Electronic Commerce Course

Electronic commerce is a powerful concept and process that has fundamentally changed the current of human life. Electronic commerce is one of the main criteria of revolution of Information Technology and communication in the field of economy. This style of trading due to the enormous benefits for human has spread rapidly. Certainly it can be claimed that electronic commerce is canceled many of the limitations of traditional business.

For example, form and appearance of traditional business has fundamentally changed. These changes are basis for any decision in the economy. Existence of virtual markets, passages and stores that have not occupy any physical space, allowing access and circulation in these markets for a moment and anywhere in the world without leaving home is possible. Select and order goods that are placed in virtual shop windows at unspecified parts of the world and also are advertising on virtual networks and payment is provided through electronic services, all of these options have been caused that electronic commerce is considered the miracle of our century.

E-commerce is buying and selling goods and services over the Internet.

By the help of the flexibility offered by computer networks and the availability of the Internet , E-commerce develops on traditional commerce . E-commerce creates new opportunities for performing profitable activities online. It promotes easier cooperation between different groups: businesses sharing information to improve customer relations; companies working together to design and build new products/services; or multinational company sharing information for a major marketing campaign.

The followings are the business uses of the Internet. These services and capabilities are a core part of a successful e-commerce program. They are either parts of a value chain or are included as supporting activities:

- Buying and selling products and services
- Providing customer service
- Communicating within organizations
- Collaborating with others
- Gathering information (on competitors, and so forth)
- Providing seller support
- Publishing and distributing information
- Providing software update and patches

Airline and travel tickets, banking services, books, clothing, computer hardware, software, and other electronics, flowers and gifts are some popular products and services that can be purchased online. Several successful e-businesses have established their business models around selling these products and services. Ecommerce has the potential to generate revenue and reduce costs for businesses and entities. Marketing, retailers, banks, insurance, government, training, online publishing, travel industries are some of the main recipients of e-commerce. For instance, banks use the Web for diverse business practices and customer service.

Traditional Commerce vs. E-Commerce

In e-commerce there may be no physical store, and in most cases the buyer and seller do not see each other. The Web and telecommunications technologies play a major role, in e-commerce. Although the goals and objectives of both ecommerce and traditional commerce are the same—selling products and services to generate profits—they do it quite differently. Traditional commerce presents product information by using magazines, flyers. On

the other hand, ecommerce presents by using web sites and online catalogs. Traditional commerce communicates by regular mail, phone yet e-commerce by e-mail.

Traditional commerce checks product availability by phone, fax and letter. However, e-commerce checks by e-mail, web sites, and internal networks. Traditional commerce generates orders and invoices by printed forms but ecommerce by e-mail, and web sites. Traditional commerce gets product acknowledgments by phone and fax. On the other hand, e-commerce gets by email, web sites, and EDI.

It is important to notice that currently many companies operate with a mix of traditional and e-commerce. Just about all medium and large organizations have some kind of e-commerce presence. The followings are some examples, Toys-R-Us, Wal-Mart Stores, GoldPC, and Vatan Computer.

E-Commerce vs E-Business

E-Commerce

Electronic commerce, commonly written as E-Commerce, is the trading in products or services using computer networks, such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems.

Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as E-Mail.

E-Commerce businesses may employ some or all of the following:

- Online shopping websites for retail sales direct to consumers.
- Providing or participating in online marketplaces, which process third-party businessto- consumer or consumer-to-consumer sales.
- Business-to-business buying and selling.
- Gathering and using demographic data through Web contacts and social media.
- Business-to-business electronic data interchange.
- Marketing to prospective and established customers by E-Mail or fax (for example, with newsletters).
- Engaging in pretail for launching new products and services.

Pretail (also referred to as pre-retail, or pre-commerce) is a sub-category of E-Commerce and online retail for introducing new products, services, and brands to market by prelaunching online, sometimes as reservations in limited quantity before release, realization, or commercial availability. Pretail includes pre-sale commerce, pre-order retailers, incubation marketplaces, and crowdfunding communities.

E-Business

Electronic business, or E-Business, is the application of information and communication technologies (ICT) in support of all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses or E-Business refers to business with help of Internet i.e. doing business with the help of Internet network. The term <E-Business> was coined by IBM's marketing and Internet team in 1996.

Comparing E-Commerce and E-Business we come to the subsequent conclusion:

E-Business is a more general term than E-Commerce. However, in this course we will only use the term "E-Commerce", because every business transaction finally is involved in selling or buying of products or services. And the term "E-Commerce" obviously is more widespread than the term "E-Business".

Definition of e-Commerce

Although there are many definitions and explanations of e-commerce, the following definition provides a clear distinction.

• Electronic commerce, or e-commerce, is defined to be the process of businesses trading with other businesses and the formulation of internal processes using electronic links.

• Electronic business, or e-business, is a term often used interchangeably with e-commerce, but is more concerned with the transformation of key business processes through the use of internet technologies.

• Interaction between communication systems, data management systems and security, which because of them exchange commercial information in relation to the sale products or services, will be available, so the definition, the main components of electronic commerce are: communication systems, data management systems and security.

E-Commerce is the exchange of goods and services between (usually) independent organizations and/or persons supported by a comprehensive usage of powerful ICT systems and a globally standardized network infrastructure.

For this purpose the business partners have to couple their business processes and their ICT systems. These systems have to work together temporarily and seamlessly and have to share, exchange and process data during the whole business process and across the boundaries of the cooperating organizations.

Data security and data privacy as well as the compliance with laws and other policies and procedures have, of course, to be guaranteed.

History

In the 1970s, the term electronic commerce, referred to electronic data exchange for sending business documents such as purchase orders and voices electronically. Later, with the development of this industry the term of electronic commerce is used to business of goods and services via the web. When the first World Wide Web was introduced in 1994 as a comprehensive, many well-known researchers have been predicated this type of business "the web-based business" will became soon an important in the world economy, but it took four years that http based protocols should be widely available to users.

The first electronic commerce created in USA and some European countries in 1998. These types of business are formed with beginner and unprofessional websites and it has been expanded rapidly. Electronic commerce was spread rapidly in most cities in America, Europe and East Asia in 2005. Some say dates of electronic commerce return to prior of the Internet, but due to the costs of this style of business, only business and financial institutions and corporations could use it. But with the widespread use of the Internet to all of the people and change the structure of electronic commerce, this kind of business from specific business case for a particular group out and became the industrial form.

E Commerce Frameworks

Electronic commerce framework is comprised of three levels that this framework is needed to for successful electronic commerce.

1. Infrastructure

The first part of the framework for electronic commerce is including hardware, software, databases and communications. It is used in term of World Wide Web on the Internet or other message switching methods on the Internet or other telecommunication networks.

2. Services

The second part of the framework include a wide range of services that provide the ability to find and present of information and are including the search for trading partners, negotiation and agreements.

3. Products and Structures

This section of the electronic commerce frameworks consist forecasts and direct provision of goods, services and trade-related information to customers and business partners, cooperation and sharing of information within and outside the organization and organizing of environment of electronic marketplace and chain of supply and support.

E-Commerce and Value Chain

Typical business organizations (or parts within a business organization) **design** , **produce** , **market** , **deliver** , and **support** its product(s)/service(s). Each of these activities adds cost and value to the product/service that is eventually distributed to the customer. The value-chain consists of a series of activities designed to satisfy a business need by adding value (or cost) in each phase of the process. In addition to these primary activities that result in a final product/service, supporting activities in this process also should be included:

- Managing company infrastructure
- Managing human resources
- Obtaining various inputs for each primary activity
- Developing technology to keep the business competitive

The Internet can increase the speed and accuracy of communications between suppliers, distributors and customers. Furthermore, the Internet's low cost allows companies of any size to be able to take advantage of value-chain integration. E-commerce may improve value chain by identifying new opportunities for cost reduction. For instance, using e-mail to notify customers instead of using regular mail helps for reducing cost. Selling to distant customers using the company web site may allow revenue improvement or generation. These sales may not have been materialized otherwise or selling digital products such as songs or computer software or distributing software through the Web. Offering online customer service or new sales channel identification helps for product/service improvement.

Electronic Commerce & Information Technology

Information technology has changed the manner of acts of people, organizations, governments and so economic, social affairs and even the mentality of people has changed. Education, health, industry, manufacturing, trade, banking and even of all entertainments services have effected and changes with technology. Information technology creates new jobs, new industries, change lifestyle and has brought new

creativity in all of the dimensions of our life. Understanding of people together, adapted cultures and decrease of incompatibility are examples of these consequences.

From scientific perspective, Information Technology and Genetic Engineering with aerospace knowledge is one of the leading branches of knowledge and constructor of civilization of human in the future. Advances in Information Technology have expanded to the point that some experts with phenomena such as "inventing steam engine" have equated. In economic dimension, "the importance of rapid access to accurate information" is the key to success in global competition. Electronic commerce is one of the important branches of Information Technology that has been emerged as the result of development of Information Technology.

Electronic Commerce & Websites

Websites are effective in acts of business corporations. Websites are gateways to business brands, products and services of manufacturers. A company that does not care about its websites ultimately will be bankruptcy in business. The websites that are not adapted are like an old and faded showcase in a traditional business. Therefore, companies should have a strong background and exact planning in Internet search. For many users, the site of search (search engine) is the entry point to the Internet.

For many changes in the world around us, each organization or agency should coordinate itself with the changes and enhance its work efficiency. Internet especially websites can be suitable means to achieve this goal. For instance, web can use up to extend markets by facilitating the presentation and repartition of existing products in to new business centers. The web can also be a workmanship that facilitates products development, as companies who their existing customers well create exciting, new or alternative offering for them.

Types of Electronic Commerce

There are many various classifies of electronic commerce and many different methods to characterize these clusters. Academics determined a number of frameworks for classifying electronic commerce but each one want to illustrate it form a unique perspective. The main different classifies of electronic commerce are Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C), Consumer-to-business (C2B) and Mobile Commerce (M-Commerce).

B2B

Business-to-Business is a type of commerce transaction that exists between businesses or a transaction that occurs between a company and other company to transfer of services and products. A possible explanation for this might be that Business-to-Business includes online wholesaling in which businesses sell materials, products and services to other businesses on the websites.

The Internet and reliance of all businesses upon other companies for supplies, utilities, and services has enhanced the popularity of B2B e-commerce and made B2B the fastest growing segment within the e-commerce environment. In recent years extranets (more than one intranet) have been effectively used for B2B operations. B2B e-commerce creates dynamic interaction among the business partners; this represents a fundamental shift in how business will be conducted in the 21st century.

Oracle, PeopleSoft, SAP, Broadvision, Commerce One, Heatheon/Webmd, 12 Technologies, Inc., Ariba , Aspect Development, Baan, BEA Systems, Internet Capital Group, VerticalNet, Vignette are some of the major vendors of e-commerce and B2B solutions.

Companies using B2B e-commerce relationship observe cost savings by increasing the speed, reducing errors, and eliminating many manual activities.

Web-based B-to-B includes:

- *Direct selling and support to business* (as in the case of Cisco where customers can buy and also get technical support, downloads, patches online).
- *E-procurement* (also known as industry portals) where a purchasing agent can shop for supplies from vendors, request proposals, and, in some cases, bid to make a purchase at a desired price. For example the autoparts wholesaler (reliableautomotive.com); and the chemical B-to-B exchange (chemconnect.com).
- *Information sites* provide information about a particular industry for its companies and their employees. These include specialised search sites and trade and industry standards organisation sites. E.g. newmarket makers.com is a leading portal for B-to-B news.

Advantages of B2B ecommerce:

- A B2B e-commerce lowers production cost by eliminating many labor intensive tasks.
- More timely information is achieved by the formation of a direct online connection in the supply chain.
- Accuracy is increased because fewer manual steps are involved.
- Cycle time improves because flow of information and products between business partners is made simpler. Since, raw materials are received faster and information related to customer demands is more quickly transferred.
- Naturally this close communication between the business partners improves overall communication.
- Increased communications results in improved inventory management and control.

Major Models of Business-to-Business e-Commerce

The three major B2B e-commerce models are determined by seller, buyer, or intermediary (third party) who controls the marketplace. Consequently, the following four marketplaces have been created. Each model has specific characteristics and is suitable for a specific business:

Seller-controlled marketplace: This is t he most popular type of B2B model for both consumers and businesses. In this model the sellers who provide to fragmented markets such as chemicals, electronics, and auto components come together to generate a common trading place for the buyers. While the sellers aggregate their market power, it simplifies the buyers search for alternative sources. Businesses and some time consumers use the seller's product catalog to order products and services online.

Buyer-controlled marketplace: This model is used by large companies with significant buying power or a consortium of several large companies. The consortium among Ford, General Motors and Daimler Chrysler is a good example of this model. In this model a buyer or a group of buyers opens an electronic marketplace and invites sellers to bid on the announced products or RFQs (request for quotation). Using this model the buyers are looking to efficiently manage the procurement process, lower administrative cost, and exercise uniform pricing. Companies are making investments in a buyer controlled marketplace with the goal of establishing new sales channels that increase market presence and lower the cost of each sale.

Third-party exchanges marketplace: A third-party-controlled marketplace model is controlled by a third party not by sellers or buyers. A third-party controlled marketplace model offers suppliers a direct channel of communication to buyers through online storefronts. The interactive procedures within the marketplace contain

features like product catalogs, request for information (RFI), rebates and promotions, broker contacts, and product sample requests. The marketplace makes revenue from the fees generated by matching buyers and sellers. These marketplaces are usually active either in a vertical or horizontal market.

Trading partner agreements: The main objectives of the trading partner agreements B2B e-commerce model are to automate the processes for negotiating and enforcing contracts between participating businesses. This relatively new model is gaining popularity. This model is expected to become more common as extensible markup language (XML) and the ebusiness XML initiative (ebXML) become more accepted. This worldwide project is attempting to standardize the exchange of e-business data via XML, including electronic contracts and trading partner agreements. Using this model enables customers to submit electronic documents that previously required hard-copy signatures via the Internet. As soon as act passed by the Turkish government that gives digital signatures the same legal validity as handwritten signatures, this model will also be very popular in Turkey too.

The main advantage of XML (extensible markup language) over hypertext markup language (HTML) is that it can assign data type definitions to all the data included in a page. This allows the Internet browser to select only the data requested in any given search, leading to ease of data transfer and readability because only the suitable data are transferred. This may be particularly useful in m-commerce (mobile commerce); XML loads only needed data to the browser, resulting in more efficient and effective searches. This would significantly lower traffic on the Internet and speed up delay times during peak hours. XML-based B2B trading partner agreements configurations can be *business contracts, shipping logistics, inventory status* or *purchase order* for example.

B2C

Business-to-Consumer refers to transactions between a business and its end consumer and so it create electronic storefronts that offer information, goods, and services between business and consumers in a retailing transaction or it is an Internet and electronic commerce model that indicates a financial transaction or online sale between a business and consumer.

In addition to pure B2C e-commerce players such as Amazon.com, and hepsiburada.com other traditional businesses have entered the virtual marketplace by establishing comprehensive web sites and virtual storefronts. In these cases, e-commerce supplements the traditional commerce by offering products and services through electronic channels. Wal-Mart stores and the Gap are examples of companies that are very active in B2C e-commerce. Some of the advantages of these e-commerce sites and companies include availability of physical space (customers can physically visit the store), availability of returns (customers can return a purchased item to the physical store), and availability of customer service in these physical stores.

Business-to-Consumer e-Commerce Cycle

There are five major activities involved in conducting B2C e-commerce.

1. **Info sharing:** A B2C e-commerce may use some or all of the following applications and technologies to share information with customers: Online advertisements, e-mail, newsgroups/discussion groups, company web site, online catalogs, message board systems, bulletin board systems, multiparty conferencing.

2. **Ordering:** A customer may use electronic e-mail or forms available on the company's web site to order a product from a B2C site. A mouse click sends the essential information relating to the requested piece(s) to the B2C site.

3. **Payment:** Credit cards, electronic checks, and digital cash are among the popular options that the customer has as options for paying for the goods or services.

4. **Fulfillment.** Fulfillment that is responsible for physically delivering the product or service from the merchant to the customer. In case of physical products(books, videos, CDs), the filled order can be sent to the customer using regular mail, MNG, Yurtiçi Cargo, FedEx, or UPS. As expected for faster delivery, the customer has to pay additional money. In case of digital products (software, music, electronic documents), the e-business uses digital documentations to assure security, integrity, and privacy of the product. It may also include delivery address verification and digital warehousing that stores digital products on a computer until they are delivered. The e-business can handle its own fulfillment operations or outsource this function to third parties with moderate costs.

5. **Service and support:** It is much cheaper to maintain current customers than to attract new customers. For this reason, e-businesses should do whatever that they can in order to provide timely, high-quality service and support to their customers. As e-commerce companies lack a traditional physical presence and need other ways to maintain current customers, service and support are even more important in e-commerce than traditional businesses.

The following are some examples of technologies and applications used for providing service and support:

E-mail confirmation: In most cases, the e-mail confirmation provides the customer with a confirmation number that the customer can use to trace the product or service. E-mail confirmation promises the customer that a particular order has been processed and that the customer should receive the product/ service by a certain date.

Periodic news flash: They used to give customers with the latest information on the company or on a particular product or offering.

Online Surveys: Their results can assist the e-commerce site to provide better services and support to its customers based on what has been collected in the survey, even though online surveys are mostly used as a marketing tool.

Help desks: They provide answers to common problems or provide advice for using products or services. They are used for the same purpose as in traditional businesses.

Assured secure transactions & assured online auctions: They guarantee customers that the e-commerce site covers all the security and privacy issues. As many customers still do not feel comfortable conducting online business, the security and privacy services are especially important.

C2B

Consumer-to-Business is the transfer of services, goods or information from persons to business or it is a business model where end users create products and services that are used by business and institutions.

Consumer-to-business (C2B) e-commerce that involves individuals selling to businesses may include a service/product that a consumer is willing to sell. Individuals offer certain prices for specific products/services. Companies such as pazaryerim.com and mobshop.com are examples of C2B.

C2C

Consumer-to-Consumer is an electronic Internet facilitated medium, which involves transactions among users and it is a business model which two consumers deal business with each other directly.

Using C2C e-commerce, consumers sell directly to other consumers using the Internet and web technologies. Individuals sell a wide variety of services/products on the Web or through auction sites such as eBay.com and banggood.com through classified ads or by advertising. Consumers are also able to advertise their products and services in organizational intranets and sell them to other employees.

M-Commerce

The term of Mobile Commerce was invented in 1997 to aim "the buying and selling of products, information and services" via wireless handheld devices such as cellular phones, laptops and personal digital assistants. These wireless devices interact with computer networks that have the ability to conduct online merchandise purchases. Mobile commerce allows to users access to Internet and shopping in it without needing to find a place to plug in. Mobile Commerce transactions continue to improve and the phrase includes the purchase and sale of a wide range of products and services, online banking, bill payment, information delivery and so on.

Main features of M-Commerce are:

- Location independence of (mobile) customers
- High availability of services through well established mobile phone networks,
- Increasing computing power of mobile devices,
- Interactivity of mobile devices (voice and data transfer),
- Security (when using mobile phone networks),
- Localization of customers through cell structure,
- Accessibility of customers,
- Potential of personalized services/offers.

Payment Systems in E-commerce

Online payment is a form of electronic payment, which is provided by a third party payment interface between banks for real-time payment. Compared with the traditional payment, online payment systems are more convenient, fast, efficient and economical. Users can use their own PC or mobile phone with Internet to complete the entire payment process in a very short time.

There are several payment methods (and organization) supporting electronic payments and ecommerce over the internet:

- Electronic payment cards (credit, debit, charge)
- Virtual credit cards
- E-wallets (or e-purses)
- Smart cards
- Electronic cash (several variations)
- Wireless payments
- Stored-value card payments
- Loyalty cards
- Person-to-person payment methods
- Payments made electronically at kiosks

Online banking is a very common way of online payment systems. For example, when users want to shop online. The user must open an online bank account. This payment is directly paid by credit card or even debit card. And now third-party online payment systems such as PayPal are also very popular in e-commerce.

Third party payment is an independent organization, which provides the network payment mode for transaction platform between bank and online payment platform. Third party payment mode is like a credit intermediaries to supervise and support between online business and the bank.

First of all, for the customer third-party online payment companies can provide a variety of online payment systems, especially for small and medium enterprises. Online payment system provides a convenient payment platform to do trade with customers. For the customer, it does not only give a chance for quick payment after shopping online, but it also avoids the risk of money transfer. Online payment allows the banks to expand their business and allocate the resources on development and maintenance.

Online payment system also has plenty of risks. Financial risks are possible during the transaction process. There is a plenty of competition which may cause a negative impact on online payment. For example, in China, over 40 electronic payment companies work on third party online payment, which causes serious homogeneity in the market. The last but not the least there is law and regulation problem. Legislation regarding online payment should be established.

Types of Online Payment System

Net Bank

Net Bank is a virtual counter of the bank to provide network technology for the customer to complete some traditional services such as opening an account, inquiries, transfer, online securities, investments and financial management. By comparison with traditional bank services, online banking cuts down operating cost. There are no time or location limits, the bank can offer services anytime and anywhere, even anyhow. Furthermore, net bank provides a variety of personalized services, such as insurances, securities and other financial products.

PayPal

PayPal allows any business or individual with an email address to transfer money online in a more secure, convenient and efficient way. The network is based on the existing bank account and the credit card to create a real-time payment solution. (PayPal.com 2017, cited: 30.09.2017) PayPal is the most popular third-party online payment system in the world. It has 8 million transactions every day and has over 137 million PayPal accounts in 193 markets and includes 26 currencies that it can transfer all over the world.

Google Wallet

Google Wallet is a peer-to-peer payments service produced by Google Company. Google Wallet must link to an existing credit card or bank account in the US. Payment transfer is completed by using an email address or a phone number. The most important revolution is that Google Wallet released real card to connect to user's accounts so customers can use Google wallet at retails businesses. It can also be used like a debit card to withdraw cash at ATM. Unfortunately, Google Wallet card was abolished on June 30, 2016.

Amazon Payment

Amazon Payment was launched in 2007 by Amazon Company. It is an online payment system which is owned by Amazon.com. The customer does not have to leave the site to complete a transaction. It is safe and fast way to buy products online.

Authorize.Net

Authorize.Net provides a payment gateway service. It allows merchants to accept credit payment through their website and over an Internet Protocol connection. Since 1996 there are around 375,000 merchants and more than 88 billion dollars transactions in 2015.

Wechat Wallet

In China, Wechat payment is the most widely used payment gateway with the mobile phone, based on Wechat app. By linking your debit cards to Wechat payment is enough to complete transaction. In Wechat Wallet there are plenty of payment methods:

- Quick Pay: Vendors scan the QR code shown by customers on the Quick Pay page to finish transaction.
- QR Code Payment: Vendors create different QR codes for different goods. After users scanning these codes, customers can see related product information and transaction guides on their phone.
- In-App web-based payment: Vendors push product messages to their followers via the official account. With Wechat payment enabled, their followers can purchase products on the shopping page.
- In-App payment: Vendors can integrate Wechat Pay SDK (software development kit) into their apps. When users make payment in other apps, Wechat will be authorized to process the payment. Once the transaction is done, the page will redirect to the other app.

AliPay

In 2013, AliPay overtook PayPal as the world's largest mobile payment system. It is used by more than 5 percent of world's population. Up to now, there are 270 million user accounts. The amount of mobile payment transactions peaked 1.97 million times. Alipay is operated by Ant Financial of China, which is one of the largest FinTech companies in the world. Alipay is a way to pay for goods and services online, but now it is more than that. It is a global lifestyle "super app".

Degree of digitization

The categorization of e-commerce into different configurations based on the degree of digitization of the product or service sold, the process of the transaction and the delivery agent.

Traditional e-commerce - where products or services are physical, the process
of the transaction is physical and the delivery agent is physical. For example a corner shop stocks newspapers that are bought with cash over the counter and are taken away by the customer out of the shop.

However, in reality in today's world, it is very rare that a business is truly traditional because of the use of EPOS systems for payment (electronic point of sale systems).

Pure e-commerce - Where products or services are digital, the process of the transaction is digital and the delivery agent is digital. For example, software update services of companies like Microsoft, Cisco, Symantec; downloading of electronic books; peer-to-peer file sharing like Napster would also be considered pure e-commerce.

Partial e-commerce - Where either one or two of the dimensions are physical. For example in the case of booksellers Amazon, the products (books) are physical, the process is digital and the delivery agent is physical.

Advantages & Disadvantages of e-Commerce

The invention of new telecommunication networks and modern online devices has resulted in a new business. In fact, electronic commerce has become one of the most popular activities on the web. Electronic commerce created many benefits for companies and users however, some disadvantages and serious problems stem from this issue.

Advantages of e-commerce to organizations

- *International marketplace.* What used to be a single physical marketplace located in a geographical area has now become a borderless marketplace including national and international markets. By becoming e-commerce enabled, businesses now have access to people all around the world. In effect all e-commerce businesses have become virtual multinational corporations.
- *Operational cost savings.* The cost of creating, processing, distributing, storing and retrieving paper-based information has decreased (see Intel mini-case).
- *Mass customization.* E-commerce has revolutionized the way consumers buy good and services. The pull-type processing allows for products and services to be customized to the customer's requirements. In the past when Ford first started making motor cars, customers could have any color so long as it was black. Now customers can configure a car according to their specifications within minutes on-line via the www.ford.com website.
- *Lower telecommunications cost.* The Internet is much cheaper than value added networks (VANs) which were based on leasing telephone lines for the sole use of the organisation and its authorised partners. It is also cheaper to send a fax or e-mail via the Internet than direct dialling.
- *Digitization of products and processes.* Particularly in the case of software and music/video products, which can be downloaded or e-mailed directly to customers via the Internet in digital or electronic format.
- *No more 24-hour-time constraints.* Businesses can be contacted by or contact customers or suppliers at any time.

Advantages of e-commerce to consumers

- *24/7 access.* Enables customers to shop or conduct other transactions 24mhours a day, all year round from almost any location. For example, checking balances, making payments, obtaining travel and other information. In one case a pop star set up web cameras in every room in his house, so that he could check the status of his home by logging onto the Internet when he was away from home on tour.
- *More choices.* Customers not only have a whole range of products that they can choose from and customize, but also an international selection of suppliers.
- *Price comparisons.* Customers can 'shop' around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared (for example www.moneyextra.co.uk for financial products and services).
- *Improved delivery processes.* This can range from the immediate delivery of digitized or electronic goods such as software or audio-visual files by downloading via the Internet, to the on-line tracking of the progress of packages being delivered by mail or courier.
- *An environment of competition.* where substantial discounts can be found or value added, as different retailers vie for customers. It also allows many individual customers to aggregate their orders together into a single order presented to wholesalers or manufacturers and obtain a more competitive price (aggregate buying), for example www.letsbuyit.com.

Advantages of e-commerce to society

- ***Enables more flexible working practices.*** It enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful working environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly.
- ***Connects people.*** Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them.
- ***Facilitates delivery of public services.*** For example, health services available over the Internet (on-line consultation with doctors or nurses), filing taxes over the Internet through the Inland Revenue website.

Disadvantages of ecommerce to organizations

- ***Lack of sufficient system security, reliability, standards and communication protocols.*** There are numerous reports of websites and databases being hacked into, and security holes in software. For example, Microsoft has over the years issued many security notices and 'patches' for their software. Several banking and other business websites, including Barclays Bank, Powergen and even the Consumers' Association in the UK, have experienced breaches in security where 'a technical oversight' or 'a fault in its systems' led to confidential client information becoming available to all.
- ***Rapidly evolving and changing technology.*** so there is always a feeling of trying to 'catch up' and not be left behind.
- ***Under pressure to innovate***. Develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organization. The ease with which business models can be copied and emulated over the Internet increase that pressure and curtail longer-term competitive advantage.
- ***Facing increased competition.*** Both national and international competitors often leads to price wars and subsequent unsustainable losses for the organization.
- ***Problems with compatibility of older and 'newer' technology.*** There are problems where older business systems cannot communicate with web based and Internet infrastructures, leading to some organizations running almost two independent systems where data cannot be shared. This often leads to having to invest in new systems or an infrastructure, which bridges the different systems. In both cases this is both financially costly as well as disruptive to the efficient running of organizations.

Disadvantages of e-commerce to consumers

- ***Computing equipment*** is needed for individuals to participate in the new 'digital' economy, which means an initial capital cost to customers.
- ***A basic technical knowledge*** is required of both computing equipment and navigation of the Internet and the World Wide Web.
- ***Cost of access to the Internet,*** whether dial-up or broadband tariffs.
- ***Cost of computing equipment.*** Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirement of the Internet, websites and applications.
- ***Lack of security and privacy of personal data.*** There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data.

- *Physical contact and relationships are replaced by electronic processes.* Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings.
- *A lack of trust* because they are interacting with faceless computers.

Disadvantages of e-commerce to society

- *Breakdown in human interaction.* As people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in where people are more comfortable interacting with a screen than face to face.
- *Social division.* There is a potential danger that there will be an increase in the social divide between technical haves and have-nots – so people who do not have technical skills become unable to secure better-paid jobs and could form an underclass with potentially dangerous implications for social stability.
- *Reliance on telecommunications infrastructure, power and IT skills,* which in developing countries nullifies the benefits when power, advanced telecommunications infrastructures and IT skills are unavailable or scarce or underdeveloped.
- *Wasted resources.* As new technology dates quickly how do you dispose of all the old computers, keyboards, monitors, speakers and other hardware or software?
- *Facilitates Just-In-Time manufacturing.* This could potentially cripple an economy in times of crisis as stocks are kept to a minimum and delivery patterns are based on pre-set levels of stock which last for days rather than weeks.

Impact of e-Commerce

Electronic commerce is a new method business that mixes all of the prior methods and transaction styles. Electronic commerce and electronic business have impact on many districts of business for instance, economics, marketing, computer science, finance and accounting, production and operation management, management information system, human source management, business law and ethics. The following are some of the factors describe.

- **Marketing -** The raise of information technologies and computer networks has many effects in business especially in field of marketing. Everyone can make markets work with more efficient and they can improve their career with information management within a group. In this case, they can decrease cost of operations and catch new markets and new opportunities for selling and transactions.

- **Economics -** In industry world, managers must encourage and conduct employees to devise plans to take advantages of new economic opportunities. Electronic commerce is creating new opportunities to the global economic, for example in global travel and tourism industry. Transforming from traditional business method to electronic commerce method is hard and there were many different factors for companies to adapt them with electronic commerce factors. For this work, they must used Internet and many other online networks, because for grow and use from new economic opportunities in each industry it is necessary to be match with new technologies.

- **Finance and Accounting -** Two decades of progress in information technology and development of its applications in the field of economic and social to form a new chapter of relations between people, institutions, companies and governments and new concepts are emerging on literature of economic and trade. Internet as a global network, as well as prerequisite of electronic commerce, for reason flexibility,

attractive, ease for use, low cost access and ubiquity, is changing the traditional business moreover, electronic commerce had a significant impact on finance and accounting that include saving time, disinflation, increase productivity, reduce the demand for money (reduce the cost of publishing) and etc.

- **Production and operation management -** The outcomes of manager's work, by on time product qualify productions and with the least cost is determined. For this purpose, first requirement is correct information. Electronic commerce is the best way to have the most accurate and correct information for managers because, consumers transmit their demands to managers directly.

Limitations of e-Commerce

There are some barriers for electronic commerce setup and developing.

- Lack of knowledge and necessary information for use of electronic commerce and Internet network.
- Protection of consumer rights in electronic commerce.
- Lack of legal infrastructures in electronic commerce such documents that are not acceptable and electronic signature.
- Low security of electronic funds transfer in some countries.
- Lower speed and limitations on the use of Internet.
- Lack of information intermediary institutions and manufacturing companies of the benefits of Internet business.
- The security and confidentiality of information exchanged.