

E-Government: Shaping Marketing Decisions, Motives for Sponsoring E-Learning, Security and Development

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Abstract

This article is devoted to analysis and estimation of opportunities of information technologies in formation of marketing decisions. The role of information technologies in marketing activity of the companies is considered. The information systems are classified and the features of each system are described. Advantages of using information technologies in marketing and some recommendation about rise efficacy of inculcation of information technologies in marketing activity of home-grown enterprises are shown. The history of distance learning which providing an opportunity to study in any level not depending on the leaving place or job, age and others are considered in this work. The situation of e-learning in the world, especially in developed countries has been analyzed. The situation in Uzbekistan of distance education and e-learning was considered. The measures of the government and institutions, educational organizations, showed the results of the first experience in the e-learning field were analyzed.

Also the importance of e-learning and the main reasons to subsidize it is regarded in the article. The role of teachers, geographical eases and time saving in e-learning are described. Selling e-learning in an international market and its consequences are concerned as well in the article. We also focus on employment of honey pots for e-Government security, providing implementation architecture for it and lastly discussing its advantages.

1. Introduction

Nowadays we are living in the society where the information, knowledge and the technologies of gathering, keeping, processing them and also technologies of sharing, transferring are very important. For now traditional learning is not effective in the world. So, the modern society introducing the new technology, new environment of learning which we call in different way distance learning, e-learning, LMS and others. In the developed countries such as USA, Canada, England and Australia 70 % of learning is e-learning. It's confirming the effectiveness of new technology that uses virtual learning environment. A virtual learning environment (VLE) is a system that creates an environment designed to facilitate teachers in the management of educational courses for their students, especially a system using computer hardware and software, which involves distance learning.

Today, management of the domestic companies realized importance and need of the embedding the significant facilities in information-communication technologies sphere, seen in this main source and priority of the successful advancement to its companies on the market. Information technologies all over the world become the catalyst of the development society as a whole. Digital technology and global network Internet become main instrument developments mankind in XXI age.

The development of information and computer technology qualitative changes the nature to marketing activity of the company. In this connection it is appeared the notion of virtual marketing, under which imply the system of the knowledge about offer of the communication services on the market on base information technology, integrating marketing activity in internal and external ambience of the enterprise.

The organizations of the different types and spheres to activity possible to present as business - system, in which economic facility by means of different organizing-technical and social processes are converted in goods and facilities. In process of activity any business - system on it affects the factors external and internal ambience, which basically are from acceptance that or other marketing decision. The process of the taking the marketing decisions is considered main type to marketing activity, as collection interconnected, goal-directed and consequent management action, providing realization of the marketing problems.

The purpose and nature to marketing activity to organizations define its information system and automation to information technology, as well as type processed and produced information product, on base which is taken the optimum marketing decision.

The main function to marketing activity domestic enterprise is an analysis situation in companies and external ambience and decision making on strategic and short-term planning to its activity. Today, the information systems help to create and spread the knowledge and information in organizations through new systems of the functioning the knowledge, exhibits, providing companies access to data and system communication, linking enterprises on the whole world. The organizations now vitally hang from systems and cannot outlive even casual their damage. The organizations create the information systems to become more efficient and save the money. The information systems can be a source competitive advantage.

With economic standpoint the information technologies can be considered as capital goods, which can liberally change the labor. Since, the cost information technology falls, they change the labor, which historically has increasing cost. Consequently, in micro economic theory the information technologies must bring about reduction of the number of the average managers and employees, since information technologies change them. Information technologies also change the sizes a contract companies since they can reduce the operating expenses. Information technologies particularly use the networks, reduce the cost of the market participation (the operating expenses) and do their deserving attention for companies to conclude the contract with outside vendors instead of that to use the internal sources of the supply.

Other financial influence of information technology is concluded in internal expenses of management.

According to theory of the organization of the company hang from expenses organization, cost checking and managing employees. Since sizes of the company grow, expenses to organizations increase since owners must spend all more effort on supervision for employees. Information technologies, reducing expenses on acquisition and analysis to information, enable the organization to reduce the expenses of the company since with their help manager more simply to stake out large number of the employees.

We live in a knowledge and information society. In fact we can say that e-learning makes lifelong learning easier. The whole economy is based upon rapid changes in the technology. If a company or a country is going to be able to compete in the global market, employees with up to date knowledge and education is a must. E-learning can be an effective way to educate people. With the latest e-learning solutions it is possible to acquire new knowledge and take part in "lifelong" learning while already being employed. E-learning can hopefully stop the negative tendency where some people are ejected from their jobs because they lack relevant and updated knowledge. This is typical a problem in the "elder" working generations in high technology areas. In general we can say that by introducing e-learning more people get access to education, and this means a more educated society. Living in a knowledge and information society, this is crucial.

Security is one of the most important issues in E-government. All of the security approaches that are common in E-commerce are applicable to E-government. But E- government is a little different from E-commerce. Usually government networks can communicate to each other better than business networks, because, most of them are connected for transferring information, but businesses are competitors and they don't disclose their sensitive information. Utilizing honey pots is a good solution for tracing hackers and revealing their tools. Information and Communication Technologies (ICT) is transforming the governmental processes in serving citizens (G2C), businesses (G2B) and governments (G2G) [6]. While e-Government is subject to the same threats as e-business, E-government operates within different constraints. Most businesses deal only with a subset of the population, and they can

choose the how and the when they do it. But the government must deal with everyone [12]. Therefore, in order to the huge number of users and transactions, and sensitivity of this field, like citizen's private information or government's secret information, and other issues, securing governmental networks is more important than businesses. One of the main issues of trust in E-government implementation is security [1, 9].

Rest of paper organized follows. In the next chapter we briefly cover e-Government services, functions and benefits. Next we introduce honeypot technology, illustrating its types and features. Lastly we focus on employment of honey pots for e-Government security, providing implementation architecture for it, while after listing its trade-offs.

2. Information technologies as instrument of the shaping the marketing decisions

2.1. Information systems for shaping marketing decisions

Since, there are different interests, particularities and level in organizations, exist the different types of the information systems. Any single system cannot completely provide need of organization in the whole information. The organization can possible be divided into levels: strategic, management, knowledge and working; and on functional areas of the type of the sale and marketing, production, finance, accounting and human resource. The systems are created to service these different organizing interests. The different organizing levels service four main types of the information systems: systems with working level, knowledge level systems, systems of level management and systems with strategic level.

The systems working level support the controlling operation, keep a check on elementary action of the organizations of the type of the sale, payments, the deposits, payroll. The main purpose of the system on this level consists in that to answer the usual questions and conduct the flows transactions through organization. To answer these types of the questions, information in general must be easy available, operative and exact. The systems level knowledge support the workman of the knowledge and handler given in organizations. The purpose of the system level knowledge consists in that to help to integrate the new knowledge in business and help the organizations to control the flow a document. The knowledge level systems, in workstation particularly and office system form, today are the fast grows exhibits in business. The systems level management is designed to service supervision, management, decision making and administrative actions of the average managers. They define, well work the objects, and seasonally notify of this. For instance, managerial system by displacement reports on moving the gross amount of the goods, uniformities of the functioning the trade division and division, financing expenses for serving in all sections of the companies, noting, where actual costs exceed the budgets.

The main features of such systems are:

- Possibility of the decision of the problems, development which it is difficult to forecast;
- Presence of the tools and analysis;
- Possibility easy to change stating the solved problems and input data;
- Flexibility and adaptation to change the terms;
- Technology, greatly oriented on user.

Some systems level control support unusual decision making. They tend attend on more structured marketing decisions, for which information requirements not always clear.

The systems strategic level - an instrument help leader high level, which prepare the strategic studies and long trends in company. Their main purpose - provide in correspondence to the change to term of the usages with existing organizing possibility.

Hereunder, information technologies of support strategic level taking the marketing decisions help the high section of control organization to solve the not structured tasks the main from which is a comparison occurring in external ambience of the change with existing potential of the company. Information technologies at present possible to classify on row sign, in particular: way to realization in information system, degree of the incidence of the tasks of control, class realized technological

operation, type of the user interface, variant of the use to network computer, maintained application domain.

The Information systems can be also differentiated by functional image. The main to organizing functions of the type of the sale and marketing, production, finance, accounting and human resource are serviced own information system. In great organizations sub function each of these main function also have an own information systems. For instance, function production could have systems for governing spare, control process, servicing the plant, automated development and material planning the requirements.

The typical organization has a systems different level: working, management, knowledge and strategic for each functional area. For instance, commercial function has a commercial system on working level to do record daily commercial data and process the orders. The system level knowledge creates the corresponding to display for demonstration products of company. The systems level control traces monthly commercial data of all commercial territory and report about territory, where sale exceeds the expected level or falls below expected level. The system of the forecast predicts commercial trends for five-year period - services the strategic level.

The information systems can become the powerful instrument for making more competitive and efficient organization. Information technologies can be used that to project organizations, transforming their structure, area of the action, facility of the message and mechanisms of functioning control, labor process, product and service.

The information systems and organizations have a mutual influence friend on friend. On the one hand information systems must be joined to organizations to provide necessary information important groups to inwardly organizations. In ditto time organization must realize and open itself influences of the information systems to capitalize from new technology.

Conditionally possible speak of that that in our country was successfully terminated process of primary acquisition and mastering the technology, when companies, feeling deficit in computer and office technology, did the main stress on its acquisition, built the local systems and introduced the separate elements of the electronic document processing. Information technology - an infrastructure majority enterprise is created. Now before companies stands the task of the introduction complex service - oriented business-processes on base information technology, rather than disembodied project with their using.

Amongst introduced decisions possible to note the billing system in many telecommunication companies, integrated information-analytical systems in Central bank (CB) of the Republic Uzbekistan, which comprise of it all business-functions most CB, as well as give the instruments for receiving, keeping and analysis report commercial bank data for coordinating function, determined by legislation Uzbekistan. As a whole, the main user of the services IT - a consulting are a company's telecommunication, bank-financial sector, large and average industrial enterprises, as well as state organizations.

3. Motives for sponsoring development of e-learning

3.1. Persuasive reasons of e-learning

One of the most persuasive reasons for e-learning is removing of geographical obstacles. E-learning can remove geographical barriers. With e-learning a student in Uzbekistan can get a bachelor degree in France by following e-learning studies over the Internet. This is also the case within a country. E-learning makes it possible for people living in remote areas to follow courses given by one of the Universities or University Colleges (UCs) in the bigger cities without physically moving there to study. This is important to give equal opportunities to the whole population of the country.

We should also avoid costly duplication. Every year billions and billions sums of money are spent on education. Most countries in the world see education just as important to the society as water is to us humans. When educators are spread around the country each of them serving their own geographical area, there will be an enormous duplication of studies throughout each country. This degree of duplication can be reduced by introducing e-learning. An enormous amount of money is spent on duplicating material. By the use of e-learning and electronic material it should be possible to save

money by sharing material. If we are able not to duplicate too many study programs, the different establishments could potentially save the society and themselves a lot of money. Maybe the Universities who deliver the most cost-effective and efficient e-learning program in every subject area should get the government founding. Research on implementation and use of Learning Objects (LO) following the same technical standards are important when we are looking for new ways to enhance the reuse of learning material, and avoid costly material duplication. By using mutual standards LOs could even be placed in large repositories for common use.

The third motive is teacher's time saving. Some research has shown that introducing e-learning in higher education can be more time efficient. The professors and teachers then potentially get more available work-time for research. This is very important if we want to develop our societies and have the ability to compete. By subsidizing e-learning and the development of e-learning the society builds the foundation for harvesting time- and cost-effective benefits in the future. Making e-learning more time- and cost efficient than traditional classroom education is an ongoing job. The society providing money to support research on e-learning is helpful to speed up the process in finding the best e-learning solutions.

3.2. Motives for sponsoring

The ability of reducing time spent on learning is not only favorable for the teachers and professors.

Research has shown that e-learning can be time efficient also for the learner. There are several reasons why this is the case. One fact is that e-learning often is designed to let the learners decide what they need to learn and how much time they have to spend absorbing the relevant learning material. In traditional classroom courses the learners have to be present throughout the entire course even if they already have parts of the knowledge being presented in the course. E-learning can be more efficient for the learner, letting him choose where to put his time and effort going thru the course material. Many students will also be able to spend less time on travelling, when they can study using the Internet. By saving time in the learning process, the entire society will "productive" time available. This means that we can produce more, and hopefully earn more money.

E-learning can be useful in helping physically disabled people getting a better education offer. People who are sitting in a wheel chair or for other reasons have problem with travelling around, can get access to study programs through the Internet. By integrating the latest computer based tool when offering e-learning, one can customize education to fit people who are weak-sighted or have reduced hearing capabilities. Being able to offer an educational study program to as many people as possible should be in the society's best interest. In most countries, e-learning and net based education has become more and more popular. Still it's a fact that education taken over Internet and at distance doesn't have the same status and acknowledgement as traditional campus education. There might be logical reasons for this looking at distance education in a historical perspective, but that should not be the case today. Therefore it is important that society subsidizes the research and development of e-learning. High quality e-learning will ensure that the society will not be worse off even if e-learning will be the way to go in the future. It is possible to impose Quality standards for e-learning courses in the same manner as for traditional campus courses.

Economists have the last five years talked about the "new economy". What makes the economy new is the fact that "the world is getting smaller". Thru Internet and other types of electronic communication, most companies can get access to the global market. If we are to buy a book we can physically take the bus into the city and go to the bookstore, or we can access the Internet and order the book from internet shops. Former geographical barriers disappear and we move from local to global competition. This has become reality in the commodity business and this could also be the case in the education industry. With the proper business models and the right e-learning solutions a national educational provider could offer education in an international market. Selling e-learning in an international market will become more and more common, and each society which wants to be an educational supplier should subsidize and invest in the development of high quality e-learning.

Through this effort e-learning can also be helpful for countries getting a more international focus.

However there is one important challenge, language. Some languages like Russian and English are spoken by many people throughout the world and are therefore well suited for if we want to share

learning material between countries. Content developers living in smaller countries with their own native language will only be able to share LOs if they write them in one of the big “international” languages. Today translation of digital content cannot be done at low price by the use of existing technology.

4. Securing e-Government with Honey pots

Main security concerns in e-Government are: the preservation of confidentiality, integrity and availability of information. Other properties such as authenticity, accountability, non-repudiation and reliability are also involved [ISO/IEC 17799:2005]. Most of researchers implement their approach as digital signatures and firewalls.

Also, there are several models of information security. The Security By Consensus (SBC) model has been suggested by Kowalski (1994). Dhillon (2000) discusses how socio-technical system approaches can be combined with usability engineering in the design of information systems. Eloff and Eloff (2003) argue that an information security management system (ISMS) consists of many aspects such as policies, standards, guidelines, codes of practice, technology, human issues, legal and ethical issues. While our approach is enhancing existing security capabilities with adding one more tool called “Honey pot”. Main target of this approach is to follow “learn enemy” strategy, while more knowledge about e-Government “enemies = hackers” leads us to build more safe system.

Definitions of e-government range from “the use of information technology to free movement of information to overcome the physical bounds of traditional paper and physical based systems to the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees”. The common theme behind these definitions is that e-government involves the automation or computerization of existing paper-based procedures that will prompt new styles of leadership, new ways of debating and deciding strategies, new ways of transacting business, new ways of listening to citizens and communities, and new ways of organizing and delivering information [18].

Ultimately, e-government aims to enhance access to and delivery of government services to benefit citizens. More important, it aims to help strengthen government’s drive toward effective governance and increased transparency to better manage a country’s social and economic resources for development.

The key to e-government is the establishment of a long-term, organization-wide strategy to constantly improve operations with the end in view of fulfilling citizen needs by transforming internal operations such as staffing, technology, processes and work flow management.

Thus, e-government should result in the efficient and swift delivery of goods and services to citizens, businesses, government employees and agencies. To citizens and businesses, e-government would mean the simplification of procedures and streamlining of the approval process. To government employees and agencies, it would mean the facilitation of cross-agency coordination and collaboration to ensure appropriate and timely decision-making. E-Government services focus on four main customers: citizens, the business community, government employees, and government agencies. E-Government aims to make interaction with citizens, businesses, government employees, government agencies and other governments more convenient, friendly, transparent, inexpensive and effective.

In an e-government system, individuals are able to initiate a request for a particular government service and then receive that government service through the Internet or some computerized mechanism. In some cases, the government service is delivered through one government office, instead of many. In other cases, a government transaction is completed without direct in-person contact with a government employee. The four types of e-Government services are Government-to-Citizen (G2C), Government-to-Business (G2B), Government-to-Employee (G2E), and Government-to-Government (G2G).

G2C includes information dissemination to the public, basic citizen services such as license renewals, ordering of birth/death/marriage certificates and filing of income taxes, as well as citizen assistance for such basic services as education, health care, hospital information and libraries [22].

4.1. Honey pots

Honeypots are a new technology with enormous potential for the Information Technology community.

A “honeypot” is a tool that can help protect for network from unauthorized access. The honeypot contains no data or applications critical to the company but has enough interesting data to lure a hacker. A honeypot is a computer on your network the sole purpose is to look and act like a legitimate computer but actually is configured to interact with potential hackers in such a way as to capture details of their attacks. Honeypots are known also as a *sacrificial lamb*, *decoy*, or *booby trap*. The more realistic the interaction, the longer the attacker will stay occupied on honeypot systems and away from your production systems. The longer the hacker stays using the honeypot, the more will be disclosed about their techniques. This information can be used to identify what they are after, what their skill level is, and what tools do they use [10].

Honeypot is a simply a system program or file that has absolutely no purpose in production. Therefore, we can always assume that if the honeypot is accessed, it is for some reason unrelated to your organization purpose.

Honeypots are probably one of the last security tools an organization should implement. This is primarily because of the concern that somebody may use the honeypot to attack other systems.

Honeypots are categorized by the level of interaction into high-interaction and low-interaction. Level of interaction gives us a scale with which to measure and compare honeypots. The more a honeypot can do and the more an attacker can do to a honeypot, the greater the information that can be derived from it. However, by the same token, the more an attacker can do to the honeypot, the more potential damage an attacker can do.

A high-interaction honeypot provides a real system the attacker can interact with. It can be compromised completely, allowing an adversary to gain full access to the system and use it to launch further network attacks.

In contrast, a low-interaction honeypots simulates only some parts — for example, the network stack. These honeypots simulate only services that cannot be exploited to get complete access to the honeypot. A lowinteraction honeypot often implements just enough of the Internet protocols, usually TCP and IP, to allow interaction with the adversary and make her believe she is connecting to a real system.

4.1.1. Physical and Virtual honeypot

Physical honeypot means that the honeypot is running on a physical machine. Physical often implies highinteraction, thus allowing the system to be compromised completely. They are typically expensive to install and maintain. For large address spaces, it is impractical or impossible to deploy a physical honeypot for each IP address. In that case, we need to deploy virtual honeypots [16].

Compared to physical honeypots, this approach is more lightweight. Instead of deploying a physical computer system that acts as a honeypot, we can also deploy one physical computer that hosts several virtual machines that act as honeypots. This leads to easier maintenance and lower physical requirements. Usually VMware or User-Mode Linux (UML) is used to set up such virtual honeypots. These two tools allow us to run multiple operating systems and their applications concurrently on a single physical machine, making it much easier to collect data.

4.2 Advantages and disadvantages of honeypots

Honeypots are incredibly simple concepts that offer powerful advantages:

- **New Tools and Tactics:** They are designed to capture anything that interacts with them, including

- tools or tactics never seen before, better known as “zero-days”;

- **Minimal Resources:** This means that resources can be minimal and still enough to operate as powerful platform to operate at full scale. For example: A computer running with a Pentium Processor with 128 Mb of RAM can easily handle an entire B-class network;

- **IPv6 Encryption:** Unlike most security technologies, Honeypots also work in IPv6 environments. The Honeypot will detect an IPv6-based attack the same way it does with anIPv4 attack;

- **Information:** Honeypots can gather detailed information, unlike other security incident analysis tools;

- **Simplicity:** Because of their architecture, Honeypots are conceptually simple. There is not a reason why new algorithms, tables or signatures must be developed or maintained.

Just like any other technology, Honeypots also have significant weaknesses inherent to their design and functioning. This is because Honeypots do not replace current technologies, but instead work along with other existing technologies:

- **Limited Vision:** They can only scan and capture activity destined to interact directly with them. They do not capture information related to attacks destined towards neighboring systems, unless the attacker or the threat interacts with the Honeypot at the same time;

- **Risk: Inherently,** the use of any security technology implies a potential risk. Honeypots are no different because they are also subject to risks, specifically being hijacked and controlled by the intruder and used as a launch pad for subsequent attacks [19].

4.3. Honeypot secured e-Government

Securing E-government networks is similar to other networks. Many approaches like cryptography, PKI, firewalls, digital signatures are employed in these networks. However, as mentioned above, e-Government is an inter-networked government. In most of the cases, government agencies in a country are connected to each other for communicating the information about citizens. This is one of the main differences between government networks and business networks. Because, the businesses are competitor and do not disclose their network to each other, but in most of the governments, co-operation is more critical than competition. So we can use this connectedness to set up a honeynet.

The main goal of honey pots is to trace the hackers and obtain information about their approaches and tools. One of the most important challenges of honey pots is the degree of their interaction. If we use low-interaction honey pots, a hacker cannot utilize all of the resources of the system, so she probably won't be able to use all of her approaches and tools. Therefore we will lose a suitable opportunity for obtaining information. In the other side if she can completely utilize all of the resources, maybe she can use the information that she obtained from the honeypot for attacking other hosts or send spam from one of the compromised machine.

As a result, this trade-off must be managed effectively. Security in the governmental networks is more critical than business networks. So if we want to use honeypots in these networks, we must consider the tradeoff related to interaction precisely. We need at least a high-interaction honeypot for each agency's network. So we have a network of honeypots through the government, called as honeynet.

With this network we can increase the possibility of attacks; because our honeypots are dispersed all over the government and all of them are high-interaction. Furthermore we have a honeycentre server, which is the manager of the honeynets. It aggregates all of the honeypots logs and then summarizes the results.

Honeycentre then informs the web servers about the results, so the administrators of those web servers make an appropriate defensive decision to cover the security holes.

Now we have a network that traces the attacks, all over the government, with a high degree of interaction to hackers. On the other hand, we can cover our security holes as soon as possible [1].

Honeypots are subject to damage. So, various attacks may disable the honeypots. So we must have a fault tolerance network to predict these problems and react as soon as possible. For this purpose, honeycentre can help. Honeycentre is gathering information and logs from honeypots all of the times. When a honeypot is down, Honeycentre cannot receive the logs from that honeypot, so it informs the web server of that network and simultaneously assigns a virtual honeypot instead of the damaged honeypot. Honeycentre allots IP address of the damaged honeypot to the virtual honeypot. We may have an additional server for assigning these virtual honeypots (Figure 1).

In Fig.1 other network components like user stations, gateways, routers, and connections between agencies are not shown to avoid complexities. As mentioned in the section 3, virtual honeypots are more lightweight than a high-interaction or low interaction honeypot. At a given time, we may have some damaged honeypots in the network, and we cannot fix all of them very soon. On the other hand

we cannot assign some high or low interaction honeypot instead of all damaged honeypots to the network, because maybe they are too many and we don't have required resources. So if we use virtual honeypots temporarily, we can solve this problem with just one additional server.

These virtual honeypots must act like the original honeypot. So each government agency replicates its minimum data into honeycentre or additional server in every specified period of time. Those data is kept minimum, because they should only help the system work, until the problem is solved and the real honeypot returns back to its logical position [1].

Such a situation enables the honeycentre to create a real fault tolerant system which would be strong enough to deal with attacks without any interruption.

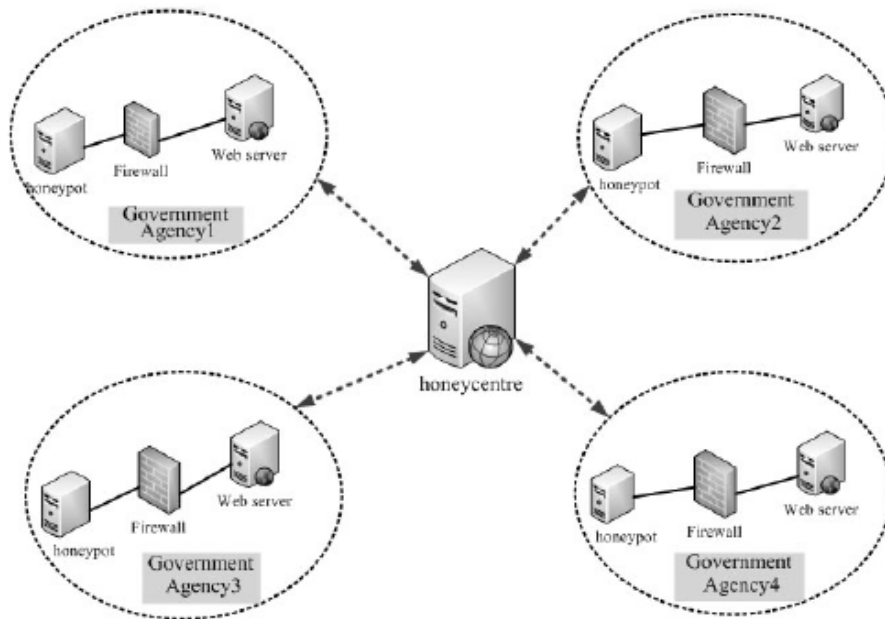


Figure 1. Example of honeypot secured e-Government architecture

4. The Situation and Development Directions of the E-Learning Systems in the Knowledge Society

5.1. History of Distance Learning Systems

Distance education is dates back to at least as early as 1728, when "an advertisement in the Boston Gazette named 'Caleb Phillips, Teacher of the new method of Short Hand" was seeking students for lessons to be sent weekly. Modern distance education has been practiced at least since Isaac Pitman taught shorthand in Great Britain via correspondence in the 1840s. The development of the postal service in the 19th century led to the growth of Commercial correspondence colleges with nation-wide reach.

The University of London was the first university that offered distance learning degrees, establishing its External Program in 1858. The Society of Encourage Studies at Home was founded in 1873 in Boston,

Massachusetts. In Australia, the University of Queensland established its Department of Correspondence Studies in 1911. Another pioneering institution was the University of South Africa, which has been offering Correspondence Education courses since 1946. In New Zealand, university-

level distance education or extramural study began in 1960 at Massey University. The largest distance education university in the United

Kingdom is the Open University founded 1969. In Germany the FernUniversität in Hagen was founded 1974. There are now many similar institutions around the world, often with the name Open University (in English or in the local language), and more than a dozen of them have grown to become 'mega-universities'. In addition, there are many private and public, non-profit and for-profit institutions offering courses and degree programs through distance education. Levels of accreditation vary; some institutions offering distance education in the United States have received little outside oversight, and some may be fraudulent diploma mills. In many other jurisdictions, an institution may not use the term "University" without accreditation and authorization, normally by the national government. Online education is rapidly increasing among mainstream universities in the United States, where online doctoral programs have even developed at prestigious research institutions.

In the twentieth century, radio, television, and the Internet have all been used to further distance education. Computers and the Internet have made distance learning distribution easier and faster.

5.2. Analyzing Existing e-Learning Systems

Distance learning and e-learning have differences and e-learning is a part of distance learning. The distance learning in using any kind of information technologies starting from post services, radio, TV, phone, and ending with the last achievements in the field of information technologies.

As mentioned upper virtual learning environments are also called LMS (Learning Management Systems). But there are LCMS also. Of course they are different.

From second millennium have been created many products and started number of projects, such as FirstClass, ILIAS, Claroline, Moodle, SCORM by Dokeos, LAMS (Learning Activity Management System), Sakai Project, SharePointLMS (a Learning Management System which is based on the Microsoft Office SharePoint Server 2007 & WSS3.0 platform.), Spiral Universe, TotalLMS, ToolBook by SumTotal Systems, OLAT (Online Learning And Training), WebCT, ATutor and many others.

These products were developed by different countries, so let's see the situation of e-learning nowadays in the world (Table 1).

Table 1. Review the distance learning situation in the world.[4]

№	Country	College (or university) and number of courses	The year of establishing	Number of listeners (students)
1	India	Advanced Training Institute	1985	185.000
2	Great Britain	Open University (500 courses and 13 regional centers)	1969	200.000
3	USA	Colorado University	1984	124.000
4	Spain	National University	1972	124.000
5	Spain	Quebec Tele-university	1972	20.000
6	Canada	Athabasca University (250-300 courses)	1970	11.351
7	Germany	Hagen University	1985	50.000
8	Indonesia	Jakarta	1984	172.000
9	Israel	200 courses	1974	120.000
10	Sri Lanka	Open University (20 courses)	1980	16.000
11	Taiwan	National Open University	1986	62.000
12	Thailand	Sukotai Open University	1978	60.000-70.000
13	Pakistan	Open University (200 courses)	1974	90.000

As we can see, e-learning developed in many countries of the world and has weighty influence and importance in education. The number of universities and educational centers which give an opportunity of distance learning in hole the world is following:

- In Europe: 240
- North America: 237
- Africa: 126
- Asia: 101

- Australia: 68
- Latin America: 54
- Central America: 6
- Middle East: 3

It shows that the number of e-learning systems is increasing. An e-learning system also product, and has corresponding requirements, standards.

At this point will be expedient to give some information about SCORM (Sharable Content Object Reference Model) is a collection of standards and specifications for web-based e-learning. It defines communications between client side content and a host system called the run-time environment (commonly a function of a learning management system). SCORM 2004 introduces a complex idea called sequencing, which is a set of rules that specifies the order in which a learner may experience content objects. In simple terms, they constrain a learner to a fixed set of paths through the training material, permit the learner to "bookmark" their progress when taking breaks, and assure the acceptability of test scores achieved by the learner. The standard uses XML. Many of distance learning, in particular e-learning systems are developed according to SCORM.

5.3. LMS & LCMS

A learning management system (LMS) is software for delivering, tracking and managing training/education. LMSs range from systems for managing training/educational records to software for distributing courses over the Internet and offering features for online collaboration.

Table 2. Based on researches of Brandon Hall showing possibilities and differences between two systems

	LMS	LCMS
What intended for?	All learners; organization	Content developers; Students, who need individualized content
Mainly providing management of:	Learning process; education requirements; Study programs and planning	Learning content
E-learning Management	Yes	Yes
Traditional education management	Yes	No
Tracing the results	Yes	Yes
Providing mutual work of the students	Yes	Yes
Includes management of education profiles	Yes	No
Gives an opportunity to HR and ERP systems to use education data	Yes	No
Event schedule	Yes	No
Competency/knowledge cards profiles analyzing	Yes	No
Notifications about registration on course, requirements for viewing and notifying on cancellation of the course	Yes	No
Creating questions and test management	Yes	Yes
Providing preliminary testing and adaptive education	No	Yes
Providing the creating of the content	No	Yes
Organizing of multi-time using content	Yes	Yes
Document flow tools for management the process of content creation	No	Yes
Developing navigation tools for content and user interface	No	Yes

LMS provides unique point of access to the different scholastic resources. This automates administration of scholastic programs and opens the unprecedented possibilities for development of stuff. It is possible to identify those people, who need the specific courses and tell them, how they can use this for career growth, when it is possible, how it is possible (the scholastic class, on-line or CD-ROM), is there any preliminary requirements and how they can execute these requirements. After training terminate; complete courses, LMS can fix the tests, founded on professional requirements, form the report on results of the test and recommend the further steps. Due to these possibilities, LMS is an instrument for supporting organization, presenting hard requirements on certification, in such vertical markets, as public health, finance or state control.

A learning content management system (LCMS) is a related technology to the learning management system (WebCT), in that it is focused on the development, management and publishing of the content that will typically be delivered via an LMS. An LCMS is a multi-user environment where developers may create, store, reuse, manage, and deliver digital learning content from a central object repository. The LMS cannot create and manipulate courses; it cannot reuse the content of one course to build another. The LCMS, however, can create, manage and deliver not only training modules but also manage and edit all the individual pieces that make up a catalog of training. LCMS applications allow users to create, import, manage, search for and reuse small units or 'chunks' of digital learning content/assets, commonly referred to as learning objects. These assets may include media files developed in other authoring tools, assessment items, simulations, text, graphics or any other object that makes up the content within the course being created. An LCMS manages the process of creating, editing, storing and delivering e-learning content.

To understand and for distinction these two systems we will examine them according their characteristics

Most buyers of LMSs utilize an authoring tool to create their e-learning content, which is then hosted on an LMS. Buyers, however, must choose an authoring software that integrates with their LMS in order for their content to be hosted. There are authoring tools on the market, such as Lectora and ToolBook, which meet AICC and SCORM standards and therefore content created in tools such as these can be hosted on an AICC or SCORM certified LMS.

5.4. The situation of e-learning systems in Uzbekistan

In Uzbekistan using new technologies and programs was organized distance learning of raising the level of young and targeted teachers, professors by President foundation "Istedod" (means "talent"). And was opened web-site of this organization in the Internet www.istedod.uz. The courses were developed according to the National Program of Training Personnel and meet their requirements.

In 2006 first time in Uzbekistan were created courses in Uzbek (Russian, English versions also) like as "Manaviyat va marifat" (Spirituality and Intellectuality), "Axborot texnologiyalari va masofali o'qitish" (Information technologies and distance learning), "Innovasion texnologiyalar" (Innovation technologies),

"Ta'lim muassasalari boshqaruvi" (Management of educational organizations). In this distance education till this year took part more than 4000 learners. And 1334 people of them finished successfully these courses and took certificates. As showing the results many listeners chose IT technologies course more than 1000 listeners.

And the courses were prepared by high qualified professors and teachers.

There is also another web portal, which was made by the team of State Tashkent University of Pedagogy and stated its activity from September, 2007 (pedagog.uz). The courses given in this portal intended for the secondary education organization teachers.

In both cases the student or listener has to enter to the site and choose the distance learning. Then of course after registration they can start their education. After each subject student should pass tests with the results 75 or more. In the other way the student cannot continue studying. And in the same way student, if he will pass all exams, will be allowed to take final exams and if his results will be 75 or more he can take e-certificate.

Nowadays we may see some elements of distance learning in the universities of Uzbekistan such as Uzbekistan National University, Tashkent State University of Technics, Gulistan State University, Fergana Poly-technical University, Tashkent Islamic University and many other universities.

6. Conclusions

Use information technology for governing enterprise does any company more competitive to account of increasing to its controllability and adaptation to change the market conjuncture. Such automation allows:

- Raise efficiency of control company to account of the ensuring the leaders and specialist greatly full, operative and reliable information on base of the united databank.

- Perfect the paperwork at optimization and standardizations of the document processing, automations of the most labor-consuming its procedures.
- Reduce the costs on business management to account of the automations of the processes information handling, regulation and simplifications of the access employee to companies to necessary information.
- Provide the reliable account and supervision the arrivals and spending the bankrolls on all level of control.
- Leader average and lower section to analyze activity of their own subdivisions and operative to prepare consolidated and analytical reports for manual and adjacent division.
- Raise efficiency of the exchange given between separate subdivisions, branch and central device.
- Guarantee get fat safety and wholeness given on all stage information handling.

It is important to note that automation - not end in itself, but goal-directed activity on rationalizations and optimization organizing-staff structure of the enterprise and its business-processes.

The automation gives vastly better performance under complex approach. The partial automation separate worker places or function capable to solve only next "burning" problem. However herewith appear and negative effects: do not fall, but occasionally even increase labor content and expenses on contents of the personnel; does not withdraw in coordination of the functioning the subdivisions. Information technologies possess the following characteristic, which useful for economist-manager: help to overcome the gap between economy and mathematics; are an most efficient carrier of the modern methods of the decision of the economic tasks; promote the co-ordination of the economic procedures with international requirements; connect to united information space - economic and educational.

In this connection for the reason optimization of marketing activity domestic enterprise is recommended gradually develop and improve the process of the introduction information technology in sphere of the shaping the marketing decisions.

In general we can say that subsidizing e-learning is a good investment to make the society become more technology updated. The children of today are born with computers being a natural facility in the modern home. At young age children use the computer to play games and communicate with each other. For these children there will be no barriers relating to a computer as a helpful aid in receiving their education. In a computer society the society should support the evolution, and e-learning is a part of that evolution. Greater use of computers and technology in education is one the official intensions launched by most European governments.

Designing and implementing more effective approaches for securing e-Government is an important issue, because, the governmental information is usually so sensitive. Furthermore, security has an important role in trust formation of citizens and their adoption of e-Government. In this paper, one of the main differences of government and business networks is exploited: connectedness. This useful property used to form a network of honeypots. Furthermore, this honeynet is fault tolerance; so if some honeypots are damaged, the honeycentre allots some virtual honeypots with minimum resources needed, and evicts the damaged honeypot from the network. So the proposed framework causes interaction with the hackers completely and simultaneously prevents them from damaging the network.

As we looked through the history of the distance learning we saw that it took its basis from XVIII century. But with the developing of Information technologies it is developing with such speed, that 20 years ago we couldn't imagine the processes of e-learning. E-learning systems are very suitable and practical for everyone, who doesn't want to lose his valuable time. It gives possibilities to save money, time, strength, materials, that is why it is spreading hole over the world.

Of course it came in to our country too. Maybe we can't say that it meets all the requirements of e-learning systems, but some elements of e-learning system are existing. And Government of Republic of Uzbekistan is paying great attention to introducing IT in to the educational sphere. Of course in Uzbekistan there are difficulties. They are psychological problems of teachers, methodical difficulties of using distance learning, low qualification of teachers in preparing e-contents, technical problems, and problem of need the normative documents in this field. Even though Uzbekistan government is trying to solve these problems and open the ways of developing e-learning systems.

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