Information Technology as Factor in Development of Contemporary Business

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Abstract

The purpose of this paper is to examine the information technology as factor in development of contemporary business. In this paper we intend to investigate the role and effect of information technology in the creation and maintenance of sustainable competitive advantages for organizations.

Also we will offer basic notions related to information technology and explain the main factors that affect the application of Information Technology.

As we know in current market conditions, nearly all business operations are closely related to and depend on the application of Information Technology. Information Technology enables cost reduction, market expansion, increase productivity, enables better communication, improves service and offers great opportunities to find e new business partners.

Also we will become familiar with the application of computer networks such as: Internet, Intranet, and Extranet.

Using the scientific and professional literature offered from several aspects to this research paper is aimed to proof the role and importance of use an Information Technology in development of contemporary business.

Keywords: *Information Technology, Role and Importance, Contemporary Business, Internet, Intranet, Extranet.*

1. Definition of Information Technology

In everyday life, at work and in communication with people, increasingly we find expression use of information technology. Also in literature often encounter in the use of expression

"Information and Communication Technology" which has a similar meaning to the term information technology.

The term information technology first was used from Jim Domsic from Michigan USA, in November 1981. Domsic, who worked as a manager in an automobile industry, used the term information technology to modernize the term "data processing"[1].

Authors and Scientifics researchers have explained in various ways term information and communication technology. According to Roger Cartwright "Information and Telecommunication Technology link computers and communication technologies to create synergies between them".[2]

While Alan Charlesworth in this way explains the abbreviations used in Information and Communication Technology, with term "I" we realize managing and processing information, while "T" means technology. At any rate, this expression today has become a synonym for everything that has to do with computers. Abbreviations IT was wont to join the abbreviation C-communication, which makes the term applied to electronic business.[3]

Based on encyclopedic dictionary of information technology, "Information Technology is an expression which includes all the technologies that are used for creating, processing, transmission, storage, exchange and use of information in all its forms, such us: business records, oral talks, photographs, paintings, video presentations, and other forms, including those not yet created. This expression integrates electronics, telecommunications, computing, internet and the media, and can be used in singular and plural."[4].

Association for Computing Machinery (ACM) defines information technology as follows:" Information Technology (IT) in its broadest sense encompasses all aspects of computing technology. IT, as an academic discipline, is concerned with issues relates to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies"[5].

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[1] David S.O. (2012) it is your problem. [Online] Available from: http://www.blackinkassets.com/articles/IT_is_Your_Problem.pdf [Accessed: 20 March, 2013].

[2] Cartwright R. I. (2005) Key Concepts in Information and Communication Technology, page 88, Palgrave Macmillan Hampshire, UK

[3] Charlesworth A. (2007) Key Concepts in e-commerce page. 143, Palgrave Macmilan Hampshire, UK

[4] Mehmeti A. Sh. (2006) Fjalor Enciklopedik nga Teknologjia e Informacionit, page.182, Prishtinë Kosovë

[5] Barry M. Lunt, Joseph J. Ekstrom –Association for Computing Machinery (ACM) "Curriculum Guidelines for undergraduate degree programs in Information Technology" [Online], Available from: www.acm.org/education/curricula/IT2008%20Curriculum.pdf [Accessed 27 March 2013].

According to World Bank- RiOS Institute "Information and Communication Technology refers to computers, the internet, mobile phones and traditional media such as radio, to advance human and social development"[6].

Information and communication technologies (ICT) are broadly defined as technologies used to convey, manipulate and store data by electronic means. This can include e-mail, SMS text messaging, video chat (e.g. Skype), and online social media (e.g. Face book).It also includes all the different computing devices (e.g. laptop computers and smart phones) that carry out a wide range of communication and information functions[7].

So, Information Technology is the general notion that describes technology which helps to create, store, process and disseminate information and refers to technologies associated with computer technology: computer networks, hardware, software, internet, and people who work with this technology. In general, when it comes to information technology as a whole that mean correlation between computer and information.

2. The role of information technology in development of contemporarily business

The development of information technology is the core of the development of contemporary society. Rapid development of information technology conditioned globalization of the labor process and business development through computer networks and performs various commercial services.

In modern conditions of business development, information technology equipment is present everywhere: in offices, in factories, in schools, at home, even in people's pockets. Information technology is profoundly changing the behavior and communication of companies and individuals. The rapid development and use of information technology has made the world seem much smaller and communicated without limitations of time and space. Innovations associated with computers, such as the Internet, enabling individuals in different parts of the world to interact in ways unimaginable in

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[6] Braund P. Frauscher K., Schwittay A. Rios Institute "Information and Communications Technology for Economic Development" [Online], Available from www.riosinstitute.org/ RiOSWBIediscussio.pdf [Accessed 18 March 2013]

[7] Perron E. B., Taylor O.H., Glass. E. J., Leys M. J. "Information and Communication Technologies in Social Work" –"", [Online] , Available from: http://deepblue.lib.umich.edu/ bitstream/handle/2027.42/78034/46.pdf;jsessionid=FA66E243C4391E10ECF945444ECE3EB9?s equence=1 [Accessed 16 March. 2013].

the past twenty years and it was not possible even to imagine just two decades ago.[8]

Today, innovations in human history have brought great opportunities as a result of the application of information technology. Global nature of technology, low cost, the possibility of gaining access to hundreds of millions of people, interactive nature, diversity and rapid growth opportunities supporting infrastructure resulting in many potential benefits for enterprises, individuals and society. These benefits have only begun to materialize, but they grow at breathtaking speed with the expansion of the application of informative technology in all areas of life.[9]

Until the 80th century, the role of Information Technology has been limited, various enterprises in order to store, process and disseminate information have a computer and an employee or has entrusted to a particular agency. However, in the 90's of the XX century, the role of information technology has increased significantly through: increasing importance of storage, processing and distribution, and exchange of information and communication with business partners, increasing the number of computers and staff who deals with the organization and maintenance of information technology.

The competitive environment has changed dramatically in past two decades and has become very complex. Globalization also has an important impact on business environment and on all organizations, especially in last two decades.

Organizations started to realize that they are not able to act independently (anymore) on the global market. The globalization has forced organizations, to look for more effective ways to coordinate the flow of materials into and out of the organization. Key to such coordination is collaboration and closer relationships with suppliers.[10]

In current market conditions, nearly all business operations are closely related to and dependent on the application of information technology, we can say that the majority of medium and large enterprises within their organizational structure have organized information technology departments.

Information technology professionals can perform a variety of tasks ranging from installing different applications, designing complex computer networks, collection, processing, information storage, creation of databases, etc.

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[8] Tarek M. H., Tarkhani F., Jackson Ch., and Armstrong Ph. - Information technology and economic growth in Canada and US, [Online] Available from: http://www.bls.gov/opub/mlr/2002/10/art1full.pdf [Accessed 20May 2010].

[9] Turban E. King D. Viehland D. and Lee J. (2006) Electronic Commerce a Managerial Perspective, Third edition, page 38, Pearson Education ltd New Yersey, NJ, USA

[10] Nedelko Z. (2013) The role of information and communication technology in supply chain, [Online], Available from: http://www.jlst.org/uploads/nedelko-jlst.pdf [Accessed 22 March 2013].

Information has led to the fast, precise and large-scaled publication of information in different geographical places all the time. Circulation of information with these characteristics has resulted in decreasing costs, saving in localities, expedition in doing activities and thus increasing profitability and efficiency and effectiveness of technology. Rapid development of information technology caused special attention to be focused in information knowledge[11].

3. The importance of the application of information technology in contemporary business processes

In XXI century competitive advantages of enterprises increasingly depend on information technology which is installed on computers, laptops and other electronic devices that are used to carry out their daily chores. In this dynamic market conditions, it is impossible to imagine modern business without adequate information technology application. Therefore we can say that the application of information technology is a prerequisite for the development of modern business processes.

Information technology has great influence on the contemporary business environment. In some cases it replaces in some other people helps reduce the overall load on the job by adding the time spent in constructive activities, reducing the usual work time and increase efficiency.[12]

Today, new technologies, especially Internet technologies are changing the global flow of information, trade, investment, banking services and financial activities.[13]

Application of information technology in contemporary business processes has a result of: greater ability of the company to customized environment changes, higher production volume, higher accumulation, better segmentation of the market, reduce costs, etc...

Information technology has an impact on all companies, products and services offered by them. It affects all employees at all levels of the enterprise, from senior management, middle and lower officials. Applying advanced information technology is affecting the drastic reduction of costs for the company and to change its organizational structure as well as timely response to challenges arising from competition.

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[11] Talebnejad A. (2012) "The role and effect of information technology in the creation and maintenance of sustainable competitive advantage" [Online] Available from: http://www.srlst.com/ijist/ijism-Vol6No1/ijism61-59-72.pdf [Accessed 3 January 2013].

[12] Jobber D and Lancaster G (2006) "Selling and Sales Management", 7th edition,, page 351, Pearson Education Limited, Essex, UK

[13] Berisha-Namani M. (2009):"The role of information technology in small and medium sized enterprises in Kosova", [Online] Available from: http://www.fulbrightacademy.org/.../Berisha+Paper+IT+in+SMEs+in+Kosovo.pdf [Accessed 22 May 2010].

Enterprises are aggravated to develop business policy based on the use of information and new information technologies and to transform their business from the business classic to digital business.[14]

Information technology is synonymous with economic development and improved quality of life and the driving force of economic development. For the growth and development of enterprises, the application of information technology is of particular importance because it allows the creation of products and the provision of new services and thus achieve faster and more efficient communication with customers.

Therefore, all companies that wish to be competitive in the market, keep up with the speed of development and changing conditions in the contemporary business environment, you need to take advantage which enables the application of advanced information technology.

According to Jagdish N. Sheth, a number of forces are responsible for the changing role of information technology in an organization. He identified four distinct forces which seem to drive the strategic importance of information technology/ they are:

a) *Intense Competition*. Intense competition is forcing the organizations to become more efficient and effective. One way to increase efficiency and effectiveness is the use of information technology.
b) *Globalization of Business Operations*. As the industry becomes more global in its procurement, manufacturing and marketing operations, it requires greater use of information technology to reduce time and space barriers.
c) *Organizational Changes.* With constant reorganization, as well as increased mergers and acquisitions, top management recognizes the need for flexibility through compatible information technologies.
d) *Technology Revolution*. The performance-price ratio of a new generation of information technologies is making them more affordable and useful to the organization.[15]

Understanding the importance of the application of modern information technology for business processes is crucial. Information technology is used to solve complex problems, to enhance security during the decision making process due to the use of information processed by this technology, to improve the quality of operations and save time and money. Information technology not

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[14] Berisha-Namani M. (2008) "The role of information technology in small and medium sized enterprises in Kosova" [Online] Available from: http://www.fulbrightacademy.org/.../ Berisha+Paper+IT+in+SMEs+in+Kosovo.pdf [Accessed 1 June 2010].

[15] Jagdish N. Sh. (2008) "Strategic importance of information technology" [Online] Available from: http://www.jagsheth.net/docs/Strategic%20Importance%20of%20Information%20 Technology.pdf [Accessed 20 February 2013].

only improves the work efficiency, but also enables a new way of working that is based entirely on the use of information technology.

4. Information Technology, computer networks and business electronic

Contemporary business cannot find application without the use of information technology and computer networks especially the Internet which provides the necessary infrastructure for the application of electronic business.

Computer networks link for two or more computers between themselves. Computer networks were born as a result of entering into a larger number of computers. Computer network enables communication between information system users. Computers are connected to each other in computer net in a unique way according to standards of communication, which means that "speak the same language." [16]

Computational mesh network is composed of two or more computers with peripheral devices which are interconnected to each other with the specific medium. According to the type of media used for connecting computers, networks exist: coaxial cable, fiber optic cable, copper wire cable and radio waves.[17]

The mesh can be what you will, by simple connection of computers in a country, which are associated with a special tool interconnection to global networks such as the Internet, which uses the number of communications tools, including satellite technology. Networks are used for transmission of data, voice, and visual appearance of the users of the network. All networks, large or small, usually are constructed in that way that enables the users on the network to share resources and communicate between themselves. Some of the reasons for connecting computers on the network are: data sharing, division of hardware, software, communication between users, etc. Most small or large computer networks are connected to the Internet, which means that communication and resource sharing opportunities are almost unlimited. One reason that an enterprise decides to mesh its computers, is that then all users will be "involved" in the global Internet network.[18]

In addition to ongoing efforts to build high-speed computers, the large central and external memory, at the same time it was thought for a more effective use of existing resources in the computer. Thus was born the idea of connecting computers to each other, creating the so-called computer networks.

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[16] Berisha-Namani M. (2004) Informatika e biznesit, page 141, Universiteti i Prishtinës, Prishtinë, Kosovë.

[17] Mehmeti A. Sh. (2006) Fjalor Enciklopedik nga Teknologjia e Informacionit, page.69, Prishtinë, Kosovë

[18] Habraken J. (2001) Osnove umrezivanja, përkthim, page 5, Mikro knjiga, Beograd, Serbia.

Being connected computer, have the opportunity to share with each other information in long distances without time restrictions of space.[19]

Connection to the network is done with the help of Hardware and Software. Hardware represents the physical link between two or more computers. Hardware group includes: telephone connection, optical links (optical fiber) & gateway router and the computers themselves. Software is called the programs that enable the use of hardware for communication. Network software is composed of two or more computer, connected to each other. Today there is international computer network which makes connecting all the world's computer networks called the INTERNET, which comes from Network International English word which means international network.[20]

Fundamental reasons to create a computer network can be summarized as follows:

1. Common use of information or data
2. Using common hardware and software
3. Provide management and centralized support. [21]

From the standpoint of territorial extending, computer networks are shared in: Local Area Network (Local Area Network, LAN), Metropolitan Network (Metropolitan Area Network MAN), Wide Area Network, (WAN) and Network created by union of all networks, the Internet. [22]

- Local Area Network (LAN) - wire communication which connects a group of computers, printers and other equipment located in a designated space (e.g. a building). Local Area Network enables any connected devices to exchange information with all who are connected to the network. The most common example is Local Area Network connection between computers in a single printer.
- Metropolitan Network (MAN) - computer networks that connect all local area networks within the geographical area of a city.
- Wide Area Network (WAN) - computer networks that use information and communication technology to connect users to a wider geographical space. These networks are most often connected through different cables or telephone lines. Wide Area Network consists of two or more Local Area Networks interconnected among themselves to servers.[23]

As a result of the application of information technology in computer networks we create Networked Enterprise which enabled the provision of new

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[19] Ninka I. (2007) Teknologji Informacioni page 96, UFO Press, Tirana, Albania.

[20] Dragusha E. (2005) Interneti, page 5, Prishtinë, Kosovë.

[21] NinkaI. (2007) Teknologji Informacioni , page 96, Ufo Press, Tirana, Albania.

[22] NinkaI. (2007) Teknologji Informacioni , page 96, Ufo Press, Tirana, Albania.

[23] Cartwright R. (2005) Key Concepts in Information and Communication Technology, page 107, Palgrave Macmillan Hampshire, UK

services that fundamentally change business processes. Networked Enterprise has direct interactive relationship with business customers and at the same time overcome the difficulties of communication between the company and surroundings. This enables the enterprise to include partners, consultants, contractors, customers, business customers and suppliers distributors in the business. Will therefore be to provide products and services to market more quickly and that the company will be able to respond to environment changes.[24]

4.1. Internet and electronic business

Internet is public and global communication network that provides direct access to anyone in the vicinity of a Local Area Network (LAN) or Internet Service Provider (ISP).[25]

The Internet is a network with opportunities for public involvement computer-related networks that transmit certain data using Internet protocol (IP) standard. In other words, the Internet can be thought of as a worldwide computer network system, or as a network of networks in which users at any of the network computers, have the option (if permitted), to obtain information from any computer.[26]

Well, the Internet is a collection of millions of local networks connected among them, thus creating a global network of communication. The Internet is a new technology in communication, which has its great impact on society than his predecessors, telephone and television.[27]

Internet within its covers all telecommunications resources that enable searching, finding and sharing of information, electronic messages (e-mail) or file, with audio, video, photos and more. Access to this network is open to all who are provided with an address by an authorized body (ICANN).[28]

Internet beginnings dating back to the early 60th century, when it started as an attempt to connect with the network the American Army bases across America. Then the same thing started to make the university, connecting with each other and later universities served as an Internet Service Provider (ISP) for students and teachers, in order to become a much greater exchange of information. Since the early 60s, the American military thought on how to protect personal information collected in the event of a nuclear attack from

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[24] Ibid, page 107

[25] Turban E. King D. Viehland D. Lee J. (2006) Electronic Commerce a Menagerial Perspesctive, Third edition, page 241, Pearson Education ltd New Yersey, NJ, USA

[26] Ninka I. (2007) Teknologji Informacioni, page 102, UFO Press, Tirana, Albania.

[27] Kasumi B. (2005) ECDL Internet Explorer&Outlook, page 361, Smart Bits, Prishtinë, Kosovë.

[28] Mehmeti A. Sh. (2006) Fjalor Enciklopedik nga Teknologjia e Informacionit, page 186, Prishtinë, Kosovë.

opponents. As the best solution to this problem seen an electronic network. With this network should the same data be recorded and distributed to computers that were in the distance. In the event of a change or the introduction of new data, should changes be made to all computers connected to that network. Each of the connected computers should communicate in some connection with other computers. Only in this way it was possible the continuity of communication in the event of the destruction of any of the computers, or weaned of any relationship.

The Internet was originally created by ARPA (Advanced Research Projects Agency) in the US in 1969 and was called the ARPANET. An objective of ARPANT was to keep lines of communications flowing in the event of a nuclear attack. Today, this may seem less of an issue than in the days of the Cold War, when the US Department of Defense thought such an attack was probable. Engineers used the technology developed in 1962 by the Rand Corporation, one of the pioneers in the computer industry, to ensure that data could be transmitted over the network even if a portion of the network became disabled.[29]

Circa 70s began the commercialization of the Internet, but at that time could be used only e-mail and was very expensive. In the early '80 started to implement a new protocol for controlling the mode of delivery of information through a network of so-called TCP / IP, which harmonizes the flow of information across the network and identifies the users of the network through the Internet address. This protocol was the key that enabled and enhanced communication between networks before which resulted in a communications network all over the world which we now call the Internet. In late 1990, Tim Barners Lee created the first website. His discovery, which is part of the protocol HTTP (Hyper Text Transfer Protocol) and URL (Uniform Resource Locator), enabling the creation of rich text documents, pictures and voice called websites which are linked through the network TCP / IP and together represent the World Wide Web known and spread throughout the world.

In May 1992, he promoted programs for browsing Web pages called Browser. Today the best known are Microsoft Internet Explorer and Netscape Navigator.[30]

In the early years of the 90's the Internet made a "boom" with its full commercialization: firms initially started with two people and with a capital of

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[29] Networks (2000) Internet, Intranets and Extranets, [Online] Available from: http://www. jagsheth.net/docs/Strategic%20Importance%20of%20Information%20Technology.pdf [Accessed 15 February 2013].

[30] Coffman K.G. and Odlyzko A.M. (2001) Growth of Internet [Online] Available from: http:// www.dtc.umn.edu/~odlyzko/doc/oft.internet.growth.pdf [Accessed 20 June 2010].

$ 500,000 occupied stock of the world and employed thousands of people. E.g. Yahoo started in the 90s by two people (Japanese), with initial capital of $ 1,000,000, and now its value in scholarships in the amount of $ 300,000,000.[31]

All computers on the Internet communicate with each other using a set of protocols TCP /IP (Transmission Control Protocol / Internet Protocol). TCP / IP provide the set of protocols which have been defined way transfer of data between computers on the network and have a great advantage in comparison with other protocols. TCP is responsible for the organization and delivery of data packets to be sent, while IP is responsible for their transfer across the network.[32]

The Internet has created a new space for communication, dissemination of data and information and business development, enabling entry into a new era that is computerized and digitized economy. Around the world, more and more companies use the Internet as an opportunity to apply electronic business. The use of the Internet has changed business process in many companies, in which e-business was accepted as a new form of performance without the use of documents and direct contact in the trading of various products and services delivery."[33]

Different companies through internet websites notify their customers with the characteristics of products and services, their addresses, contact numbers, the way where you can buy, the method of payment for products and services purchased (usually through e-business) , communicate with customers, obtain information recessive them on meeting the needs and requirements of the products and services purchased.

From influence of communication and information technology, the global economy is experiencing radical change such technical, technological and organizational. These changes are primarily the result of the expansion of the Internet, which made it possible for production, consumption and circulation beyond borders between countries and increase the level of dependence between states. While earlier technologies, such as electricity, telephone technology, automotive industry etc.. Asked over decades to reach critical level Internet usage reached this for a few years.[34]

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[31] Turban E., King D., Viehland D., Lee J. (2006) Electronic Commerce a Managerial Perspective, Third edition, page 236, Pearson Education ltd New Yersey, NJ, USA

[32] Dragusha E. (2005) Interneti, page 13, Prishtinë, Kosovë.

[33] M. Berisha-Namani & M. Badivuku-Pantina.:"Internet usage and electronic business development in Kosova", [Online] Available from:lexetscientia.univnt.ro/.../216_lesij_css_XV_2_2008_art_17.pdf [Accessed 18 June 2010].

[34] Berisha-Namani M.& Badivuku-Pantina M.:"Internet usage and electronic business development in Kosova", [Online] Available from:lexetscientia.univnt.ro/.../216_lesij_css_XV_2_2008_art_17.pdf [Accessed 18 May 2009].

E-commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network.3 though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals.[35]

Electronic business is short term that includes a wide range of technology, infrastructure, processes and products. It merges and close applications industries, manufacturers and users, exchange of information and economic activities in a global marketplace called the Internet.[36]

Although the term "e-commerce" is relatively new (it was coined in the early 1990s), large corporations have been conducting de facto e-commerce for decades by networking their computing systems with those of business partners and clients. For example, the banking industry uses *Electronic Funds Transfer (EFT)* to transfer money between accounts. In addition, many companies employ *Electronic Data Interchange (EDI),* which facilitates the standardization of such business forms as purchase orders and invoices, allowing companies to share information with customers, vendors and business partners electronically.[37]

The impact of the Internet in the development of electronic business is irreplaceable.

Internet as a global communications network is the country in which the product advertised and covered the most in the world. Most of the websites on the internet enterprises begin their work as an opportunity to promote products and services.

Wide impact of the Internet is seen to facilitate communication. It fundamentally changes the way companies create and distribute information. The Internet offers the possibility of transmission of messages, values and images.

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[35] Zorayda R.A. (2003), e-Commerce and e-Business, [Online], Available from: http://www.kau.edu.sa/Files/830/Files/61164_Ecommerce%20and%20E%20Business.pdf [Accessed 20 may 2012]

[36] Mann C.L., Electronic commerce in developing countries, [Online] Available from: hhtp://www.iie.com/publications/wp/00-3.pdf [Accessed 6 June 2010].

[37] Deitel&Associates Inc (2004), e-Business&e-Commerce [Online] Available from: http://people.dsv.su.se/~miwebb/kapitel/kap38.pdf [Accessed: 20 May, 2012].

4.2. Intranet

Intranet is an internal corporate network built using Internet and World Wide Web standards and products. Employees of an organization use it to gain access to corporate information.[38]

Intranet servers, clients, databases and different programs with each other and protect the information from unauthorized access through protective wall (firewall).

The term intranet is used to describe Internet technology used on a local area network to provide e-mail, web pages, and other communication methods to employees. Employees use the same browser used to access the Internet to access to company's Intranet. However, anyone who is not connected to the organization's local area network is unable to access the Intranet. [39]

Intranet is a private network with limited access to a certain number of workers in the enterprise. Intranet may use only authorized workers in an enterprise. Intranets are limited to information concerning the company and contain exclusive information and sensitive nature. Intranet serves to develop the communication and cooperation between authorized employees, customers, suppliers and business partners. After that allows intranet access via the Internet, no additional equipment required for Internet networks. This open connection and flexibility is the highest priority of the intranet.

To build an intranet network servers is needed: web browser (browser) for publication on the internet network tools, databases, networks, TCP / IP (LAN or VAN) and "firewall" that protects the intranet from unauthorized approaches. "Firewall" is software and / or hardware that allow only certain features users have access to a protected network. "Firewall" is a safety device which defines the combination of hardware and software between the firm's internal network and the Internet. Expression (firewall - walls for fire protection) comes from construction and refers to walls that are able to isolate the fire by preventing the spread. 'Firewall' networking sites in the same way trying to prevent security threats from hackers or viruses.[40]

General functions that can provide intranet are:
- Corporate websites / departments / individual
- Access to databases (database online)
- Software (search assistance with certain words)
- Interactive communication (speaking, audio and video conferencing)

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[38] Principles of Information Systems, (2009) The Internet, Intranet and Extranet, Available from: http://azportal.uum.edu.my/tm5013/chapters_summary/ch07.pdf [Accessed: 20 June, 2010].

[39] Networks: Internet, Intranets and Extranets (2000), Available from: http://azportal.uum.edu.my/tm5013/chapters_summary/ch07.pdf [Accessed: 17 June, 2010].

[40] Turban E., King D., Viehland D., Lee J. (2006) Electronic Commerce a Managerial Perspective, Third edition, page 245, Pearson Education ltd New Yersey, NJ, USA

- Distribution of documents (documents download)
- "Groupware" (e-mail and discussion board)
- Telephone (intranets are perfect conduits for computer phone)
- Integration with e-commerce (electronic transaction sites)
- Extranet (link geographically dispersed branches, customers and suppliers authorized parts intranets create more satisfied clients, suppliers more effective and cost reduction).[41]

According to a survey conducted by Information Week Online information which are more frequent in intranets are: regulations and company procedures, distribution of documents, a list of phone numbers, forms of human resources, training programs, databases on customers, catalogs and product manuals, warehouses data, archives, photographs, orders sheet and transport services on reservations.[42]

Given these data, we can say that the intranet can be applied to:

- Electronic business (sale or purchase can be made via the Internet)
- Customer service (Examples of UPS, DHL and FedEx have shown that knowledge of the location of purchased products makes customers more satisfied)
- Shorter time to market (easy access via the Internet on accelerating product development teamwork)
- To facilitate the dissemination of knowledge (websites assist the dissemination of knowledge)
- Facilitating group decisions and business process (Cooperation in the group through the Internet is becoming more standard platform intranet)
- Empowerment (Everything should be offered to anyone who has the right to know)
- Virtual Organization (Internet Technology removes technology barriers not compatible between businesses)
- Distribution of software (intranet server can be used as storage and software packages so as to avoid many problems about maintenance and support)
- Document Management (Employees can access, documents, photographs, drawings, maps and other documents regardless of their location)
- Project Management (Distribution and evaluation of progress reports)
- Training (websites are valuable sources of information)
- Eliminate the distribution of written information (Eliminating the use of paper in the company brings savings, easier access and greater efficiency)

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[41] Ibid page 245
[42] Ibid page 245

- Support administrative process (internal management in manufacturing, administration, procurement, deployment and distribution can be supported effectively by linking these with each other in a single environment, intranet, and then these functions can be integrated into the connection between organizations, extranet.[43]

4.3. Extranet

An Extranet is frequently used to link business partners, such as suppliers, vendors and trading partners, who conduct frequent business transactions with an organization. Let's say you provide office supplies to 100 businesses. Instead of the office staff quoting prices, checking availability, and tracking orders, every customer can do this by logging on your Extranet. [44]

Extranet expression refers to the union of several intranets and the creation of a joint network of several companies, therefore extranet is intranets connection of two or more different companies.

When a part of the intranet is allowed access to customers, business partners, suppliers outside the company, intranet that part goes on the extranet. Using extranet companies allow clients and customers trusted partners to have access to certain informations protected by "firewall".[45]

Extranets integrate not only the technology but also applications such as those for: performance and processing orders, coordinating the logistics of transportation, funds transfers, offerings etc. Enterprises that integrate their intranet to the Internet very quickly end up involved in extranet. Effective integration depends on the treatment of intranet and internet as an indivisible service. Businesses that achieve this reach to 'travel' through the internet in other intranets and return to their intranet.[46]

Extranets have become dominant tools in performing routine transactions and private as well as business transactions.

The example below shows how an employee submits a claim to the insurance company.

- The employee fills out a form for medical benefits in the company's intranet.
- Complete Form submitted by travel from the company intranet, via the Internet in the insurance company Intranet.
- Accepts insurance company Intranet form.

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[43] Ibid page 248

[44] Networks: Internet, Intranets and Extranets (2000), Available from: http://azportal.uum.edu.my/tm5013/chapters_summary/ch07.pdf [Accessed 17 June 2010]

[45] Cartwright R. (2005) Key Concepts in Information and Communication Technology, page 66, Palgrave Macmillan Hampshire, UK

[46] Ibid page 250

- Form processed by an insurance company worker
- After processing and formal approval is returned through the author's website
- The author accepts approved form, which can be a confirmation of the request, payment or 'refund' processed through one of the mechanisms accepted for payment through the internet. "[47]

Extranets satisfy security concerns by using encryption, authorization, and integrity checks. Encryption mixes up data so it isn't easily read. Authorization requires the customer to use a unique ID and password to access the Extranet. Integrity checks consist of logic written into a program to ensure that the interaction with the customers makes sense. [48]

An extranet or "extended intranet" uses network protocol TCP / IP internet to connect intranets that are located in different locations. Transmissions between intranets usually conducted via the Internet, which offers no privacy or secure transmission. Therefore, where we used extranet, it is necessary to improve the safety of the parts connecting to the Internet. This is done by creating tunnels for secure flow of data using cryptography and authorized algorithms. Internet technology known as virtual private network tunnels (VPN - Virtually Private Network).[49]Extranets provide secure connection between corporate intranets and intranets for business partners, suppliers of materials, financial services, and government clients. Access to the intranet is usually limited to agreements cooperative parties, is strictly controlled and is open only to authorized employees. Protected environment extranet enables groups to collaborate, share exclusive information and to exchange them safely. In general, extranets combine the privacy and security of intranets to the global reach of the Internet, providing access to external business partners, suppliers and customers to a certain degree, the company's network.[50]

5. Conclusion

The competitive environment has changed dramatically in past two decades and has become very complex. Today companies act in an increasingly dynamic and complex environment with the difficulties in adapting themselves to the continuous changes in their environment. In order to be able to compete in this kind of world and to adapt itself to the changing environmental

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[47] Ibid page 251

[48] Networks: Internet, Intranets and Extranets (2000), Available from: http://azportal.uum.edu.my/tm5013/chapters_summary/ch07.pdf [Accessed 17 June 2010]

[49] Ibid page 251

[50] Ibid page 251

conditions, it is necessary to apply new information technology applications in business.

Globalization has an important impact on business environment. In the age of globalizations, integrations and the liberalization of economic activities, business owners need to invest funds to install software and various applications in order to communicate with another business partners and clients.

The role and importance of information technology in contemporary business can be summarized in a few key points:

Application of information technology enables cost reduction for creating, storing, processing, and distribution website and reuse information necessary and essential to the business of the enterprise.

Application of information technology enables increased productivity and production assortments to companies offering products and services.

Application of information technology enables market expansion from national markets to international markets.

With minimal capital outlay, enterprises can quickly and easily find more clients, best suppliers and most suitable business partners worldwide.

Application of information technology enables better communication with business partners, also reduces telecommunication costs.

Information technology initiates projects of re-engineering business processes.

Information Technologists allows reducing costs for storage of products, order produced products and reduce inventories.

Application of information technology leads to improved company image.

Application of information technology leads to improved customer service.

Apply of information technology offers great opportunities for finding new business partners, simple processes, and shorter production cycle.

Information technology enabled wide application of Internet in contemporary business. Internet is public and global communication network that provides direct access to anyone in the vicinity of a Local Area Network (LAN) or Internet Service Provider (ISP). Internet technology is also used within an organization and its business partner by creating an Intranet and Extranet. Intranet is organization's private Internet that enables employees to share information an access corporate data. Extranet is also private Internet, but is used to link business partners, such key vendors, to track orders and other information exchanged by business partners.

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