted to computer games have all this signs of addiction: strong desire to play, when the game is terminated; neglect of other activities; euphoria during the game; and a tendency to deny that they are in addiction. [4:207]

But in modern computer games becomes 'normal' that the characters can freely exercise hardness for others: murder, violence and bullying. All this causes the adolescent storm divergent emotions and feeling that you can do anything, and no one will not be punished for it. This gives impetus to the children to repetition this behavior in real life, the expression of irritation, aggression and disrespect for the family and people around: classmates, teachers, parents, etc.

Head of the Children's Club "Computer" Shlimovich B.M. came to the conclusion that the guys, enthusiastic playing the computer games, impoverished vocabulary, communication skills deteriorate, children cannot give a verbal description of a phenomenon or process. [6]

All this makes the modern man, and especially the younger generation addicted to all this from a physical and psychological point of view, and also bring up to the intellectual degradation.

But the mankind was not created to watch TV, play computer games, eat and infinitely more slowly kill themselves by eating useless ("flavorings" various food additives, flavor enhancers, colors, etc.), and sometimes even harmful (alcohol, tobacco, etc.).

For example, René Descartes, one of the major thinkers of modern times, believed that God created the human mind to that served as a "natural light" that can illuminate all corners of the universe and discover all its laws.

And what modern science says about human capabilities?

"The brain of any man has about a trillion (1 000 000 000 000) cells. Each brain cell (neuron) contains a microprocessor and multicomponent electrochemical transmission system, which, despite its complexity, is able to fit on the tip of the needle. [5:28]

... When neuron excites an electric signal, transmission takes place of chemical agents from one neuron to another via a small fluid-filled space between them. Each neuron is able to take hundreds of thousands pulses from other neurons every second. [5:29]

Potential memory ... Thanks to the work of the Parisian scholar Dr. Mark Rosenzweig learned that even if the brain is nourished with 10 units of information (where each unit is a single word or image) per second for 100 years, would have been filled with less than one tenth of the total volume memory (less than 10%).

There was hitherto a man capable of the full potential of his own brain. On this endless possibilities of the human brain and we need in the first place to teach ourselves to effective use of them, and then to teach the younger generation!

To achieve this goal it is necessary to reform the modern education system.

Education can be divided into two types:

- Information and coding, which aims to transfer the sum of some trainee's knowledge and skills ready to use;
- Methodological, to develop a culture of thinking and perception of the world and the ability to self-generate new knowledge and skills, as well as to the development of self-knowledge and skills previously developed by others. [8:107]

Montaigne in his "Experience" wrote: Mind that well-arranged, it is better than a well-filled.

This is a very precise and short thought which must be adopted in the reform of the educational system. We must reform our single state system of continuous training, covering all age groups, especially in infancy, as at this age lay down the foundations of personality. Therefore, in kindergartens should work most highly qualified and best specialists. This system should be to educate and bring up human-creator rather than a human user.

In circumstances where the amount of accumulated human knowledge is growing and doubling every year, it is necessary from the very first years of teaching the pupils to develop the skills of effective learning and most importantly – self-learning. It is impossible to make a person, a fortiori a child to do anything if he does not want or is not aware for what is to be done. There is only one the kind method to make a man to do anything and is to make it so that he wanted to do it.

Life example. Father explained to her child, who "studied" only when he was forced to learn, that he had to study only for himself and that education is necessary only to him. After that, the child no longer forced to make do homework, teach poetry, etc. He stubbornly and self-started, and when he could not understand something he asked for help from their parents!

Otto von Bismarck insisted: "War is not the generals win, win the war, school teachers and parish priests" – i.e. the people who are busy at forming personalities in the new generations. Winston Churchill held similar views: "*The Schoolmaster belongs the dominion of which the Prime Minister can only dream of.*" [8:107]

But even more power than the power of the teacher belongs to the parents. First of all, it is in the family, by the meaningfully efforts of parents in early childhood form the basis upon which then teachers will continue to build and develop the child.

Our President Islam Karimov said: "*Family life it is a symbol of eternity.*" [1]

It is therefore important that parents are to be involved in the process of education and upbringing of their child, not only as a controller, but also as an assistant and a teacher.

If we look at our history, culture and the moral foundations of what we can find a striking confirmation of this. For example, the Prophet Muhammad 1400 years ago said: "*The most important and the best gift that can give parent to his child are a good upbringing and education.*"

Our President Islam Karimov say: "*We have to educate our children's aimed at such important tasks as ensuring the prosperity of the motherland, peace in the country, the people's welfare, to lead them towards these goals.*" [2:173]

Also from the past achievements of our ancestors, we can see that the spiritual and moral strength of only one person could decide the outcome of the battle and to protect their people and their homeland against aggressors. All known

exploits on the way to protect the homeland of such personalities as Chirac, Tomiris, Djalaleddin Manguberdi and Amir Temur, etc.

This tells us that the education of the younger generation must first be given a lot of attention to their spiritual and moral education. After all, the spiritual and moral healthy generation can protect their homeland and make a huge contribution to its development and prosperity.

Abdullah Avloniy wrote: "Education (of the younger generation) for us is a matter of life or death, salvation or destruction, prosperity or decline.

For the protection of our children and adolescents from the negative influence of popular culture and the globalization processes, it is necessary at an early age to instill in them a love and respect for our culture and history, to create conditions for learning various crafts and traditions of our people.

Also in the early grades in school must teach our children in conjunction with the universal values of peace, justice and goodness, to inculcate in them the basics of Islamic spirituality, morality and ethics. So we can solve two problems at once:

1. Countering the negative influence of popular culture and globalization processes on children and adolescents
2. Responses to the introduction and planting in the fledgling teenage consciousness alien to our culture and society religious views and ideas!

The importance of this claims our President Islam Karimov "On the issue of protecting the younger generation from the invasion of alien ideas need to define two organically related to each other destinations. One of these areas is based on centuries-old traditions of our people, its customs and language, religion, spirituality, employees today our national development, in a word, his vision and thinking. The second – the reliance on human values and progress". [2:174]

George. Orwell in his work "The Year 1984" wrote: "Who controls the past controls the future, and who controls the present, is sovereign over the past."



Thus, we must have full control on our present and to solve the problems outlined above we must:

1. Instead of TV and radio channels broadcasting around the clock for the most part useless and not enlightening pop music, movies and TV series we need to create high-quality multimedia product (television and radio channel, educational magazine for young people, such as Technology of Youth) it is aimed at raising the younger generation healthy and harmoniously developed in all respects.

2. It is necessary to carry out organized and targeted seminars and meetings masters of their craft in various fields of modern human life (engineers, doctors, managers, athletes, etc.), so they told them about their profession, life and work experience. As a result, young people will be able to see the representatives of various professions and to begin to determine their future path in life. They will be motivated to master a particular profession that they like, and then no different computer games or popular culture will not be able to lure them and make their slaves.

At this time and again pointed our President Islam Karimov: *"Do not be worthy subjects for books, movies, life and work of many of our compatriots who are gaining credibility with their knowledge, the results achieved in the most famous universities of the world, dozens of our sons and daughters .... Because the example of the life and activities, achievements of people clearly demonstrate the presence of our great features, what heights we can achieve"*. [2:191-192]

3. It is necessary to equip all schools with modern teaching methods and the necessary equipment for effective student learning. And also to provide students with modern IT tools for self-education, e-book reader for example. Turkey has provided a modern tablet of their students in the amount of \$ 10.6 million. [7] Our children are worse? As our President Islam Karimov say: *"Our children have never been poorer (less affluent) and the other will never be poor (less well)!"* [1:55]

Since adolescence boys tend to quickly become a "real man" and seek to imitate the adult males in the first place they need to form an image of the real man, is necessary for the culture of our people and society, ie, honest, courageous, responsible, intelligent and strong in all respects defender of the motherland without bad habits and abnormal addictions. How to achieve this?

Instead of the competition on skill to playing computer games create specialized training games? For example, instead of racing computer games without rules and survival training game on traffic rules and driving skills of different types of vehicles in the same interactive and entertaining fashion as in those games. Instead of computer games in which the characters are trying to kill each other, or tell a friend, you must create a game for the development of adolescent boys as future military service officials and defenders of the Motherland, ie in the same manner fun to teach them the basics of military service, the skills of defense against potential enemy and the strategic and tactical thinking on the battlefield!

It should be based on a specific part of computer clubs (internet cafe) to create specialized training centers for teenagers on computer literacy and programming, as teens have the desire to computers in the classroom and in the school in 45 minutes sessions they can not catch all the necessary training material. To accomplish this, in addition to government regulations, it will be necessary entrepreneurial responsibility and the will of the business community, as well as demand from parents.

To implement these solutions to the problem will need to throw all the power (economic, political, and scientific) of our people, to collect the most professional managers, IT professionals, psychologists and teachers! All this will be very very expensive for the state budget. But I think you can save on not very important ways. For example, in the financing of the football team, from the victories which our children smarter, stronger and healthier will not!

Islam Karimov: *"Everyone who wants to see our country prosperous tomorrow, to see the fruits of the present tense and difficult work, happiness and well-being of their children, no matter who he is, what position is held not to be away from this problem. Today, no one has the right to be indifferent and apathetic to this matter of great importance "*. [2:242]

### **Conclusion**

In conclusion I want to protsetirovat instructive parable. One frog thrown into boiling water, and she immediately jumped out. When it is dropped into cold water, it stayed there, and the frog was very comfortable there. Water slowly began to warm up, as the heat she felt comfortable in warm water and relaxed to the point that she was unable to understand that it is necessary to jump out of the water and simply boiled.

"Time is money" – wrote Benjamin Franklin. In today's world, time is a matter of life and death. Returning to the parable of the frog, I want to add that we are in the matter of upbringing and education of the younger generation must act quickly and consistently, so as not to be in the same situation.

*"Our next goal is to force the general public, intellectuals, scientists and artists, especially workers spiritual and educational sphere, for new levels of activities aimed at improving and approval of the basic principles of national independence ideology in people's minds".*

**I.A. Karimov**

### **REFERENCE:**

1. Karimov I.A.: Our path - the deepening of democratic reforms and consistent continuation of the country's modernization.
2. Karimov I.A.: For the prosperity of the country – all of us in the response. – Tashkent, 2001. – 399 p.
3. Ilya Nosyrev: Twilight brains.  
<http://www.rbcdaily.ru/magazine/trends/562949988486189#>
4. Doydzh Norman - Brain Plasticity (Brainstorm) – M: Product, 2010.

5. T. and B. Buzan Supermyshlenie / Trans. from English. EA Samsonov; Mn .: LLC "Potpourri", 2003.

6. Shlimovich B. Computer and children // Science and zhizn. – 1998. - № 11- P.12.

7. Article: Students Turkey will buy tablets on open source software. Author: Love Kasyanov.

<http://www.cnews.ru/news/top/?2013/04/08/525136>

8. Efimov V.A. Course of the Aquarian age. Apocalypse or renaissance. - SPb .: "Vess", 2011.

9. Article: Impact of ICT to human.

<http://www.pravda.ru/society/family/pbringing/11-09-2012/1127671-agressia-1/>

## EDUCATIONAL SITES ARE MODERN LEARNING TOOLS

*O.Mamarasulova, F. Safarova*

*Summary.* The article considers educational sites; openness of education; access to education; visibility of education.

*Key words:* “educational sites”, openness, accessibility, visibility, instructiveness.

From the first steps of independence of the Republic of Uzbekistan great importance is given to ensure the constitutional rights of citizens to education, the further development of educational structures, the coverage of all forms of education and training. This deals with both the system of all areas of information and subjects of education.

Education as the most important sphere of human activity, which provides the formation of intellectual potential of society, is nowadays in a very difficult position all over the world. In other words, the amount of knowledge which is necessary to man increases as they are updated more quickly, and the period of

time for training people (from primary to tertiary) remains virtually unchanged. Since the appearance of the Internet the speed of exchanging information and access to the global network has increased by several times. Nowadays the Internet is a powerful information and communication technology, which influences the development of society and the world in this area including a growing number of users.

"Educational Site is an interactive and creative system that enables to manage the pedagogical process of the institution, to attract teacher's pupils and parents to work creatively in the development of the site, and serves as an educational resource in terms of getting information and materials from the point of distance learning. Educational site is a new technological tool that encourages the creative activity of those who acts as the subject of activity. Educational Site is the modern mean of interaction between the schools with the world, reflecting the educational process. In turn, educational website is a virtual tool of communication between members of the educational process.

Modern educational site must adhere to following criteria's, which assists allows to inform the visitor about the educational institution as much as possible:

- be as informative as possible;
- Have a clearly stated logical structure of the site;
- have a respectable appearance;
- be interactive;
- be renewed frequently.

Educational website allows supporting openness, accessibility and visibility of education. Openness of education can be achieved with the placement of the following materials to the site:

- curriculum
- authoring works of teacher,
- some didactic materials,
- creative works of students,

- information about the using educational and methodological complex,
- additional information (work plans, competitions, events)

Access to education consists of to the placement the following materials:

- training materials that students can use at any time;
- links to educational portals, to search for additional information
- preparation of reports or essays on the subject,
- conducted research or project work,
- working off of acquired skills,
- preparation for testing and diagnostic works;
- homework;
- contact details of teachers (such as the telephone number, e-mail or other means of communication)

Visibility of education is important to provide online visual training aids (charts, graphs, drawings) and photos (with lessons, extracurricular activities).

#### **REFERENCES:**

4. Attewell, J., Mobile technologies and learning, Learning and Skills Development Agency, 2005, United Kingdom.
5. [www.ifets.ieee.org/russian/depository/v14\\_i1/html/1.htm](http://www.ifets.ieee.org/russian/depository/v14_i1/html/1.htm)

### **THE ROLE OF TUTORS AS A FUNDAMENTAL COMPONENT OF ONLINE LEARNING SUPPORT**

*U.Mamatov, F. Safarova*

*Summary.* Three roles for the online tutor, the tutor as subject expert, the tutor as coach, the tutor as assessor.

*Key words:* online tutor, subject expert, coach, assessor, referring, presenting, demonstrating, contributing.

There are many potential roles for the tutor and many ways of describing them, but here's three of the most important:

The tutor as subject expert. One of the roles for the tutor is to supplement self-study materials - filling in any gaps, clarifying any misunderstandings and pointing learners to sources of information.

The tutor as coach. The second main role is to act as coach, mentor or counsellor. These terms may have unique definitions but they also have a lot in common. The coach is responsible for helping the learner to achieve their learning goals by challenging, encouraging and providing constructive feedback.

The tutor as assessor. In many cases the tutor also has to act as assessor, checking to ensure that learners have achieved the learning objectives.

Let's take a closer look at each of these roles and their associated skill-sets.

The tutor as subject expert. In many situations the tutor will be asked to function as a subject expert, sometimes acting as the primary source of content but, more likely, supplementing and acting as a backup to content that is presented elsewhere.

This role is not dissimilar to the traditional teacher, lecturer or instructor, but what exactly does it entail? These are the principal behaviour you would expect of the subject expert:

#### Presenting

With many online courses, the majority of content is presented in the form of self-study materials. The subject expert may well have had a role in the preparation of these, perhaps even as presenter of any audio or video materials.

In other cases, the subject expert may need to present information in a synchronous, real-time environment. This could range from a text chat through to broadcast videoconferencing.

#### Demonstrating

With certain types of skills, whether cognitive or psychomotor, the subject expert may be required to provide a demonstration. This may be available as a resource

for self-study or as part of a live event. Of course, psychomotor skills will not be easy to demonstrate without video.

### Referring

There is a great danger that learners will become dependent on a subject expert, if every question they ask is answered in detail. To avoid this, the subject matter should, where possible, refer learners to available resources, whether within the learning materials, or in books or web sites. Spoon feeding simply makes the subject expert a reference tool for lazy learners.

### Contributing

The subject expert will have a key role to play in contributing to knowledge bases, FAQs and other reference tools for learners. They are also going to be valid contributors to discussion forums or chat sessions, although never in a dominant capacity.

The tutor as coach. There will be many times when the tutor will need to act as a coach, helping to facilitate learning rather than presenting content directly. This role is especially important in an online environment where learners may be working for long periods on their own initiative.

These are the principal behaviour you would expect of the online coach:

### Questioning

Questioning is a vital skill for the coach to possess. By asking the right questions, the coach will stimulate learners to think for themselves, leading to more powerful insights than could ever be obtained with more didactic methods.

### Listening

Listening goes hand in hand with questioning. Without the ability to listen - and in an online context that's just as likely to mean reading - the coach will never properly understand the learner's position or needs, and frustrate them into the bargain.



Feeding back. Having read or observed the learner's work, it is the duty of the coach to provide the learner with honest, constructive feedback, based on specifics rather than opinion and balanced towards the positive.

#### Encouraging

Many learners will find it hard to summon the self-discipline required to study on their own. The coach can help enormously by providing encouragement to learners to keep at it.

#### Motivating

Motivation comes when learners are set challenging but achievable goals, which, when achieved, lead to outcomes that the learner regards as attractive. It is up to the coach to know just how challenging the goals should be for an individual learner and the types of outcomes that will provide the right incentive.

For most learners, recognition will be the most powerful incentive - and luckily this costs absolutely nothing. Other learners will be motivated by achieving a pass, overcoming a perceived weakness, stimulating their intellect or developing their skills.

#### Controlling

It sounds like a strange behaviour for a coach, but online group work, whether asynchronous or synchronous, may, upon occasions, require a degree of control. Although learners will ideally be able to manage their own learning experiences, at times the coach will have to exercise some control to keep them on track.

The tutor as assessor . With some online courses, assessment is integral to the self-study materials and no 'human' intervention is necessary. In other cases this may be neither possible nor desirable and the tutor will be required to conduct an assessment of the nature and extent of the learner's knowledge and skills.

There are, of course, many different forms of assessment in which the tutor may get involved:

- marking written assignments submitted as email attachments
- assessing responses made to questions in chat sessions

- assessing practical assignments
- assessing practical exercises carried out using audio (which may well be necessary for subjects such as language learning, telephone skills, etc.)
- assessing practical exercises, such as role plays or presentations, carried out using video

In these situations, you would expect the following principal behaviours from the online assessor:

- monitoring the learner's behaviour throughout the course
- questioning the learner, in chat sessions or using email
- judging a learner's submissions
- controlling to ensure that the assessment is conducted fairly

#### **REFERENCES:**

1. Anderson, B. (2006). Writing power into online discussion. *Computers & Composition*, 23: 108-124.
4. Anderson, T. (Ed). (2004). *The theory and practice of online learning*. Edmonton, AB: AU Press.
5. Arbaugh, J. B. & Benbunan-Finch, R. (2006). An investigation of epistemological and social dimensions of teaching in online learning environments. *Academy of Management Learning & Education*. 5(4), 435-447.  
<http://www.fastrak-consulting.co.uk/tactix/Features/tutoring/tutoring.htm>  
<http://ascilite.org.au/conferences/sydney10/procs/Herrington-concise.pdf>

#### **INSTANT ADAPTIVE FEEDBACK**

*S. Usanov, F. Safarova*

*Summary. The meaning of the term “adaptive learning», adaptive learning path, adapting content.*

**Key words:** “*adaptive learning*”, *informative, intervention, adaptive learning, content, adaptive e-learning systems.*

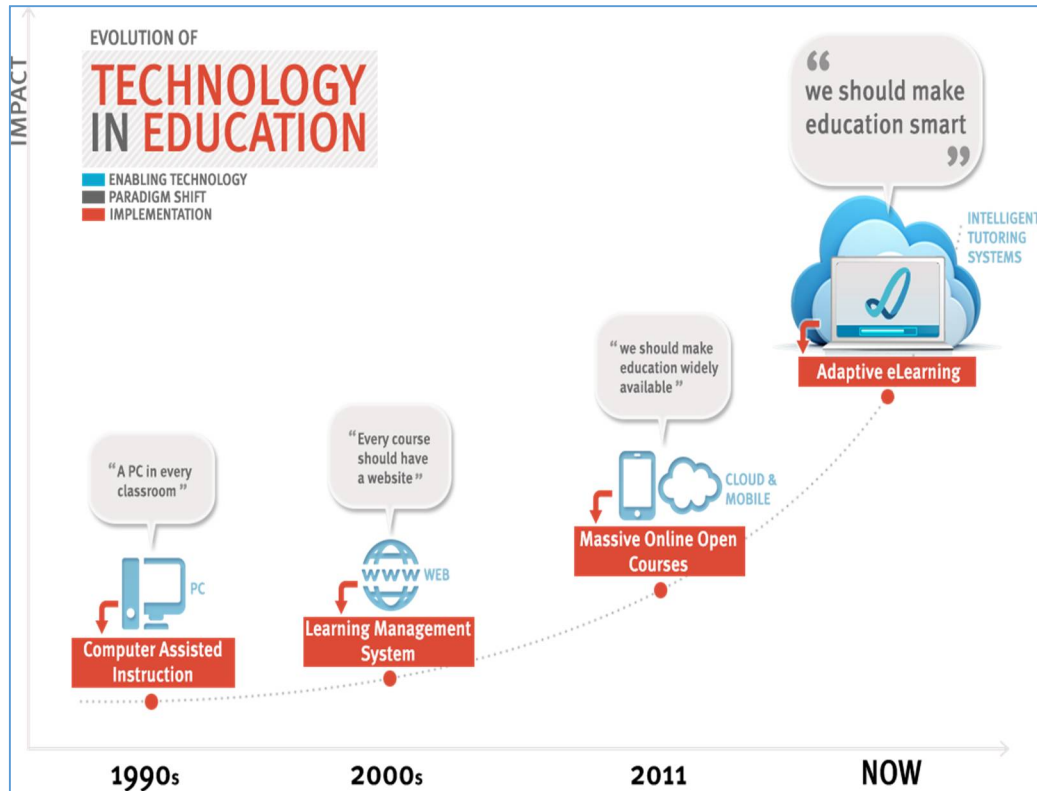
Students make mistakes: they forget what was said in the lecture, they confuse terms, they use the wrong formula. When this happens teachers provide feedback to students as they learn in order address a misconception. Adaptive eLearning systems allow teachers to do the same by providing instant intelligent feedback exactly when it is needed. Feedback can come in two forms:

- Informative – text, images or videos that appear based on a student’s interaction, which is aimed to guide them to the correct answer or offer additional information in order to formalise a specific learning objective. For example, after recognising a common misconception based on a student’s response to a question, feedback from lecture notes can be shown to the student to refresh their understanding of the concept being assessed.
- Intervention – stepping in to actively help a student if they are struggling with a particular concept. For example, show a student the correct response after too many incorrect attempts, or dynamically set the state of a simulation, like calibrating an apparatus in a Virtual Lab, to indicate the next step towards the solution.

#### ADAPTIVE LEARNING PATHS

Students learn at varying rates, with different levels of knowledge, and with different misunderstandings. Teachers need to cater to the individual student. For example, if a student already knows what they are doing they should dynamically skip ahead to a more challenging task, or if a student is struggling and missing some required knowledge then they should be dynamically directed to some extra resources to help them understand that particular concept.

Adaptive eLearning systems dynamically serve educational content to students based on rules that the teacher controls so that each student gets a customized learning path based on their demonstrated understanding to a set of questions.



## ADAPTING CONTENT

A good teacher adapts their teaching to their students. Every time a lecture is given, it's an improved version based on past experience teaching that subject. Teachers regularly adapt homework and assignments based on their students' performance. It's all about continually learning how to teach better.

But once teachers are using technology, changing online educational content often involves the need to work with programmers, designers, and complex software systems. A truly Adaptive eLearning system has analytics tools that allow teachers to understand their students' learning and then modify their online lessons accordingly using authoring tools. This empowers teachers with the ability to easily and continuously improve their content and teaching.

# NEW METHODS FOR TEACHING PROGRAMMING LANGUAGES TO BOTH ENGINEERING AND COMPUTER SCIENCE STUDENTS

*N. Sattorova, F. Safarova*

**Summary:** *The article considers the teaching programming languages, reading before writing, the progression.*

**Key words:** *programming languages, new computer technologies, quantities methods.*

The basic idea is first to focus or specialize programming course sections for student interest groups. For example, we have an Introductory Java course for science and engineering students, which employs classroom examples, exercises, and teamwork labs that deal with math, engineering, and science applications and coordinate these with the classes they are taking in those majors. We have designed and are now teaching an Advanced Java course that will be focused on preparation for the SUN Microsystems' Java Developer Certification test. The approach, while new in our Computer Science curriculum will be modeled after current efforts to prepare Math Seniors to take the Actuarial Exam, or Engineering Seniors to take the Engineer-in-Training exam.

The second change in methodology is to first teach student at both levels new material by first reading programs rather than writing them. For years we have been teaching students a bit of syntax and then asking them to write a program, but even those who are able to learn by this "sink or swim" approach rarely end up able to read a program they have not written. We ask students to start each exercise with a blank piece of paper (or PDE screen) but there is nothing in real-world programming practice like that. A programmer, whether novice or experienced, usually begins with a working program or a piece of one and modifies or augments it to get the desired or specified result. Moreover, in many cases that prototype program has been automatically generated and may employ techniques unfamiliar

to the developer. The new approach described here was developed by the author to use the same methods for teaching an artificial language one would use to teach a natural language. Introduction

In the Quantitative Methods and Computer Science Department at St. Thomas University we have chosen Java as the primary medium of programming language instruction. While most of our students are taking programming as a major or minor subject, we also have sections in Introductory Java each term as service courses for Science, Engineering, Math, Business, and Education majors. Although the same textbook is used, the lab sessions focus on problems drawn from student's major disciplines in an effort to overlap their labs and class projects in their major classes. Business application development in COBOL is also taught as a service course for the Business School and for Computer Science students who wish to learn a language besides Java. There is now increasing demand to teach the C language for electrical engineering majors since it is holding on as a language for programming embedded computers in spite of increasing interest in MicroJava.

#### Teaching Programming Languages

This was before compiler languages had become widely used so the languages we employed were interpretative languages, like Mandy Grams' BACAIC (Boeing Airplane Company Algebraic Interpretive Compiler), SPUR, a Boeing interpreter for the IBM 650, as well as specialized Floating Point and Double Precision Floating Point interpretive languages, Matrix interpretative languages, and so on. When we replaced the IBM 701 with a 709, we started using Fortran but the powerful matrix interpretative languages continued in use for some years. Like many industrial firms at that time, efforts were made to retrain draftsmen, time and motion study people, engineers of various kinds, account clerks, etc. to supplement the shortage of programmers. The IBM programmer capability test predicted that people with musical ability would make good programmers and this seemed to be the case, however my experience at the time indicated the chemical engineers always excelled. Perhaps it was their pilot plant

training that made computing technology especially accessible to them, i.e., first building and testing a model of a process before committing to it. It seemed to me that everyone who really wanted to learn to program was able to do it and those that were not so strongly motivated were not. As computers have permeated technology and our technology-based society generally more and more people need to know how to program to at least some degree, not just the “heat-seekers.”

Twenty years ago many students showed up as college freshmen with some knowledge of Basic language programming, often learned in junior high school. However, while today I occasionally find a student who has taken a C++ course in high school, most have no knowledge of programming at all. My current Introductory Java class of twenty students is all totally innocent of computer programming. This is not to say that they do not know how to use a computer; they type papers in Word, use Excel in accounting classes, prepare classroom presentation in PowerPoint, and of course many are skilled computer game players. There is an interesting difference between teaching C, C++, Java and the older mainframe procedural languages like Fortran, COBOL, and Algol. How could McCracken teach Algol in 100 pages, or Fortran in some 140, or COBOL, which had a lot of detail, in less than 200, and yet the Sun Java Tutorial series is three 950 page volumes and continually refers to the online Sun JavaDoc files?

I think there are two reasons, one of which is a consequence of the other. Today’s OOP languages are rather abstract and procedural languages were relatively concrete; consequently it takes a lot more working examples to communicate the former than it did the latter. In addition, the users of early programming languages had problems they wanted to solve on a computer; today’s students want to learn how to program a computer, not just how to solve a given problem or problems. This is a subtle but significant difference in learner motivation.

Reading Before Writing

The instructional approach is simple. For the past two years I have been teaching introductory Java and COBOL classes to students by first teaching them to read the language before teaching them to write programs in it. The approach seems to encourage beginners and promotes classroom involvement and retention. It certainly avoids the panic of looking at a blank piece of paper (or today, a Notepad or PDE screen). I call this panic the Red Barber syndrome after the famous baseball sportswriter/sportscaster. He used to tell the story on himself of the twelve-year-old lad who approached him leaving a game and asked: “Gee, Mr. Barber, I want to be a sports writer just like you when I grow up; is it hard work?” To which Red replied: “No kid, there isn’t anything to it. You just go to one or two baseball games every day during the season, take notes, eat hot dogs and drink Coke, and then go back to your office, sit down at your desk, put a blank piece of paper in your typewriter, and, and, and ... stare at it until drops of blood appear on your forehead.”

Moreover, there is very little in professional programming practice that resembles starting with a blank screen for each job assignment or “new” program. Most programmers, and certainly most novice programmers, are usually given a working program to either document or change to make it do something additional, something differently, or something else altogether. Our approach begins each class with lectures out of the textbook, but paying special attention to explaining how the example programs work. In addition we bring them up in the TextPad PDE, execute them and then ask the class what changes they would like to see made. Sometimes introductory programming students can be very shy (for fear there is a computer heat-seeker or guru in the classroom), so we usually have a short list of proven mods to try out. The instructor making errors in front of the class while doing these mods is not a problem, in fact it enhances the reality of the computer programming learning experience for the students.

After about two weeks, or four lecture periods of 65 minutes and three labs of 100 minutes (which are used for demonstrations at first), we assign an in-class



problem that is a working program. For this first lab assignment we ask the students to key in and run. The lab exercise is (a) to write a comment on each line telling what that line is doing, and to write a JavaDoc style summary of what the program as a whole is doing. A popular first exercise is to print out the first 20 Fibonacci numbers. Most the fourth lab session is spent dealing with the program development environment and explaining why the world's newest and most sophisticated language and the sophisticated three window CAD development environment put out their results in a DOS window! Students always seem to be disappointed at this. The second part of the lab for the more aggressive students is to printout the first 40 Fibonacci numbers. This is of course a trick problem, since the numbers get larger and larger with each addition so the second twenty will not fit on a second line. About half the class is stunned by this development and doesn't get past it in the first lab session. Some become a bit more creative by making lemonade out of this lemon, this term I had three of the 20 students figure out how to printout the series as a single column, arguing that since each number was the sum of the two above it that was a better presentation of the results. And, there is usually at least one true heat- seeker in each class; in this class that student printed out the first 40 numbers neatly arrayed in five columns. He had figured out how to use the \t or tab string-break command.

### The Progression

The progression of lab exercises leads the student through the syntax of the language in such a way that he or she sees recommended use of each language feature and its effects before being asked to employ it. The exercises are taken from the textbook, which in this case is Java Software Solutions Third Edition, by John Lewis, and William Loftus (Boston: Addison-Wesley, 2003). Since the Introductory Java section I teach is entitled Development of Scientific and Engineering Applications in Java, many simple applications from mechanical and electrical engineering are used as supplementary classroom and laboratory examples as well. The progression of labs goes as follows:

1. Document the Fibonacci number calculation for the first 20 numbers in the series.
2. Extend the Fibonacci calculation to print the first 40 numbers based on a textbook model.
3. A series of labs involving modifying the drivers as above (2), followed by a series requiring the substitution of new methods in already well-understood drivers.
4. A documentation exercise on a relatively advanced instructor furnished program that illustrates most of the methods in the Java Array class.
5. Modifying a Sieve of Eratosthenes program that involves parallel one-dimensional arrays.
6. A lab involving sorting arrays.
7. A series involving the use of two-dimensional arrays to do matrix calculations.
8. A documentation exercise on a program to do the Gauss-Seidel method for solving  $n$ -linear equations in  $n$ -unknowns.
9. The textbook has a nice example of a Java program to solve the quadratic equation. We lead the class through the creation of an abstract data type Complex Double and a set of methods to do complex double precision arithmetic.
10. At this point we turn them loose to extend the textbook program to solve quadratic equations having complex roots.
11. Those (about half of the class) who finish this lab early are put into two or three person groups to convert their application to a Java applet. This seems to be the most popular lab exercise in the series. The half of the class that doesn't get that far in class begs to be allowed do this step in groups as "homework." This request is always granted.
12. At this point we encourage the class to form small groups, and turn them loose on clearly specified lab exercises to augment certain textbook programs with

both overloaded and overridden methods. In each case they begin with a working program.

13. The first “blank screen” exercise is the time-honored C++ textbook-programming example (but in Java, of course), i.e., a program to create 52 objects as a deck of cards and write a method to deal a hand of three cards. The two or three teams in the class who are able to finish this early are encouraged to write a driver to deal four bridge hands, and/or write a pseudo code for a driver to use their new class and its methods to play some card game they are familiar with.

14. The last lab is on recursive programming and employs the time-honored Ackerman Function, a simple but non-primitive recursive function with two integer arguments. They begin with a working program but are challenged to turn it into a non-recursive program that computes Ackerman’s Function iteratively and to compare the efficiency of the two approaches.

How Do We Test?

The first mid-term exam is almost all about Java, i.e., they are asked question about the language and its syntax, asked to write down what furnished Java snippets will output, to modify a few simple methods, and to rewrite for loops as while loops, as do loops, etc., and to document a program using Uniform Modeling Language (UML), but finally to write two methods, one to sum 100 integers, and a Boolean method named float Equals that accepts three floating point numbers and tests to see if the first two are equal within the tolerance of the third. Only about half of the class can do this reliably at this point.

The second mid-term exam is a conventional write a program to do this sort of exam and the students typically are as good as or better than the traditional sections with a blank screen by this point. The final exam is a two-hour test that qualifies the student to take the departments Advanced Java class. We do not have experience on whether these students do better in Advanced Java because most of them are taking Introductory Java to meet a science, engineering, or mathematics major requirement and do not go further. We also require a final project in addition

to the final exam and encourage the students to write a Java program that supports a lab project in a major class.

Performance and grading are competency-based and everyone achieving a certain competency level get an A, a second level a B, the third level a C, etc. The grades run high with half or more of the class getting As, most of the others getting Bs and one or two Cs. I cannot answer the charge that since my students are science, engineering, and math majors, they are often considered to be more disciplined and career-directed than other students, then of course they do well and would probably do well no matter what I did in the classroom. My answer to this charge is that while it is true they are science and engineering majors they are freshman and many of them do change majors in their sophomore year. Of course, I can claim only two years' experience with this teaching approach, and sighting only two robins doesn't declare it Spring. In two years, however we have used it on two Introductory Java sections, three Introductory COBOL sections and are currently using it in an Advanced Java section.

Does it Work?

I claim that students who learn Java this way learn to program faster and with less frustration than thumbing through a textbook trying to figure out arcane syntax and run-time error diagnostics. The QMCS department at St. Thomas University asks each instructor to turn in copies of the penultimate lab program in each section to be evaluated by an instructor who is not teaching a Java section in the current term. Classes learning this way have excelled in these evaluations. To me however, a more important measure is the dropout rate. In these read before writing section the dropout rate has been one in twenty both years compared to much higher dropout rates in other classes. At the University of Minnesota years ago, I helped Professors Cecil Woods of the German Department and Russell Burris from Educational Psychology with a computer-based introductory German (syntax) course. In defending this approach before the House Higher Education Appropriations Committee I had to admit that while the examination results did not

show the students from the computer-based sections to do significantly better statistically in the final exam, our experience over five years was that the traditional 20% dropout rate in beginning language courses went to none or at most 1 out of 20 in these sections. We are seeing the same result in Introductory Java.

The method works as well in introductory COBOL classes for both computer science students who have already taken Java and for business majors who have no programming experience at all. Naturally we teach COBOL as a dialect of the English language, which it was designed to be. Our original motivation for this was the assumption that no (or at least very few) new COBOL programs are being written today but that many millions of lines of COBOL are being maintained and/or being converted to Java. Perhaps 80% or more of the enterprise computing programs running today are written in COBOL and many of those (e.g., Hogan banking software) will be running 20 years hence. In this class we can give the students significant example programs to analyze, document, modify and develop skill as a reader of COBOL before they begin to write COBOL programs.

My Advanced Java section this term is an evening mostly adult class of mostly professional programmers or engineers who need to learn Java. They are all interested in sitting for the SUN Microsystems' Java Programmer Certification exam after the class and we are supporting this goal with a reading before writing approach that seems to be particularly suited to the exam, which presents code snippets and asks the taker: "Will this code compile? If not, why not? If it compiles will it run to completion? If it does, what will the program print out?" All having multiple-choice answers, of course. The success of the teaching approach will depend on how many of the class of 16 are emboldened to sit for the exam, and how many of those who do so, actually pass it on the first try.