Presentation of various types of electronic business available on the Internet, Advantages, Disadvantages, Key Requirements and Security Implementation Model of an Electronic Business

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Abstract. This paper speaks about the advantages, disadvantages, key requirements necessary of an electronic business, the infrastructure of the Internet, the existing main networks on the Internet, standards used to develop electronic business and the security of an e-business environment. As we know in an organization the information is an asset that has value and should be protected and diversified. We also propose an implementation model of an electronic business that interconnects two concepts: ERP and e-business. We also speak about the different points between ERP and EBUSINESS concepts that can complete each other in order to make a success electronic business: from technology point of view, based on partner orientation, using an implementation framework.

Key words: electronic business, internet, security, information, standards.
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1 Introduction

Information theory has had remarkable success in technology, especially in digital electronics and computers, where current technologies would have been unthinkable without foundation and progress of this theory. In this article we speak about the e-business, the advantages and disadvantages of e-business, types of e-business, the characteristics for each type of business and the key requirements necessary and the security of an e-business environment. In this context we can say that electronic commerce is a particular form of e-business. There are several definitions for electronic commerce:

- in terms of business processes, electronic commerce is an IT application and a communication system to support and automate business transactions and workflows;
- in terms of service, electronic commerce is a tool to respond to the need to reduce service costs, while improving quality and speed of work;
- in terms online, electronic commerce provides the capability of buying and selling information, enjoy and Internet services;
- The Internet represents a whole infrastructure, services, users and resources. It also refers to:
  - backbones—high-speed networks that have been made to interconnect other networks in: North America, Europe, South America, Asia;
  - Regional networks that connect universities and colleges;
  - Commercial networks providing access to main communication network subscribers and their networks of commercial organizations for internal use but are connected to the Internet;
  - Local Networks refers to a campus network; Networks available on the Internet are:
    - the Intranet represents a communication system performance of an organization;
    - the Extranet is a concept when multiple intranet websites share the information;
    - VAN (Value Added Network) private networks for the exchange EDI (Electronic Data Interchange) between business partners(e.g. National Bank of Romania has its own communication network RCD);
VPN (Virtual Private Network) is a logic network which combines several technologies of the private networks and for establishing connections and networks to ensure security in transit unsafe;

grid computing used for connecting computer networks around the world, to create and use a global computing environment;

grid network technology offers the opportunity to meet a wide variety of resources including supercomputers, storage systems, data sources and special classes of devices distributed geographically, to be used as a single computing resource;

grid computing is another step in the process of virtualization started by: the process of partitioning a single system virtual machine;

generation homogenous resource virtualization applied to both servers and the central processing and storage resources, networks and application sometimes;

virtualization enterprises especially for distributed organizations;

virtualization outside the organization Internet communication information, integrating information through collaborative networks;

grid computing is a mean of integrating various technologies and solutions to fulfilling a goal;

The important key elements are:

distributed-computing infrastructure that is application support;

virtualization virtualization technologies, platforms and organizations;

virtualization is the ability to provide a consistent view on a set of resources.

The most important features of the electronic business are: persuasiveness, the global access, universal standards, richness of information, density of information and customization.

Persuasiveness is characterized by:

the availability of electronic business anywhere and anytime;

the reducing transactions costs, to participate in a market;

the global access referred to e-business technology allows commercial transactions to go beyond cultural and national demographics;

Universal standards:

for distribution of the content e-business needs hardware and software;

The development of the electronic business that is found on the Internet supposes the usage of the standards like:

TCP/IP-(Transmission Control Protocol/Internet Protocol) is represented by the combination between TCP and IP. These were the first networking protocols defined in these standards;

On the Internet TCP/IP is the communication protocol and is used for communication between computers; also we can say that:

TCP/IP defines the way in how electronic devices are connected on the Internet and how data should be transmitted between them;

The protocols that are found inside TCP/IP standard are:

TCP (Transmission Control Protocol) it is used for the communication between applications;

UDP (User Datagram Protocol) it is used for simple communication between applications; it is included in the Internet Protocol Suite, the principal set of network protocols used on the Internet;

IP (Internet Protocol) this is used for communications between computers; now we have IPV4 (Internet Protocol Version 4) and his successor IPV6;

ICMP (Internet Message Protocol) this is used for errors and statistics and also for supervising and diagnosis the problems from the network;

DHCP (Dynamic Configuration Protocol) represents a network protocol of computers used by hosts (DHCP clients) that assign IP addresses and other information of configuration the network in a dynamic way;

HTML (Hypertext Markup Language) represents a form of markup oriented to the presentation of text documents on one page, using the specialized software called HTML user agent. The best e.g. of such software is
the web browser. HTML provides the means by which the contents of a document can be annotated with various types of metadata and directs play. Rendering instructions may vary from minor decoration of text, such as the indication that a highlighted word or image should be introduced, to sophisticated scripts, image maps and forms. The metadata can include information about title and author, structural information about how is shared the document in different segments, paragraphs, lists, headings and crucial information enabling the document can be linked to other documents to make hyperlinks.

HTML can be generated directly using server-side coding technologies from server such PHP, JSP or ASP. E-mail applications use an HTML editor for composing e-mails and a presentation of e-mails of this type. HTML is one of the first fundamental elements of the WWW and describes the primary format in which documents are viewed and distributed over the Internet. The most important characteristics of HTML are:

- formatting structure;
- hypertext links; the hypertext is how any word, phrase, picture or other element of the document seen by a user (client) can make reference to another document, which greatly facilitates navigation within the same document or multiple documents. HTML, HTTP and URL represents the first specifications over the Internet.
- the platform independence represents something so vital for a varied audience;

HTML appeared in 1989 at CERN being developed by Tim Bernes Lee and was used as a model SGML (Standard Generalized Markup Language) that is international standard. Advanced structure and platform independence are the related advantages of SGML. SGML is a specification for describing other formats and through it the user can create new formats (DTD-Document Type Definitions) can be understood by any software SGML software product by reading the first definitions of new formats. HTML is a DTD, a SGML application. At the beginning of its development HTML had control over fonts but did not allow the insertion of the graphics, as in 1993, NCSA has enriched the language and built the first graphical web browser Mosaic. HTML 1.0 was designed by Tim Bernes Lee and HTML 2.0 was developed at the first Conference in Geneva where was established a group-HTML Working Group which aimed to formalize HTML in DTD of SGML (HTML 2.0). The Official standard HTML is the World Wide Web Consortium (W3C) which is affiliated at IETF (Internet Engineering Task Force). HTML version 2.0 was developed in 1994 and is the standard that is supports all current browsers, including text, reflects the original conception of HTML as a markup language independently of existing objects to their location on the webpage. Version HTML 3.0 was elaborated in 1995 and was developed over HTML 2.0 by adding new features such as: a good control over the text around images and the tables. HTML 3.2 specifically designed to reflect and to standardize practices widely accepted and includes HTML 3.0 tags that are adopted from the authors of the browsers like: Netscape and Microsoft extensions to HTML.

HTML 4.0 is the version that improves the accessibility and structurally concepts of the markup language.

HTML documents are documents in ASCII format and in conclusion can be created with any text editor. In the last time were developed converters that allow HTML formatting of documents created (and formatted) with other editors. These conversions do not keep only partially because previous HTML formatting is incomplete.

XML (Extensible Markup Language) defines a set of rules for encoding documents in a format that is in the same time human-readable and machine-readable. The principal goals of XML implies: generality, usability and simplicity over the Internet.

HTTP IETF (Internet Engineering Task Force) has coordinated the development of the HTTP which represents an application protocol for distributed, collaborative and hypermedia information systems.

HTTP is the most commonly used methods for accessing information on the Internet that are stored on the World Wide Web. The HTTP
protocol is the default text protocol for WWW. If a URL does not contain the part of the protocol, it is considered as HTTP. HTTP requires that the destination computer runs a program that understands the protocol and sent to the destination file can be an HTML (Hypertext Markup Language), a graphics file, sound, animation or video, an executable program on that server and or a publisher the text. According to OSI classification HTTP protocol is a protocol for application level and its evolution is coordinated by the W3C (World Wide Web Consortium).

HTTP errors are:

- 1xx-error information;
- 100-error keeps;
- 101-error change protocol;
- 2xx-error managed response;
- 200-error ok;
- 201-error created/made;
- 202-error accepted;
- 203-error unauthorized;
- 204-error free content;
- 205-error content recovered;
- 206-error partially content;
- 3xx-error redirects;
- 300-error different multiple choices;
- 301-error modified moved permanently;
- 302-error found;
- 303-error see another source;
- 304-error unchanged;
- 305-error uses proxy;
- 306-error unused;
- 307-error temporary redirection;
- 4xx-error user;
- 400-error wrong application;
- 401-error unauthorized;
- 402-error requires the payment;
- 403-error forbidden;
- 404-error not found;
- 405-error method not allowed;
- 406-error unacceptable;
- 407-error proxy authentication;
- 408-error request expired;
- 5xx-error server;
- 501-error omitted/unknown;
- 502-error carries out wrong;
- 503-error not available;
- 504-error timeout exit gate;
- 505-error http version not supported

HTTP 0.9 is the first version made by Tim Bernes Lee and his team, is very simple and with many shortcomings and is quickly replaced by other version.

Version HTTP 1.0 was introduces in 1996 by RFC1945 and has brought many improvements. Version HTTP 1.1 is used for improvement and for repair the previous versions.

Version HTTP 1.1 provides method “TRACE” with which you can follow the path to webserver and check if the data were correctly transferred. This make follows the path through different proxies to web server, equivalent to a trace route application level.

- URL:

As we know in computing science a uniform resource locator or a universal resource locator (URL) represents a specific character string that constitutes a reference to an Internet resource. URL (Uniform Resource Locator) represents technically a type of uniform resource identifier (URI) but in many technical documents and verbal discussion URL is used as a synonym for URI.

The richness of information refers to the complexity and the content of the messages that may be available on the Internet like: animated graphics, video and audio.

The interactivity refers to the use of e-business technologies.

The density of information refers to e-business technologies that provide increased security accuracy and timelines of information.

URL can be absolute or relative Internet hostnames—> a hostname represents a domain name assigned to a computer on the Internet.

2. Electronic business-requirements-advantages, disadvantages

Electronic business represents the planning, management and control of a business using Internet technologies, reflecting in organizing transactions (the sale and purchase process) and by offering services to customers and the collaboration with business partners. This term was first used by IBM, which in 1997 launched
a campaign around this term. IBM believes that an electronic business means a way of “secured, flexible and integrated access for development of the business by combining various processes and systems that perform basic operations that enable the business to finding information on the Internet”. One of the most popular and success internet business today is Amazon.com. Web browsers today have security by using digital certificates from VeriSign or companies, which led to the development of electronic business. The IBM believes that using the intranet and extranet the e-business becomes prosperous. E-business is a way of doing business using technologies and creating new companies. The Internet has revolutionized the business world that is in permanent change. The Internet was designed for the information exchange and electronic email, and in time has become the most dynamic business environment. The electronic business takes into account the resources of the organizations and of the partners in new and innovative ways to create strategic advantages. The potential of an electronic business includes all aspects of the business: strategy, organization, processes, technology.

The necessary business requirements are:
1. The increased efficiency of processing;
2. The reduced costs and a minimum number of errors;
3. The increased operating speed;
4. The improving control;
5. The reduce risks;
6. Providing customizable profiles;

With e-business the company achieves:
1. Obtaining the customer loyalty;
2. The expansion into new markets;
3. Creating new products and services;
4. Making gains in market share and market dominance of;
5. Optimization of using records;
6. The potential development of the human capital;
7. Increasing technological value;
8. Improving risk management;
9. An increased productivity;
10. An increased profit;

It knows that in an organization to improve and expand her operation and functions e-business uses information and communication technologies (ICT). [1]

The e-business is made to assure the success of the business in the information age. The development of the electronic business involves:
- the opportunity to sell and to make known their products globally, to evolve;
- the communication with suppliers and customers is more efficient and involves low cost;

The most important component of e-business is e-commerce. The e-commerce is the buying/selling of the products and services via remote data transmission.

The term e-commerce is used to describe the information infrastructure to realize the following functions:
1. Bringing new products on the market (e.g. cyber marketing website);
2. The buyers-sellers meeting (e.g. online stores, the electronic transfer of the money);
3. The delivery of the electronic goods (e.g. the information);

The process of making online business includes the buying products through online services and Internet, also electronic data exchange, which the computer of an institution informs and transmits orders to purchase another computer of the company.

The e-commerce technologies includes all forms of electronic transactions, electronic messaging, the electronic data exchange, the electronic funds transfer, electronic email, electronic catalogs, databases, electronic news and information services, electronic payroll, other forms of electronic communication, the access to online services via the Internet and other electronic data transmission for commercial purposes. The commercial activity based on the Internet has revolutionized in recent years especially the retail commerce and the direct marketing.

The stages of electronic commerce are:
1. Attracting buyers
2. Running orders;
3. Payment;
4. The delivery of goods and services;
5. The resolution further requests buyers;
Electronic business (e-business) extends the concept of electronic commerce by integrating a variety of services such as: customer services, collaboration with other partners, electronic trading within the company.

It changed fundamentally the mode of doing business, the concrete realization of a process of e-business is to conduct several cycle stages:
1. Assessment, knowledge, information;
2. Transformation processes in the core business system;
3. Developing applications;
4. Running applications and ensure system scalability;

In the concept of e-business they are meeting all the local facilities of the Intranet: internal data exchange, management, group work, organization-wide integration of the overall benefits of the Intranet, namely: e-mail, news and weather channels, customer service. Electronic collaboration is very useful, an important argument in this sense, brought people from IBM who said about electronic collaboration “create a team in a record time and increases work efficiency”.

In fact e-business policy of those from IBM is based on: e-mail, e-collaboration and e-commerce. To ensure the success and the development of an electronic business it must exists a very realistic plan and it must take into account the characteristics of electronic commerce. E-business is not just a fashion; they represent a revolutionary approach of the concept “business”. There are changes in how information is used, in which contact the clients, suppliers and employees, marketing, in the promotion mode, etc.

Solutions for e-business must face new challenges successfully, such as:
1. To define new business models for operation;
2. The possibility to work in very diverse networks physically -> B2B (business to business);
3. The need to individualize the consumer- > (Business to Customer);
4. To ensure the security of transactions where both B2B (business to business) and for B2C (business to consumer);

Requirements for electronic business applications:
To be successful new e-business applications must meet certain requirements;
1. The security
2. The marketing and the promotions
3. The development of a new competitive strategy;
4. The security implies:
   - data confidentiality;
   - data authenticity;
   - data availability;
   - data integrity and the control of the access – data view point established by ISO (International Standard Organization);

Security measures:
- VAN networks (Value Added Networks);
- the use of digital certificates;

The digital certificate is used for a variety of electronic transactions including: e-mail, electronic commerce, electronic funds transfer. Electronic commerce requires the use of a certificate for the ensuring the security of the server. The digital certificate is an instrument for establishing a secure channel for communication of confidential information. The e-shops, bank transfers, and other electronic services become, daily, common, convenient and flexible tools and can be used from home. Concerns about privacy and security can be prevented by turning to this new means of communication. The digital certificate provides an electronic way for verification the identity of an individual. Similarly a secure server must have its own digital certificate to show users that the server is used even of the latter and the information provided is legal. The digital certificate uses public key encryption techniques using key pairs, tied together, a public key and a private key. In public key encryption process, the public key is available for anyone who wants to communicate with the owner of that key pair. The public key can be used to verify a message signed with private key to encrypt a message can only be decrypted using only the private key. The security of encrypted messages is based on private key security, to be protected against unauthorized use. In a digital certificate key pair is evidenced by user name and other identifying information.
The digital certificate functions as an electronic way means can be reliably verified website. This allows digital certificates to replace the method of providing a password to access confidential business information or restrict access to occasional users. A digital certificate is signed by the certification authority that issued that certificate. To a message or a transaction we can attach multiple digital certificates, they forming a certification chain where each digital certificate proves the authenticity of the above. The highest authority must be independent authority, known and credible to the recipient.

The security protocols are:
- the protocol SSL (Secure Socket Layer);
- the protocol SET (Secure Electronic Transaction);

Protection with the firewall:
In computer networks, a firewall is a device or a set of devices configured to filter, encrypt or to mediate traffic between different security domains based on predefined rules. The firewall solutions are of two types:
- protection of the firewall;
- hardware business solutions dedicated to protecting entire network traffic of a company or institution;

a) Personal firewalls that monitor traffic on dedicated computer;

b) Based on standards- in order to ensure application portability on different platforms clients or server;

c) Scalable- the applications makes requests to the large number of variables, unpredictable and fast;

d) Developed around a server- in order to provide improved management and expansion possibilities characteristic of a modern electronic business applications;

e) Easy to develop and implement;

f) Easily managed- by using certain interfaces to address a large audience of users and to reduce maintenance costs;

g) High availability- refers to the desire to have access to information from the network;

Advantages of e-business:
A. Worldwide presence:
B. The marketing and the promotions;
C. The development of a competitive strategy;
D. Creation and opportunism for all countries;

E. The presentation of goods and services to all people all over the world; [2]
F. Online connection with the others; [2]
The disadvantages of e-business are:
A. Sectorial limitations;
B. E-business solutions;
C. E-business solutions cost optimization;

Domain of e-business:
The e-business after the network communication are divided into:
1. Intranet
2. Extrnet-> B2B (business to business)->with the reference to the BBT business model, negotiation is one of the key steps for B2B ecommerce.[3]

1. Internet ( interconnected network) –B2C partners (Business to Consumer) -> refers to the World Wide Web and is the only worldwide network of computers interconnected by communication protocols such as TCP/IP (Transmission Protocol/ Internet Protocol), specifically in this case between B2C consumer;

3. The Internet Business Types

The principle types of e-business that exists on the Internet are:
- E-commerce;
- e-shop;
- e-mall;
- e-auctions;
- english auction;
- dutch auction;
- sealed first-price-auction;
- sealed second price auction;
- silence auction;
- e-proqurement;
- e-banking;
- e-learning;
- e-directories;
- e-brokering;
- e-leasing;
- e-gambling;
- e-engineering;
- e-working;
- e-mailing;
- e-marketing;
- third marketplace;
virtual community, e-service providing;

- Models of e-business:
  - The B2B (business to business model);
  - The B2C (business to consumer model);
  - The C2B (consumer to business model);
  - The C2C (consumer to consumer model);
  - The e-government: B2G (business to government), G2B (government to business), G2C (government to consumer);
  - the nonbusiness model;
  - the intra-business model;


Electronic shop (e-Shop) is implemented through a website. This website is managed by the company by marketing and selling their products or services. Contains catalog of products or services with technical and commercial describes for each position in the catalog. All these descriptions are generally managed by a database management system (DBMS). DBMS deals with the storage and data manipulation (INSERT operations, UPDATE, DELETE) and provide data access capabilities. Average version contains facilities for taking orders (e-mail or interactive forms that will complement customers) and extended version includes the possibility to make online payment (credit card or electronic versions). The main idea of e-commerce business is to implement physical, material on the website. The e-shop presents its catalog of products and services on the Internet. Products are offered at different price categories by focusing on test quality, delivery speed and efficiency before deciding to buy more expensive products. Internet marketing suitable products are usually those that can be written easily and do not require the sense of touch: books, airline tickets, software, DVDs.

The e-mail is a collection of e-shops stored under a common umbrella which generally accept common payment. An e-mail can be achieved using various methods of transactions, depending on the type of services that the e-mail owner wishes to offer. An e-mail is defined as a mall with a strong network, with a marketing strategy very well planned, with an opening presentation, was suitable which can be accessed in several ways, having a structure suitable for shops and services and to provide such services as current, regional or sectorial. Recipient e-mail can obtain profit from the advertising, fees levied on the transaction.

E-auctions -> Auctioning products and objects is a successful model on the Internet. Because it is an area of great interest, can be used both for electronic commerce type and can be integrated in e-shops.

The operator of e-auction elaborates a mechanism for placing the auction, to bid via e-mail and also offers services of payment and delivery.

The electronic auction is the process which one buy or sell things, providing products for auction, accepting bids and selling that article to which gave the highest price.

Currently there are five types of electronic-auction:

- English auction;
- Dutch auction;
- Sealed first price auction;
- Sealed second price auction;
- Silence auction;

E-procurement -> for procurement of goods and services large companies and public authorities organize auctions. The tender specifications publishes on the Web, decreases both time and cost transmission, increasing the number of companies taking part in the auction. This increases competition and lowers price.

E-banking -> online banking transactions (the accounts, money transfers, checks, payments, consulting).


Web based learning and training offers a new dimension in digital learning/training. Large companies offer online training opportunities, such as courses of information provided by the companies as Cisco, Sun, Microsoft. Another word that circulate in this context is the education in a virtual university (University Virtual Education) in the successfully running dozens of such institutions, called open

Yearbooks and virtual catalogues have always had an important role in finding a particular product or service. So called “white pages” for private phone numbers and “yellow pages” for the mobiles of the organizations have become essential in the process of locating a person or a business (and service providers). In addition, the telephones of the companies have the possibility of finding information about subscribers. These two types have migrated on the Web. The information is available through a website, providing a centralized operation, anyone, anytime.

The WWW space allow that the retrieval of the information must be easier and also more difficult because the volume of information have grew up in an unexpected way with the advent of the Internet and especially Web.

E-brokering->buying and sell of the online shares.

Information skills are required through the value chain of service providers. This need can be satisfied not currently known search engines and catalogues, so that its owners have migrated database dedicated to providing web archive indexed for periodicals, patents and market information, also scientific literature.

Some of the commercial services are rendered for a fee or subscription-based system or through electronic money or e-cash cyber cash. Were set up research units and agencies trying to create mechanism for detecting semantics, but the basic services that are based on human experience, that experts in the field remained the paramount services for business . Besides direct sales and subscription system, advertising hosted on the website, are also often the profit generated often by the e-shops and websites in general. But Internet advertising is not always possible or appropriate: electronic design shop allows or advertising in stores, depending on the type of transactions charged in the e-mail.

Currently, banner advertising, the most popular form of advertising is placed on the website with the appropriate content, like your home page, pages resulting from searches by keywords. However commercial activities can generate income only if the website has a high traffic.

Advertisers are interested of a particular website, only if there are no guarantees in terms of number of online visitors.

E-leasing->online leasing operations are operations where by one part called financier sent right to use the immovable whose owner is the other part called user, the request for a periodic payment, called rate leasing, and at the end of the lease financier is obligated to respect the right of the user option to purchase the asset, extend the lease without changing the nature of the lease, but not earlier than 12 months, if the parts so agree and the user pays all obligations under the contract.

E-gambling -> online gambling

Gambling is one of the most profitable business on the Internet. In the real world gambling is restricted by many laws that make survival difficult casinos.

The owners of such games are forced to pay high taxes to state, which makes it hard to create something new competition. Using the advantages of Web honestly, gambling remains legal, but incumbent state taxes remain much lower.

To any casino physically -> restricted inherent in a particular geographic area, online casinos have many opportunities to attract players from all over the block.

Engineering has changed great lately. Only a few years ago, engineers working with documents (plans, drawing, weather, currency) that must exist in multiple copies in each physical office. If a document had to go in another location, then it was sent calls to the traditional postal services. The whole process involves low velocity and possible errors.
Internet technologies have charged all that, printing and an increased speed in communication, collaboration at a much higher level than the existing one before. Now, each Web user can participate to a project, can share some code that has reserved time to schedule it. Currently, engineers from around the world can participate in developing a collaborative project using by different services based on Web technologies (e.g. Microsoft’s Share Point or sourceforge.net).

E-working—> virtual enterprises —> it is a network of independent firms in a connection one with each other using information technology which shares skills, infrastructure and business process in order to meet existing market demands.

E-mailing—> electronic mail:
E-mail or electronic mail is the system that allows the transmission of messages over the Internet. In the digital area the e-mail is indispensable for business. Electronic mail includes avatars of letters and phone calls. It is possible to attach files containing formatted documents, presentations, images and sounds— a true multimedia content on offer and more. Information can be shared more easily. Also increasingly by electronic mail advertising can be done in the context it used spams —> promotional messages.

Currently the most famous email providers are: Yahoo, Microsoft and Google.

E-marketing —> Promotion of products and service
The traditional marketing focuses on a particular group of potential customers, especially trying to create a positive image for a particular group (target audience). Communication through ads does not allow the marketing team to achieve immediate results of customer feedback.

The WWW space allows companies to react in a manner to individual customer needs. All clients are treated in their mode, 1-1 marketing becoming a standard relationship with them. World Wide Web is one of the main ways to access, use and share information on the Internet. Over the time in his evolution, Web has gone through three stages namely:

1. Syntactic Web—>Web 1.0;
2. Social Web—>Web 2.0;
3. Semantic Web—>Web 3.0;
4. Web 4.0;

Syntactic Web (Web 1.0) it refers to the connection and obtaining information on the Internet and it represents the first page in the development of the World Wide Web.

Web 1.0 is characterized that being an independent system and the hypertext documents are accessed through the Internet. Using a web browser a user can visualize webpages that contains multimedia files, images and text. The navigation between webpages is made with hyperlinks.

The principles on that it is based the success of Web 1.0 are:

- a simple and uniform addressing schema to identify resources on the Internet;
- a simple and uniform representation formalism for structuring information to be presented through browsers;
- a simple and uniform protocol for accessing information (HTTP-Hypertext Transfer Protocol);

The Syntactic Web is:

- A digital library (hypermedia) a library of documents (called webpages) interconnected through hypermedia links;
- A database, a platform of applications a website for accessible applications and that presents their results like webpages;
- A name schema unique identification for documents;

Web 2.0 is the popular term for the Internet technology and advanced applications. Web 2.0 is frequently associated with web applications that facilitates interactivity for sharing information, interoperability, user-centered design and collaboration through World Wide Web.

Websites Web 2.0 including web communities like:

- web hosting;
- web application;
- websites for social networks;
- websites for sharing video
- wiki;
- blogs, mash-ups and folksonomies;

The major characteristics of Web 2.0 are:
reduce the difference between consumers and the providers of content;
the integration between computers and human persons in a new and innovative way;
The social networks are formed from persons that have common goals:
The members of social networks have a main discussion theme like:
- hobby: music, photos, movies, online games;
- religion;
The social networks can activate online or offline. The online social networks use web sites – known as websites of social networks. Examples of websites that are afferent to social networks are: Yahoo! Pulse, hi5.
The Web has limits for:
- the found of relevant information finding based keywords is limited because of the synonyms, orthography;
- the extraction of the relevant information (is difficult realize from one single webpage);
- the representation of the information;
- the interpretation of the information;
- the maintenance of the information the combination and reutilization;
Web 3.0-> the semantic web
The semantic Web (Web 3.0) is an extension of the actual web where the information is provided with well-defined sense, so that to permit a good cooperation of the computers and humans (T. Bernes-Lee, J-Hendler, O. Lassila, “The Semantic Web”), Scientific American, May 2001.
The semantic web is a “web of dates” which permits to computers to understand the semantic, or the sense of information from World Wide Web. This extends the network of webpages that can be read from humans from the insertion of metadata about webpages and the way in which this are interconnected that permit to agents to access the Web more intelligent and to perform tasks on behalf of users. The term was invented by Tim Bernes-Lee, the inventor of World Wide Web and the chief of World Wide Web Consortium that supervise the development of the standards proposed by the semantic web. He defines the semantic web like “a network of data that can be processed in a direct or indirect way about the computers”.
We can say that Web 3.0 can be defined as:
1. A marketing term;
2. The Artificially Intelligent;
3. Semantic web;
4. Virtual Web 3.0;
The deficiencies:
- declared links;
- search engines fails for complex queries;
Virtual community->A virtual community is made up of a group of people that interact over the Internet than face to face. A computer mediated community uses special software to control the activities of participants. An online community such as the one responsible for producing collaborative open source software is often called a community development. The spread of Internet-based on social networks has resulted in socio-technical changes significantly. There have been numerous studies investigating motivation and the desire to be part of virtual communities. They showed that after long periods of time members gain more knowledge on the topics discussed and also a sense of connection with the world. They say the most important value of virtual communities it is given by its members (partners or customers) that add their own information environment than provided by the company. Each member may offer to sell products or services or make requests to purchase product or services. To become a member of a virtual community must pay a fee.

4. The categories of e-business
The main categories of e-business are:
- Business to Consumer Category;
- Business to Consumer Service Provider xSP;
- Business to Business (B2B)/Sell side;
- Business to Business (B2B) Sell side private trading exchange/direct selling;
- B2B sell-side private trading-shared commerce;
- B2B sell-side private trading-commerce syndication (concern, trust);
- B2B sell-side private trading-commerce collaboration;
B2B sell-side private trading commerce brokerage;
B2B sell-side private trading commerce delegation;
Business-to-Business (B2B)/Buy side;
B2B Buy-side Private trading Exchange;
B2B Buy-side service provider;
B2B Market Place;
B2B Exchange;
The key requirements of Business to Consumer category are:
- the consolidation of the channel online with the back end of the business system and with the business processes;
- advanced capabilities to attract and retain their customers;
- the measurement and the analyses of the profit;
The characteristics of that type of ecommerce are:
- to attract buyers, increasing the numbers of visitors and the rate of purchase;
- the growth and maintenance of data for presentation of products;

After we know companies such: Amazon, Dell Computers, Barnes & Nobles are present both in the Business to Business and Business to Consumer category of ecommerce. To ensure the success of the business on the Internet we must use the online promotion. E-marketing promotion is the online advertising or to-market products or services on the Internet. If it refers to placing advertising on Web subsets called web Advertising. On some retail-oriented industries Internet marketing has had a major impact on music, movies, pharmacies, banks, and barter type of advertising industry. E-marketing links and creative and the technical parts of the Internet including design, development, advertising, and sales. Among the most popular online marketing methods and techniques include: search engine marketing, online ad networks, contextual advertising, marketing, advertising in free software, e-mail marketing (including spam), newsletter, advertising and interactive marketing in social media: blogs and viral marketing. Contextual advertising refers to advertising that appear on websites and in other environments where content is selected and automated for the user to see the most relevant advertising content that you watch.
The most developed branch of e-business in Romania is electronic commerce. The main items traded are the IT&C industry, successful online stores such as eMag. On the Romanian market SIVECO and SOFTWIN are leaders in transactions like B2B or B2G. SIVECO is directed more on client-server applications. For a business to successes we must take into account the SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats).
The key requirements of Business to Consumer (Service Provider xSP ) category are:
- multiple stores located in a hosting environment;
- the stores are completely independent;
- the service provider (XSP) normally require a fee/or surcharge based on a size catalog or transactions;

The key requirements of the business are the following:
- to meet the requirements of vendors by providing facilities for the self;
- to attract as many stores;
- to reduce installed cost website and maintaining profitable business;
- easy to use tools for creation and for maintenance of the e-shop;
- tools for merchants to create and maintain the catalogue;
- tools for the analysis of the business of the traders and the service provider for the payment and the billing;
The key requirements of the business to business (B2B)/Sell side are:
The key requirements of business to business sell side are:
- website selling a unique or more marks (brands);
- catalogs, inventory, relationship with companies and solving they own orders in the way;
- to identify buyers and long-term partnerships;
- the selling price of the products is determined by multiple factors such as the amount and the location of delivery date. He is often offered uniquely for each buyer company;
the specific implementation of this models are: Business to Government (B2G) and Business to Employee (B2E);
The key requirements are:
- dynamic prices and custom terms of contracts for each customers;
- the management of the contract;
- the financial management;
- collaboration with customers and the anticipate logistics requirements;
- the analysis of the profit and the efficiency of the contract;
The type B2B sell side private exchange/direct selling have the following responsibilities:
- the data management about the products of the suppliers;
- the management of orders and inventory;
- the integration with various systems of buyer and seller back-end applications such as: ERP (Enterprise Resource Planning), CRM( Customer Relationship Management);
- measuring the business efficiency and responsibility for the dynamic of the market;
The key requirements are:
- administration business relationship with customers;
- the management of the contracts;
- the financial management;
- working with the clients to logistics, command and anticipate needs;
- the control of the access based on roles;
- the analysis of the profit and the efficiency of the contracts;
The responsibilities of the B2B category are:
- create, manage and distribute relevant information on the products;
- the integration of systems and business processes with those of buyers;
- measuring business efficiency;
The B2B sell-side private trading share commerce are:
- developed multiple store/load in a distributed environment controlled by the trader and shared with other partners in a franchise type model;
- each partner controls your website (website private label);
- manage their own catalogues, partners, the customer orders and website respectively;
- the orders and the payments are separated from the partners;
- some key process, such as promotions and loyalty programs can be managed centrally by the seller;
The necessary key requirements are:
- bilateral business-management relations;
- website creation and management distributed to partners available;
- financial management;
- sales management;
- online support for partners (educational, technical);
- collaboration with business partners;
- tools for creating catalog and content management and trader;
- measurement and analysis of profits for partners and vendors;
The characteristics of the category B2B sell-side private trading commerce collaboration are:
- the application of the partners and the processes of the business integrated with the trader;
- the partner is dealing with resolving the order, notice of payment, payment and collection of any value added service;
The characteristics of the B2B sell-side private trading commerce delegation are:
- the buyers search, configure and select products on the dealer;
- the management of the commercial operations is transferred to a partner;
- the partner is dealing with resolving the order, the notice of the payment and the collection of the services after the sale;
The characteristics of the Business to Business (B2B)/Buy-side:
- Centralized purchasing process for direct and indirect suppliers;
- possibility outsourcing;
The category business-to-business (B2B)/Buy side is extending by adding facilities for large companies of e-Sourcing, and supplier selection automatically;
- e-sourcing is the use of Web applications decision support tools, services related to identification, evaluation, negotiation, and configuration relationship of sale to be effective in the sales and the other business operations;
The characteristics of the business B2B Buy side private trading exchange are:
- the purchasing process is centralized for direct and indirect suppliers;
- the possibility of selecting the provider;
- select the model of purchase (contract, auction);

The characteristics of the business B2B Buy Side Service Provider are:
- an application execution for a home run;
- complete independence of buyers;
- request a fee by suppliers and buyers, the regular fee and or surcharge is independent on the size of the catalog or volume;

The necessary key requirements for this category are:
- the acquisition application configuration is simple to configure and manage;
- there are tools for catalog creation, maintenance and the management for buyers;
- there are also tools for business analysis for buyers and service provider;
- there is a service provider charging and billing service;

The responsibilities of the business are:
- The business must meet the requirements of customers to access and acquisition management system;
- the main purpose of this category of e-commerce is attracting more buyers and suppliers;
- should reduce costs for website and the business must remain profitable;
- The characteristics of the category of Business to Business (B2B) Market Place are:
  - standard catalogue;
  - this category of ecommerce is characterized by its own website loaded through an intermediary;
  - the participation is open for the public;
  - there are multiple buyers and sellers;

The key requirements of this category of ecommerce are:
- the prices are dynamic;
- is taking place the administration of the buyers and the sellers;
- there are advanced features for managing it;

The security of e-business:

“Information is an asset that, like other important business assets, has value to the organization, therefore, must be properly protected.” (BS-ISO 27002:2005)

The information in general can be found in various forms:
- electronically stored;
- printed on paper;
- sent by email or electronically;
- display video devices;
- published on the Web;

Electronic security is defined as policy recommendations and actions needed to minimize risk associated with performing transactions on electronic risk which refers to breaches in the system, intrusion or theft or any method, technique or process used to protect the information system. The fundamental objectives of security requirements that are included in a business environment are:
1. Privacy
2. Integrity
3. Availability
4. Compliance with laws
An electronic business environment must meet the following safety requirements:
1. Identification
2. Authentication
3. The control of the access that refers to:
   - the access control system;
   - the network access control
4. Responsibility
5. Audit
6. Business integrity
7. Data integrity
8. Reliability of services
9. Documentation of security;
   Security requirements can be grouped according to the following areas:
1. Defensive security
2. Technical security
3. Security management;
The security is one of the big problems that are addressed in development of the websites.

Using a model of e-commerce security assessment method based on AHP theory proposed by Yajuan Zhang, Xinyang Deng, Dajun Wei and Yong Deng is flexible and practice to deal with used factors like: qualitative, quantitative and insecure. This model will be developed into potential problems making decisions and assessing the security of the electronic commerce.[4] The proposed model contains variables associated with electronic commerce like:
1) Data backup and restore;
2) Local Area Network Security;
3) Web Server Security;
4) Firewall Security;
5) Operating System Security;
6) Applications Security;
7) Database security;
8) Terminal security;
9) Identity Authentication;
10) Ecommerce protocol;
11) Electronic Payment Security;
12) Data Encryption Mechanism;
13) Digital syntax mechanism;
14) Completeness of international legal standards;
15) Stability of legal landscape;
16) Certainty of legal jurisdiction;
17) Cultural difference between customers;
18) Language barrier;
19) Security awareness of staffs;
20) Equipped with the key technical personnel
21) Website security
22) Key management
23) User password management
24) Privilege Management
25) Logistics Management

5. Case study- Implementation model of an electronic business

Over the last years, the domain of e-business has evolved. Our paper proposes an implementation model of an electronic business that interconnects two concepts: ERP and e-business.

For this reason we built a strategy scheme that was implemented in a large company. In order to create the strategy scheme, we must first identify the different points between the ERP and E-BUSINESS concepts that can complete each other in order to make a success electronic business:
A) From the technology point of view;
B) Based on partner orientation;
C) Using an implementation framework;

A) From the technology point of view:
- ERP implementations are based on complex packages of standard software, running on company (or service-provider)-owned client/server architectures;
E-business implementations are supported by components such as webservers, commerce servers, firewalls and gateways; the customization of the ERP system takes place largely using its proprietary development environment where as E-Business application development utilizes open standards such as HTML and Java;

B) Based on partner orientation:
-the audience and stakeholders of an ERP system is potentially every employee in the company as well as key suppliers and customers;
-an e-business implementation is from the onset aimed at integrating business processes with outside business partners and is built on and supported by the ERP foundation. The main focus of the implementation will therefore be integration of cross-company value chains using E-Business tools;

C) Using an implementation framework:
-an ERP implementation has a defined lifecycle of typically 12-24 months depending on scope and other parameters;
-E-BUSINESS implementations need to be significantly faster than initial ERP implementations.

If we combine two concepts with their technologies we discover that an electronic business can be more efficiency like shown in the Figure 2.

In order to concept the schematics based on the elements described above we must built the graphics blocks for the people from different departments involved in using the two technologies.
According to critical issues and success factors of e-business identified in our work, we believe that any electronic business implementation should proceed step by step according with the following figure:

![Implementation parts involved](image)

**Figure 3. Implementation parts involved [1]**

Each supportive element from the figure above provides a service to the relevant management level in order to solve the specific issues in that implementation step. As a starting point, data capture from the first two levels (standards and information flow) is a critical activity for longer-term success. Electronic business that combines the ERP and E-business solution is as a driving force to redefining business processes and value chains poses as challenge for traditional approach to implementing systems to support the business requirements.

### 6 Conclusions

In conclusion we can say that the Internet, the networks and the categories of e-commerce are present all over the world. To have a good environment of e-business we must assure a good security as we presented. We also know that information is “an asset that, like other important business assets, has value to the organization, therefore, must be properly protected” so we must protect her and we must make it her valuable to the organization.

### References

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