

**E-Business**

**UNIT-I: E-BUSINESS AND E-COMMERCE:-:**

- Introduction E-Business and E-Commerce, Traditional Commerce Vs E-Commerce, Potential Benefits, Limitations, International Nature of e-commerce. E-Business Infrastructure Online Services: Online Financial Services- Online Banking & Brokerage, Online Insurance Services- Online Real Estate Services-Online Travel Services-Online Hospitality Services Online Recruitment Services- Online Publishing Services–Online Entertainment–E-Learning.

**INTRODUCTION E-BUSINESS AND E-COMMERCE,**

“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.” (Wikipedia 2015)

“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.

**TRADITIONAL COMMERCE VS E-COMMERCE,**

E-commerce is the process of exchanging goods or services in the form of digital mode where the payment is done via online transactions, in electric form. The payments can be made by any form of digital modes such as credit or debit cards, digital wallets or Net banking. E-commerce is an online platform for customers to sell and buy goods or services and it is delivered to the doorstep of the customer. This saves the time and money that would have been otherwise spent on traveling. In E-commerce, shopping could be done all round the clock without any chaos, during our free time.

Traditional commerce is the process of buying and selling goods in direct form, this began with the start of human civilization, namely the Barter system. While the Barter system was

exchanging goods for other goods, the recent traditional business exchanges goods for monetary gains. Now, traditional commerce is losing its importance and high regard to that of E-commerce

### POTENTIAL BENEFITS, LIMITATIONS:

**Benefits to Consumers** The benefits of E-Commerce to consumers are as follows: •Electronic commerce enables customers to shop or do other transactions 24 hours a day, all year round, from almost any location. •Electronic commerce provides customer with more choices; they can select from many vendors and from many more products. •Electronic commerce frequently provides customers with less expensive products and services by allowing them to shop in many places and conduct quick comparisons. •In some cases, especially with digitized products, E-Commerce allows quick delivery. 22

•Customers can receive relevant and detailed information in seconds, rather than days or weeks. •Electronic commerce makes it possible to participate in virtual auctions. •Electronic commerce allow customers to interact with other customers in electronic communities and exchange ideas as well as compare experiences. •E-commerce facilitates competition, which results in substantial discounts..

**Benefits to Society** The benefits of E-Commerce to society are as follows: •Electronic commerce enables more individuals to work at home and to do less traveling for shopping, resulting in less traffic on the roads and lower air pollution. •Electronic commerce allows some merchandise to be sold at lowest prices, so less affluent people can buy more and increase their standard of living. •Electronic commerce enables people in third world countries and rural areas to enjoy products and services that otherwise are not available to them. •Electronic commerce facilitates delivery of public services, such as health care, education, and distribution of government social services at a reduced cost and/or improved quality. Health care services, e.g., can reach patients in rural areas. 1.9 THE LIMITATIONS OF E-COMMERCE The limitations of E-Commerce can be grouped into two categories which are: 23

**Technical limitations and Non-technical limitations** Technical Limitations of E-COMMERCE The technical limitations of E-Commerce are as follows: •There is a lack of system security, reliability, standards and communication protocols. •There is insufficient telecommunication bandwidth. •The software development tools are still evolving and changing rapidly. •It is difficult to integrate the Internet and E-Commerce software with some existing applications and databases. •Vendors may need special Web servers and other infrastructures in addition to the network servers. •Some E-Commerce software might not fit with some hardware or may be incompatible with some operating systems or other components. •As time passes, these limitations will lessen or be overcome; appropriate planning can minimize their impact.

### **INTERNATIONAL NATURE OF E-COMMERCE.**

Because the Internet connects computers all over the world, any business that engages in electronic commerce instantly becomes an international business. When companies use the Web to improve a business process, they are automatically operating in a global environment. The key issues that any company faces when it conducts international commerce include trust and culture, language, and infrastructure.

A. Trust Issues on the Web: It is important for all businesses to establish trusting relationships with their customers. Companies with established reputations in the physical world often create trust by ensuring that customers know who they are. These businesses can rely on their established brand names to create trust on the Web. New companies that want to establish online businesses face a more difficult challenge because a kind of anonymity exists for companies trying to establish a Web presence.

B. Language Issues: Most companies realize that the only way to do business effectively in other cultures is to adapt to those cultures. "Think Globally, Act Locally" The first step that a Web business usually takes to reach potential customers in other countries, and thus in other cultures, is to provide local language or regional dialect.

C. Culture Issues: An important element of business trust is anticipating how the other party to a transaction will act in specific circumstances. That is one reason why companies with established brands can build online businesses more quickly and easily than a new company without a reputation. The brand conveys some expectations about how the company will behave. Companies must be aware of the differences in language and customs that make up the culture of any region in which they intend to do business.

D. Culture and Government: Some parts of the world have cultural environments that are extremely inhospitable to the type of online discussion that occurs on the internet. The cultural conditions, in some cases, lead to government controls that can limit electronic commerce development. The internet is a very open form of communication. This type of unfettered communication is not desired or considered acceptable in some cultures.

E. Infrastructure Issues: Internet infrastructure includes the computers and software connected to the internet and communications networks over which the message packets travel. In many countries other than the United States, the telecommunications industry is either government owned or heavily regulated by the government. More than half of all businesses on the Web turn away international orders because they do not have the processes in place to handle the orders.

**E-BUSINESS INFRASTRUCTURE:** E-business infrastructure refers to the combination of hardware such as servers and client PCs in an organization, the network used to link this hardware and the software applications used to deliver services to workers within the e-business and also to its partners and

customers. Infrastructure also includes the architecture of the networks, hardware and software and where it is located. Finally, infrastructure can also be considered to include the methods for publishing data and documents accessed through e-business applications. A key decision with managing this infrastructure is which elements are located within the company and which are managed externally as third-party managed applications, data servers and networks.

### **ONLINE FINANCIAL SERVICES**

Although the term 'electronic financial services' seems complex or opaque, it's really not. Electronic financial services are financial services that are used and delivered via computerized networks, devices, and telecommunications.

So, what does that mean in everyday terms? It means that everything from computers to smartphones to the internet can be used to render or use a financial service. In essence, it's like good old physical-world financial services but with a virtual twist.

### **ONLINE BANKING**

In this type of home banking service, banks set up their retail branches and subscribe their online services such as Prodigy, CompuServe, and America Online. Although Off-the shelf home finance software allow customers to manage their money, information regarding their financial transactions gets managed two times, once by the customer and once by the banks and the financial banking software can not reduce this duplication of efforts. Now some home banking financial services systems are emerging that make the bank an electronic gateway and reduce the monthly paper chase of bills and checks

### **BROKERAGE**

A broker is an individual or firm that acts as an intermediary between an investor and a securities exchange. Because securities exchanges only accept orders from individuals or firms who are members of that exchange, individual traders and investors need the services of exchange members. Brokers provide that service and are compensated in various ways, either through commissions, fees or through being paid by the exchange itself.

### **ONLINE INSURANCE SERVICES-**

### **ONLINE REAL ESTATE SERVICES-**

### **ONLINE TRAVEL SERVICES-ONLINE HOSPITALITY SERVICES-ONLINE RECRUITMENT SERVICES-**

**ONLINE PUBLISHING SERVICES—ONLINE ENTERTAINMENT—E-LEARNING.**

**UNIT-II: E BUSINESS MODELS AND ELECTRONIC PAYMENT SYSTEM**

**E BUSINESS MODELS: DEFINITION OF E BUSINESS MODEL:**

**TYPES OF E BUSINESS MODELS:**

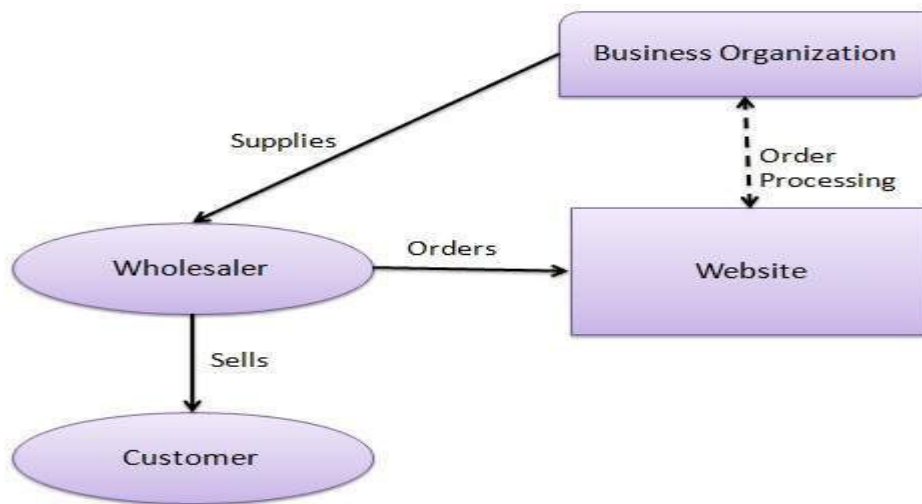
E-commerce business models can generally be categorized into the following categories.

- Business - to - Business (B2B)
- Business - to - Consumer (B2C)
- Consumer - to - Consumer (C2C)
- Consumer - to - Business (C2B)
- Business - to - Government (B2G)
- Government - to - Business (G2B)
- Government - to - Citizen (G2C)

**BUSINESS TO BUSINESS, BUSINESS TO CUSTOMERS, CUSTOMERS TO CUSTOMERS, BUSINESS TO GOVERNMENT, BUSINESS TO GOVERNMENT, BUSINESS TO EMPLOYEE, GOVERNMENT TO CITIZENS.**

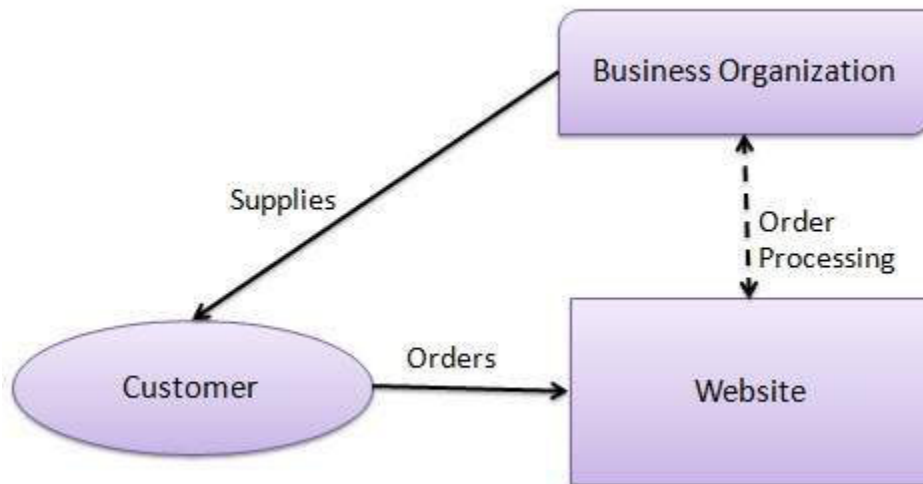
Business - to - Business

A website following the B2B business model sells its products to an intermediate buyer who then sells the product to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, sells the endproduct to the final customer who comes to buy the product at one of its retail outlets.



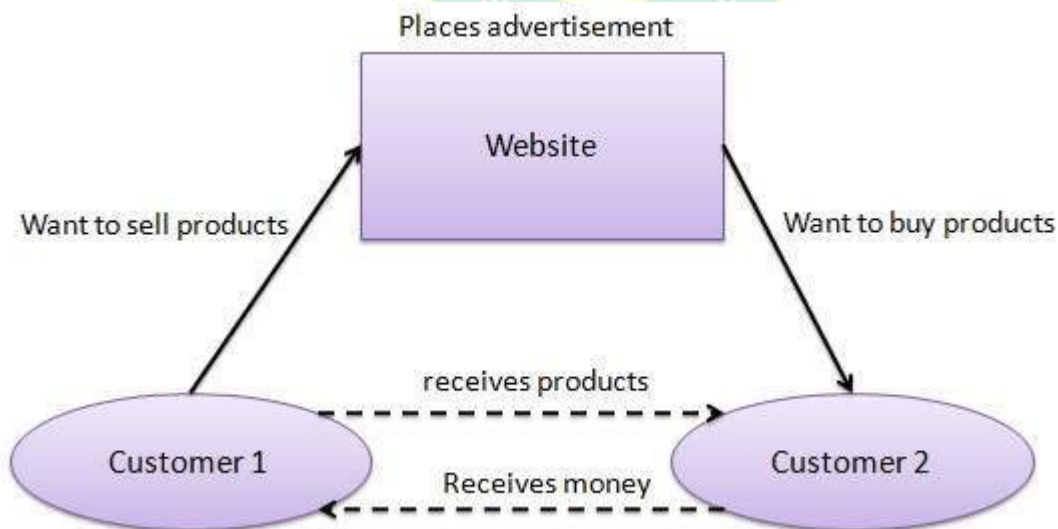
Business - to - Consumer

A website following the B2C business model sells its products directly to a customer. A customer can view the products shown on the website. The customer can choose a product and order the same. The website will then send a notification to the business organization via email and the organization will dispatch the product/goods to the customer.



Consumer - to - Consumer

A website following the C2C business model helps consumers to sell their assets like residential property, cars, motorcycles, etc., or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post/advertisement on the website.

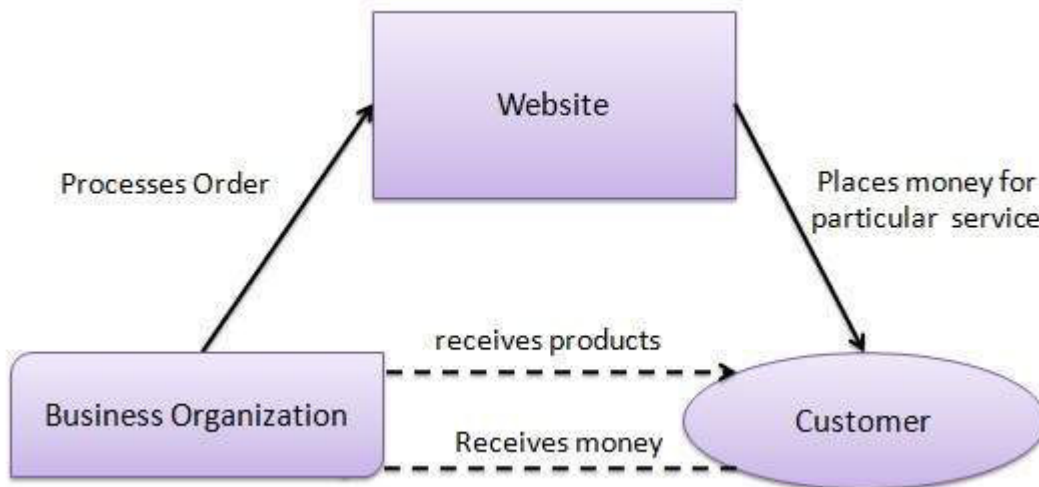


Consumer - to - Business

In this model, a consumer approaches a website showing multiple business organizations for a particular service. The consumer places an estimate of amount he/she wants to spend for a particular service. For

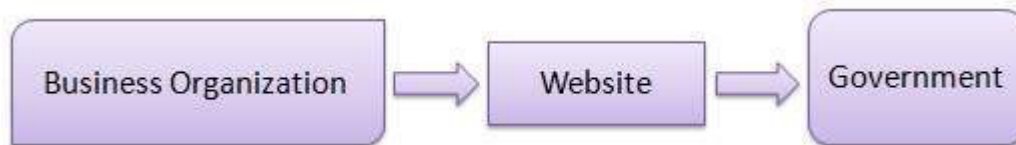


example, the comparison of interest rates of personal loan/car loan provided by various banks via websites. A business organization who fulfills the consumer's requirement within the specified budget, approaches the customer and provides its services.



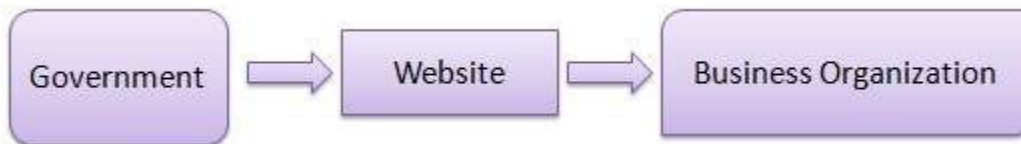
Business - to - Government

B2G model is a variant of B2B model. Such websites are used by governments to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.



Government - to - Business

Governments use B2G model websites to approach business organizations. Such websites support auctions, tenders, and application submission functionalities.



Government - to - Citizen

Governments use G2C model websites to approach citizen in general. Such websites support auctions of vehicles, machinery, or any other material. Such website also provides services like registration for birth, marriage or death certificates. The main objective of G2C websites is to reduce the average time for fulfilling citizen's requests for various government services.

**ELECTRONIC PAYMENT SYSTEM: INTRODUCTION: ONLINE PAYMENT SYSTEMS,**

Today, many users make payments electronically rather than in person. Hundreds of electronic payment systems have been developed to provide secure Internet transactions. Electronic payment systems are generally classified into four categories: credit card and debit cards; electronic cash; micropayment systems; and session-level protocols for secure communications. A secure electronic financial transaction has to meet the following four requirements: ensure that communications are private; verify that the communications have not been changed in transmission; ensure that the client and server are who each claims to be; and ensure that the data to be transferred was, in fact, generated by the signed author. To meet these objectives, every electronic payment system developed depends on some type of encryption and/or utilization of digital certificates. Using an encryption algorithm, the plaintext (also known as the original text) is changed into ciphertext, which is decrypted by the receiver and transformed into clear-text. The encryption algorithm utilizes a key, a binary number often ranging in length from 40 to 128 bits. After being encrypted, the information is considered to be coded and therefore “locked.” The recipient uses another key to “unlock” the coded information, restoring it to its original binary form. Two cryptographic methods used in electronic payment systems include the secret key (which uses the same key to encrypt and decrypt and is the fastest method; however, in the initial transmission to the recipient, the secret key is not secure) and the public key (which uses both a private and a public key). In the latter, each receiver owns a secret private key and a publishable public key. In public-key cryptography, the sender finds the receiver’s public key and uses it to encrypt the message, whereas the receiver uses the private key to decrypt the message. The important point here is that because key holders do not need to send their private keys to anyone else to have their messages decrypted, the private keys are not in circulation and therefore are not vulnerable to crack attacks. In short, the security of a cryptographic system rests with the secrecy of the key rather than with the secrecy of the algorithm. Theoretically, any cryptographic technique using a key can be broken, just as doors on a house can be broken into if someone finds a key compatible with the door’s key core. In virtual space, a cracker can break the cryptographic method by trying all possible keys in sequence (known as “brute-force”). As an aside, using brute-force to attempt all keys requires computing resources that grow exponentially with the key’s length. In short, cryptographic keys of 80 bits and 128 bits in length—those commonly used in electronic payment systems—will likely stay unbreakable by brute-force for quite some time. Vanderbilt University. Overview of Secure Electronic Payment Systems

**PREPAID AND POSTPAID PAYMENT SYSTEMS: E- CASH, SMART CARD, CREDIT CARD, DEBIT CARD,**



E-commerce sites use electronic payment, where electronic payment refers to paperless monetary transactions. Electronic payment has revolutionized the business processing by reducing the paperwork, transaction costs, and labor cost. Being user friendly and less time-consuming than manual processing, it helps business organization to expand its market reach/expansion. Listed below are some of the modes of electronic payments –

- Credit Card
- Debit Card
- Smart Card
- E-Money
- Electronic Fund Transfer (EFT)

## Credit Card

Payment using credit card is one of most common mode of electronic payment. Credit card is small plastic card with a unique number attached with an account. It has also a magnetic strip embedded in it which is used to read credit card via card readers. When a customer purchases a product via credit card, credit card issuer bank pays on behalf of the customer and customer has a certain time period after which he/she can pay the credit card bill. It is usually credit card monthly payment cycle. Following are the actors in the credit card system.

- The card holder – Customer
- The merchant – seller of product who can accept credit card payments.
- The card issuer bank – card holder's bank
- The acquirer bank – the merchant's bank
- The card brand – for example , visa or Mastercard.

## Credit Card Payment Proces

Step	Description
Step 1	Bank issues and activates a credit card to the customer on his/her request.
Step 2	The customer presents the credit card information to the merchant site or to the merchant from whom he/she wants to purchase a product/service.
Step 3	Merchant validates the customer's identity by asking for approval from the card brand company.
Step 4	Card brand company authenticates the credit card and pays the transaction by credit. Merchant keeps the sales slip.
Step 5	Merchant submits the sales slip to acquirer banks and gets the service charges paid to him/her.
Step 6	Acquirer bank requests the card brand company to clear the credit amount and gets the payment.

Step 6                      Now the card brand company asks to clear the amount from the issuer bank and the amount gets transferred to the card brand company.

#### Debit Card

Debit card, like credit card, is a small plastic card with a unique number mapped with the bank account number. It is required to have a bank account before getting a debit card from the bank. The major difference between a debit card and a credit card is that in case of payment through debit card, the amount gets deducted from the card's bank account immediately and there should be sufficient balance in the bank account for the transaction to get completed; whereas in case of a credit card transaction, there is no such compulsion.

Debit cards free the customer to carry cash and cheques. Even merchants accept a debit card readily. Having a restriction on the amount that can be withdrawn in a day using a debit card helps the customer to keep a check on his/her spending.

#### Smart Card

Smart card is again similar to a credit card or a debit card in appearance, but it has a small microprocessor chip embedded in it. It has the capacity to store a customer's work-related and/or personal information. Smart cards are also used to store money and the amount gets deducted after every transaction.

Smart cards can only be accessed using a PIN that every customer is assigned with. Smart cards are secure, as they store information in encrypted format and are less expensive/provides faster processing. Mondex and Visa Cash cards are examples of smart cards.

#### E-Money

E-Money transactions refer to situation where payment is done over the network and the amount gets transferred from one financial body to another financial body without any involvement of a middleman. E-money transactions are faster, convenient, and saves a lot of time.

Online payments done via credit cards, debit cards, or smart cards are examples of emoney transactions. Another popular example is e-cash. In case of e-cash, both customer and merchant have to sign up with the bank or company issuing e-cash.

#### Electronic Fund Transfer

It is a very popular electronic payment method to transfer money from one bank account to another bank account. Accounts can be in the same bank or different banks. Fund transfer can be done using ATM (Automated Teller Machine) or using a computer.

Nowadays, internet-based EFT is getting popular. In this case, a customer uses the website provided by the bank, logs in to the bank's website and registers another bank account. He/she then places a request to transfer certain amount to that account. Customer's bank transfers the amount to other account if it is in the same bank, otherwise the transfer request is forwarded to an ACH (Automated Clearing House) to transfer the amount to other account and the amount is deducted from the customer's account. Once the amount is transferred to other account, the customer is notified of the fund transfer by the bank

### **ELECTRONIC PURSE:**

An electronic purse is "designed to facilitate small-value face-to-face retail payments by offering a substitute for banknotes and coins. They are intended to complement rather than substitute for traditional retail payment instruments such as cheques and credit and debit cards." [3]

"Electronic purses differ from other cashless payment instruments in that they are supplied in advance with generally accepted purchasing power. They can be loaded at bank counters, through Automated Teller Machines (ATMs) or through specifically equipped telephones, against a debit entry in a credit institution account, or against banknotes and coins. The embedded purchasing power is drawn down at the point of sale by an electronic device that can suitably adjust the information on the card. . . . Their potential to reduce significantly the use of notes and coins is even greater than that of other debit instruments since they are the first cashless instrument which would be used for very small amounts. Their potential to replace other cashless instruments will depend: 1) on the level of fees and other costs levied by the issuer on those who use or accept these new instruments; 2) on the technical possibility, and the issuer's willingness, to remunerate the purchasing power embedded in electronic purses; and 3) on solutions adopted to compensate users in case of the loss, theft or malfunction of the card. " [4]

"For electronic purses to become a success, a distinct business case must exist for cardholders, for shopkeepers and for issuers. Electronic purses can have various advantages for cardholders. The most important aspect relates to convenience as there would be less need to carry loose change for low-value transactions. An additional advantage might be that, compared with notes and coins, the risk of robbery might diminish if the use of the electronic purses included a security feature such as a PIN code. Furthermore, prepaid cards would have the advantage that non-cash payment transactions could be made without necessarily being linked to a bank account. On the other hand, there are disadvantages as well: first, transaction costs may apply, and second, the electronic purse has to be supplied with value in advance, which may give rise to a transfer of float income from consumers to card issuers.

### **PAYMENT GATEWAYS:**

Payment Gateway is an online payment processing technology which helps businesses to accept credit cards and electronic checks. In other words, payment gateways are "Man-in-the-middle" which are located between e-commerce platforms and clients.



A payment gateway allows you to –

Make and take payments quickly and easily.

Keep your customer's data (information) and money secure.

Gain trust of your customers, so they are willing to hand over their money.

To choose the right payment gateway, you should follow the following guidelines –

You should finalize that payment gateway which is supported in your country, not all them operate globally.

You should check what payment gateways are supported better from your ecommerce platform. For example, PayPal gateway is fully supported by Magento because the same group have created them.

Payment gateway should be of 3.0 PCI data security standards.

Do you need payment gateway and merchant account or an all-in-one payment service provider?

You must see the charges and fees that will be deducted per transaction.

What payment method do they support? For example, VISA is a payment method, Master Card is another.

Do they support your type of business? For example, some of them don't deal with businesses that sell adult materials, betting, gambling, firearms selling, narcotics, etc.

Most Popular Payment Gateway Providers

Following is the list of the most widely used and popular payment gateway providers along with a brief history about them.

**PAYPAL** – You can find all the terms and conditions of their business model on their URL – <https://www.paypal.com/>. PayPal is one of the longest established and probably the best-known service for transferring money online.

**Amazon Payments** – The URL of this immensely popular payment gateway provider is – <https://payments.amazon.com/>. It was created in 2007, Amazon Payments provides your customers with the same checkout experience they get on Amazon.com

**Stripe** – The URL of this payment gateway is – <https://stripe.com/>. No monthly fees, no extra charges for different cards and different payment methods, also for different currencies. Stripe also offers a great API (Application Program Interface) as well.

**Authorize Net** – The URL for this popular payment gateway provider is <https://www.authorize.net/>. It is among the most powerful and well-known payment gateways. It is well-supported by e-commerce WordPress plugins.

**2Checkout** – The URL for this payment gateway provider is – <https://www.2checkout.com/>. 2checkout is one of the most simple and affordable credit card gateways

### **SECURITY ISSUES ON ELECTRONIC PAYMENT SYSTEMS, SOLUTIONS TO SECURITY ISSUES**

Today the security issues that threaten Electronic payment systems are changing constantly, and often extremely quickly. The most common threats include viruses, worms and Trojan horses. Viruses are spread via email or by downloading infected files. Viruses are a nuisance threat that can be categorized as a Denial of Service (DoS) tool due to the fact that they only disrupt electronic communications<sup>18</sup>. Nowadays there are thousands of different types of computer viruses and internet malicious programs. Malicious software can easily attack the mobile banking payment system by taking up passwords on the web browser or any cached information on operating system. For example the Zeus Trojan was used to target mobile bank users by inflicting defect SMS banking<sup>19</sup>. Worms can be categorized as special viruses that spread using direct Internet connections. They are standalone programs that do not require a host program for activation and spread themselves independently from computer to computer by exploiting security vulnerabilities or configuration errors in operating systems or applications<sup>20</sup>. Trojan horse programs launched against client systems pose the greatest threat to the e-Payment systems because they can bypass or subvert most of the authentication and authorization mechanisms used in an electronic transaction. The Trojan horses aim to spy on sensitive data (e.g. passwords, confidential data, etc.) and send it back to their owners to gain access to third-party computers.

Recent developments in e-payment has led to the creation of new kind of attacks. Intrusive methods that have a high degree of aggression are more and more used. Man-In-The-Middle is one of those methods that involves a type of attack where attackers intrude into an existing connection to intercept the

exchanged data and inject false information. It involves eavesdropping on a connection, intruding into a connection, intercepting messages, and selectively modifying data<sup>27</sup>. Man-In-The-Middle can be combined with Spamming or E-mail bombing that is caused by a hacker targeting one computer or network, and sending thousands of email messages to it. Sending unsolicited commercial emails to individuals is also achieved placing software agents into a third-party system and setting it off to send requests to an intended target<sup>28</sup>. Drive-by downloads are malware infections that represent a major threat to e-payment. Users get infected with such malware simply by visiting a particular website. These websites often contain legitimate content, but have been contaminated by harmful programs that smuggle malicious codes into the site<sup>29</sup>. A Masquerading or a spoofing attack as it is also known is a situation in which one person or program successfully masquerades as another by falsifying data and thereby gaining an illegitimate advantage. A common method of Masquerading is consists in sending a message that appears to be from someone else<sup>30</sup>. The impersonator is typically another user that has changed the username or the IP levels by changing the source and/or destination IP of the address of packets in the network

**SOLUTIONS TO SECURITY ISSUES** An effective authentication program should be implemented to ensure that controls and authentication tools are appropriate for all e-payment based products and services. No single control or security device can adequately protect a system connected to a public network. The method and system can be augmented by requesting for different security credentials such as PIN, cryptographic key, digital signature, biometrics, etc, to establish multiple layers of authentication<sup>32</sup>. The electronic payment system with a higher number of authentication factors may have higher secure level. This means that an electronic payment system with higher authentication factors will have a stronger security level which lowers or reduces the fraud vulnerability of the electronic payment system, and this eventually boost users confidence<sup>33</sup>. In order to properly protect the e-payment system both technical and legal solutions must be found. In Romania, specific legislation has been created by the development of Government Ordinance no. 130/2000 on the regime of distance contracts<sup>34</sup>, Law no.455/2001 on Electronic Signatures<sup>35</sup>, the Government Emergency Ordinance no. 193/2002 concerning the introduction of modern means of payment<sup>36</sup>, Law no.677/2001 on the protection of the processing of personal data and free movement of such data, with subsequent amendments<sup>37</sup>, Regulations of National Bank of Romania no. 4/2002 concerning transactions by electronic payment instruments and the relationship between participants in these transactions<sup>38</sup>, the Law no.365/2002 on electronic commerce<sup>39</sup> and the Order of the Ministry of Communications and Information Technology no. 389/27.06.2007 regarding the approval procedure of payment instruments with remote access applications such as Internet banking, home-banking or mobile banking<sup>40</sup>. Biometric based authentication and identification systems are the new solutions to address the issues of security and



privacy that are expected in the future years. Biometrics can become a possible solution that allows the automatic identification of a person based on her physiological or behavioral characteristics. It provides a better solution for the increased security requirements of our information society. As biometric sensors continue to become less expensive, the public will realize that biometrics is actually an effective strategy in case of fraud, making this technology more likely to be used in every transaction needing authentication

**UNIT-III: WEB BUSINESS CONCEPTS ONLINE COMMUNICATION:EMAIL, SMS, BLOGS, RSS & PODCASTS**

Before the advent of the electronic media, there were only two kinds of communication, verbal and non-verbal. But with the arrival of the World Wide Web, there are a plethora of methods that people can now communicate with each other. The online communication definition today, refers to how people as well as computers communicate with each other through a computer network and the internet.

Not a surprising factor, people are resorting more to online communication than the traditional forms due to its many advantages like the flexibility it provides for the person to communicate across the world with someone else. Parents and children and friends and siblings living in different corners of the world have been brought together by the click of a button. This form of communication also gives leverage to people who are more comfortable expressing their thoughts by putting them down on paper' meaning typing on the chat window or the email; than just speaking their thoughts out. It also gives an opportunity for a person to edit and correct what they want to communicate.

**Types of Online Communication**

Online communication can be a wide variety of things like communicating through chat rooms, through instant messaging applications, through electronic mails, through online forums, filling out requisite forms online, posting comments online through different social media sites or blogs, through social networking, or through online conferencing both video and audio. All of these types of online communication are being effectively used today increasingly.

**Emails:** Emails or electronic mails were the earliest forms of online communication. This is considered to be the sole reason for the decline of the postal service across the world. A method that saves time and money, it is still widely used by a multitude of people across the world for personal and professional communication. Emails work through an online interface and are hosted on the servers of different Internet Service Providers.

**SMS:** Another word for this is Short Messaging Service. As the name suggests, these are short messages with a capping of 160 alphanumeric characters that are transmitted from the sender to the receiver through the internet.

**Chats:** This is a very popular method of online communication as it allows a user to carry on a discussion with one or multiple people at the same time. The chat servers belong to a chat network through which the transcripts are broadcasted.

**Forums:** Also known as bulletin boards or discussion boards, these are online sessions that have multiple

users interact with each other by posting messages on the same chat trail. This is popular for having discussion and debates on any particular topic.

**Whiteboards:** This tool or application works like a physical whiteboard and enables the user to draw or write on an online interface. It is popular in educational institutions and is good for one-way communication.

**Instant Messaging:** This mode of communication is an enhanced method of the chat. Messages can be conveyed through a special software to any user who is part of the same instant messaging network. Both users have to be connected to the relevant network to be able to communicate online. However, if one user is not available they will be notified of getting a message from a user

### WHAT IS RSS?

RSS stands for "Really Simple Syndication". It is a way to easily distribute a list of headlines, update notices, and sometimes content to a wide number of people. It is used by computer programs that organize those headlines and notices for easy reading.

### WHAT PROBLEM DOES RSS SOLVE?

Most people are interested in many websites whose content changes on an unpredictable schedule. Examples of such websites are news sites, community and religious organization information pages, product information pages, medical websites, and weblogs. Repeatedly checking each website to see if there is any new content can be very tedious.

Email notification of changes was an early solution to this problem. Unfortunately, when you receive email notifications from multiple websites they are usually disorganized and can get overwhelming, and are often mistaken for spam.

RSS is a better way to be notified of new and changed content. Notifications of changes to multiple websites are handled easily, and the results are presented to you well organized and distinct from email.

### HOW DOES RSS WORK?

RSS works by having the website author maintain a list of notifications on their website in a standard way. This list of notifications is called an "RSS Feed". People who are interested in finding out the latest headlines or changes can check this list. Special computer programs called "RSS aggregators" have been developed that automatically access the RSS feeds of websites you care about on your behalf and organize the results for you. (RSS feeds and aggregators are also sometimes called "RSS Channels" and "RSS Readers".)

Producing an RSS feed is very simple and hundreds of thousands of websites now provide this feature, including major news organizations like the New York Times, the BBC, and Reuters, as well as many weblogs.

### RSS FEED PROVIDE THE FOLLOWING INFORMATION

RSS provides very basic information to do its notification. It is made up of a list of items presented in order from newest to oldest. Each item usually consists of a simple title describing the item along with a

more complete description and a link to a web page with the actual information being described. Sometimes this description is the full information you want to read (such as the content of a weblog post) and sometimes it is just a summary.

Podcasting is a free service that allows internet users to pull audio files (typically MP3s) from a podcasting website to listen to on their computers or personal digital audio players. The term comes from a combination of the words iPod (a personal digital audio player made by Apple) and broadcasting. A podcast is an audio programme produced on a regular basis, delivered over the internet in a compressed digital format and designed for playback on computers or portable digital audio players, such as the iPod.

A vodcast is a podcast consisting of video recordings, instead of solely audio.

### ADVANTAGES OF PODCASTING AND VODCASTING

- Good to listen to while travelling
- A good way to get a daily update
- Can be professional or relaxed
- Can be very informative

### DISADVANTAGES OF PODCASTING AND VODCASTING

- Can be time consuming and difficult to make, especially scripted podcasts
- Needs a good reader, good information and good writing in order for it to be interesting
- Audience for podcasts is smaller

### BEST PRACTICE

Podcasts or vodcasts can cover a variety of subjects; including novels, dramas, news, or even talk shows discussing daily events or the latest games. To help you start your very own podcast or vodcast, you can do the following:

- Ensure that you have enough time to script, record and edit the podcast or vodcast.
- Stay consistent with your uploads; schedule your updates so that listeners will know when new content will be posted.
- Be polite, and speak naturally and clearly.
- Choose topics about which you are passionate.
- Advertise your podcast or vodcast. Sharing the release and topic information on social media is a good way in which to obtain new listeners.

### TECHNOLOGY STANDARDS,

Technology standards are of considerable importance for invention, innovation, commercial transactions, and economic growth. Standard Setting Organizations (SSOs) establish many technology standards in addition to those set by market interactions and government actions. Because the development and implementation of technology standards interacts with economic decisions and market transactions, it is necessary to take standards into account in empirical economic analysis. However, there has been no comprehensive database that supports economic research on the critical effects of technology standards and SSOs. To help address economic research questions in this area, we have developed the Searle Center Database on Technology Standards and Standard Setting

Organizations. This is a comprehensive and systematic database of technology standards documents and information about SSOs. This paper introduces the Searle Center Database, provides an initial overview, and examines some potential applications of the database to economic research. The Searle Center Database consists of quantifiable characteristics of 629,438 standard documents. In particular, this information includes a database of 3,564,975 references between standard documents. In addition, the Database identifies institutional membership for a sample of 195 SSOs, and the rules of 36 SSOs on standard-essential patents (SEPs), openness, participation, and standard adoption procedures. Using the Internet Archives, we track both institutional membership and the SSO rules and procedures over time since the inception of the Archives in 1996. We identify 62,368 enterprises participating in at least one SSO. Technology standards are rules that have far-reaching economic consequences. Spulber (2013) emphasizes the central role of technology standards in the field of Innovation Economics because of the endogenous determination of standards, market structure, and innovative efficiency. Swann (2010b) identifies various purposes of technology standards, including reducing product variety, maintaining product quality and performance, measurement, codifying knowledge, assuring compatibility, articulating a vision of the industry, assuring health and safety, and controlling environmental quality. Swann (2010b) observes that technology standards affect economic conditions such as economies of scale, the division of labor, firm competencies, barriers to entry, network effects, transaction costs, manufacturing precision, trust, and risk. Technology standards provide a foundation for economic transactions. Technology standards often operate in the background allowing product compatibility and interoperability. For example, the U.S. Department of Commerce's National Institute of Standards and Technology (NIST), although not a typical SSO, provides a time measurement standard using atomic clocks. "NIST time" is used to time-stamp hundreds of billions of dollars in U.S. financial transactions each working day".<sup>1</sup> The time standard is essential to the operation of networks, "NIST time is also disseminated to industry and the public through the Internet Time Service, which as of early 2014 received about 8 billion automated requests per day to synchronize clocks in computers and network devices; and NIST radiobroadcasts, which update an estimated 50 million watches and other clocks daily".<sup>2</sup> To study technological standards it is also necessary to understand how they are developed. SSOs play a central role in establishing technology standards. SSOs are voluntary organizations consisting of industry members that develop and disseminate technology standards. There are about one thousand SSOs in operation, with many thousands of members.<sup>3</sup> SSOs develop tens of thousands of technology standards every year that interact with the innovative decisions of most manufacturers. Technology standards by SSOs interact with market-based de facto standards and government standards. For example, the European Telecommunications Standards Institute (ETSI) "produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and internet technologies".<sup>4</sup> Perhaps as a testament to the effectiveness of technology standards and SSOs, their operation primarily concerns technical and scientific personnel and goes largely unnoticed by the general public. Economists had studied various regulatory and market standards, but have devoted less attention to technology standards and the formal activities of SSOs. Economic research has been hampered by an absence of consistent information about technology standards and detailed characteristics of SSOs. Economists have benefited from the availability of databases related to other aspects of innovation, particularly patents. Studies of particular technology standards or particular

actions by a few SSOs are not directly comparable because of a lack of consistent data spanning diverse technologies and SSOs. There is also a need for data on technology standards and SSOs that allows different research studies to use the same data, facilitates replication and comparisons of empirical results, and allows the development of complementary databases. In addition to basic economic research, the Searle Center Database should also be useful for empirical research addressing public policy issues in the area of innovation. Public policy makers have expressed concerns about the effects of technology standards on competition and social welfare. An important policy question concerns interactions between technology standards and the market value of intellectual property (IP), particularly for standard-essential patents (SEPs). Antitrust policy and public policy towards IP requires much more extensive data about technology standards and SSOs and empirical analysis of that data. This paper discusses the methodology of the data collection, presents preliminary empirical insights, and considers some empirical research topics that are made possible by the new database. Section 2 presents an introduction to technology standards and SSOs. Section 3 provides a review of the empirical economic literature on standardization and discusses how the Searle Center database compares with available data used in previous research. Section 4 presents the data collection methodology, discussing in turn the analysis of SSO rules and policies, the collection of membership data, and the aggregation of databases on standard documents

### **GEOMETRY OF SOCIAL NETWORKS: GROWTH OF A NEW SCIENCE: METCALFE'S LAWS,**

Network effects typically account for 70% of the value of digitally-related companies.

Network effects were popularised by Robert Metcalfe, one of the co-inventors of the Ethernet and a co-founder of 3Com.

3Com created networking cards, that plugged into a computer giving it access to the Ethernet, a local network of shared resources like printers, storage and the Internet.

Metcalfe explained that whilst the cost of the network was directly proportional to the number of cards, the value of the network was proportional to the square of the number of users. Or in other words, the value was due to the connectivity between users, enabling them to work together and achieve more than they could alone.

#### Metcalfe's Law

"Metcalfe's Law" says that a network's value is proportional to the square of the number of nodes in the network. The end nodes can be computers, servers and simply users. For example, if a network has 10 nodes, its inherent value is 100 ( $10 \times 10 = 100$ ). Add one more node, and the value is 121. Add another and the value jumps to 144. Non-linear, exponential, growth.

Network effects have become an essential component of a successful digital businesses. First, the Internet itself has become a facilitator for network effects. As it becomes less and less expensive to



connect users on platforms, those able to attract them in mass become extremely valuable over time. Also, network effects facilitate scale. As digital businesses and platforms scale, they gain a competitive advantage, as they control more of a market. Third, network effects create a competitive advantage

### **SPAM, CLUSTERING,**

Spam emails constitute a notorious and consistent problem still far from being solved. In the last year, out of the daily 191.4 billions of emails sent worldwide in average [20], more than 70% are spam emails. Spam emails cause several problems, spanning from direct financial losses, to misuses of Internet traffic, storage space and computational power [22]. Moreover, spam emails are becoming a tool to perpetrate different cyber-crimes, such as phishing, malware distribution, or social engineering-based frauds. Given the relevance of the problem, several approaches have already been proposed to tackle the spam email issue. Currently, the most used approach for fighting spam emails consists in identifying and blocking them on the recipient machine through filters, which generally are based on machine learning techniques or content features, such as keywords, or non-ASCII characters [8] [25] [5]. Unfortunately, these countermeasures just slightly mitigate the problem which still impose a non-negligible cost to users and companies [22]. To effectively fight the problem of spam emails, it is mandatory to find and persecute the spammers, generally hiding behind complex networks of infected devices

which send spam emails against their user will, i.e. botnets. Thus, information useful in finding the spammer should be inferred analyzing text, attachments and other elements of the emails, such as links. Therefore, the early analysis of correlated spam emails is vital [7] [2]. However, such an analysis, constitutes an extremely challenging task, due to the huge amount of spam emails, which vastly increases hourly (8 billions per hour) [20] and for the high variance that related emails may show, due to the use of obfuscation techniques [19]. To simplify this analysis, huge amount of spam emails, generally collected through honey-pots, should be divided into spam campaigns [29]. A spam campaign is the set of messages spread by a spammer with a specific purpose [6], like advertising a product, spreading ideas, or for criminal intents. This paper proposes a methodology to fast and effectively group large amount of spam emails by structural similarity. A set of 21 discriminative structural features are considered to obtain homogeneous email groups, which identify different spam campaigns. Grouping spam emails on the base of their similarities is a known approach. However, previous works mainly focus on the analysis of few specific parameters [2] [21] [29] [30], showing results whose accuracy is still somehow limited. The proposed approach in this work is based on a categorical hierarchical clustering algorithm named Categorical Clustering Tree (CCTree), introduced in [27], which builds a tree whose leaves represent the various spam campaigns. The algorithm clusters (groups) emails through structural similarity, verifying at each step the homogeneity of the obtained clusters and dividing the groups not enough homogeneous (pure) on the base of the attribute which yields the greatest variance (entropy). The effectiveness of the proposed approach has been tested against 10k spam emails extracted from a real recent dataset [1], and compared with other well-known categorical clustering algorithm, reporting the best results in terms of clustering quality (i.e. purity and accuracy) and time performance. The contributions of this paper can be summarized as follows:—We present a framework to effectively and efficiently analyze and cluster large amounts of raw spam emails into spam campaigns,



based on a Categorical Clustering Tree (CCTree) algorithm.—We introduce a set of 21 categorical features representative of email structure, briefly discussing the discretization procedure for numerical features.—The performance of CCTree has been thoroughly evaluated through internal evaluation, to estimate the ability in obtaining homogeneous clusters and external evaluation, for the ability to effectively classify similar elements (emails), when classes are known beforehand. Internal and external evaluation have been performed respectively on a dataset of 10k unclassified spam emails and 276 emails manually divided in classes.—We propose and validate through analysis on 200k spam emails, a methodology to choose the optimal CCTree configuration parameters based on detection of maximum curvature point (knee) on an homogeneity-number of clusters graph.—We compare the proposed methodology with two general categorical clustering algorithms, and other methodologies specific for clustering spam emails. The rest of the paper is structured as follows. Section 2, reports the formal description and the theoretical background of the Categorical Clustering Tree algorithm. Section 3 describes the proposed framework, detailing the extracted features and reporting implementation details. Section 4 reports the experiments to evaluate the ability of CCTree in clustering spam emails, comparing the results with the ones of two well known categorical clustering algorithms. Also the methodology to set the CCTree parameters is reported and validated. Section 5 discusses limitations and advantages of the proposed approach reporting result comparison with some related work. Other related work on clustering spam emails is presented in Section 6. Finally Section 7 briefly concludes proposing future research directions.

### **CREATING VALUE WITH NETWORKS.**

Value-creating networks have been studied for a few decades. Many theoretical researchers have presented their own models and methods to describe and analyse value creation in network for organisations. Empirical research and material is lacking, which is a considerable deficiency in this sector. Most of the value network researchers have been following similar methods when it comes to value networks, but terminology and scope frequently varies.

Johnston and Lawrence (1991) present a concept named 'value-adding partnership' (VAP) where a set of independent companies work closely together to manage the flows of goods and services along the shared value-added chain. Traditionally, transactions between the steps from raw material to final consumption have been arm's length relationships or hierarchies of common ownership. In VAP each player has a stake in the other's success and the whole chain is monitored to enhance competitive dynamics. Good examples of successful VAPs can be found from Italy where small companies with cooperative relationships have replaced large vertically integrated textile mills. These small companies have succeeded mainly because there is more opportunity for innovation, flexibility and specialisation as compared to large bureaucratic organisations. (Johnston and Lawrence 1991) Excellent examples are also Japanese car manufacturers, such as Toyota, where thousands of companies are working for a single large firm forming a Keiretsu. Keiretsu membership provides very high level of security against competition, market forces and financial difficulties and members are able to stabilise their performance. (Miyashita and Russell 1994) Normann and Ramírez (1994) present another view, a value constellation, where actors come together to co-produce value. Instead of performing activities sequentially (Porter's value system) activities are now performed simultaneously and value is created together instead of each actor creating value one after another. In this new value network, organisations focus is in the value-creating system itself versus that of the company or the industry (Peppard and Rylander 2006) In value constellation actors interface with each other and perform the 'right' activities for them (which they can perform fastest, cheapest, etc.) creating value to all parties. To be effective, firms should also take into consideration that their value creation coincides with customers' value creation logics by using for example joint problem solving processes. Normann and

Ramírez propose that instead of indentifying and fulfilling customers needs it is more helpful to focus on identifying and offering activities that fit customer's own activities. Successful value constellation results are lower unit cost, fight against inefficient cross-subsidies, optimised risk-sharing, risk-absorption and improved risk-management. (Normann and Ramírez 1994) Parolini (1999) continues the development already done by Normann and Ramírez by assuming that, "rather than being considered simply as sets of economic players, value-creating systems should be seen as sets of activities that are jointly involved in the creation of value." In Parolini's model (the value net) value-creating systems are a fundamental object of investigation and activities as the basic unit of analysis. Parolini proposes the following definition for value-creating system: -"a value-creating system (VCS) can be defined as a set of activities creating value for customers; -these activities are carried out using a set of human, tangible and intangible resources; -they are linked by flows of material, information, financial resources and influence relationships; -VCSs also include consumption activities, insofar the value that final consumer enjoy is also a function of the way they use and consume the potential value received; -final consumers not only receive and consume the value created, but can also participate in value creating activities; -activities may be governed by the market, a hierarchy or intermediate forms of co-ordination (company networks); -various economic players may participate in a VCS (companies, families, public bodies, non-profit organizations) by taking responsibility for one or more activities; -an economic player may participate in more than one VCS." Parolini emphasise the need to establish stable connections and lasting alliances with other economic players to ensure the competitiveness of the system. Parolini notes that "this is only possible if the companies have the same opinion concerning the value that they are to create together, are convinced that they need each other in order to create it, and have come to an

11 agreements as to how the created value is to be divided". A strategic alliance can thus be created only if all participants believe that they can benefit from the cooperation. (Parolini 1999) When considering the activities of individual companies, it is possible to understand a part of value received by the final customer. Parolini's value net model consists of activities that jointly participate in the creation of value and the flows of material, information, money and resources which connect these activities as shown in Figure 5. It is important to define the VCSs activities and relationships from the customer's point of view and go "backwards" to find the important activities and relationships creating value for customers. It is dangerous to start the modelling from drawing the value chain of firms participating in it since institutional and organisational boundaries may restrict the analysis. (Parolini 1999) Fig. 5. The value net (modified from Parolini 1999) The value net is also a great tool for individual firms to broaden their perspective. When companies concentrate exclusively on themselves, they often optimise and correct only their own work and fail to see that the problem may lie somewhere else in the system. Individual firm's efforts to improve operation might be wasted because the value-creating system in general is failing or the final customer cannot receive or perceive the value created by the firm. Customers also tend to make judgements at the level of the whole value-creating system thus the extension from individual companies to value-creating systems in strategic analysis is justifiable. (Parolini 1999) Bovet and Martha (2000b) also use the term value net and define it as a network of partnerships. According to them the value net is a dynamic, high-performance network of customers/supplier partnerships and information flows, which objective is to create value for customers, the company and its suppliers. Value net, in their opinion, forms itself around its customers according to Figure. 6. The company controls the customer touch points and is located in the inner concentric circle surrounding the customer. The outermost circle represents the constellation of providers that perform the sourcing, assembly and delivery activities. (Bovet and Martha 2000b)

12 Fig. 6. The value net (modified from Bovet and Martha 2000b) Value net defined by Bovet and Martha

(2000b) have five important characteristics, namely: -Customer-aligned: customer choices trigger activities in the value net -Collaborative and systemic: companies engage in value-creating relationships -Agile and scalable: flexible production, distribution and information flows -Fast flow: order-to-delivery cycles are fast and compressed. -Digital: digital technology and digital supply chain concepts Value net design is based on customers' needs which are seamlessly linked back to a carefully designed fulfilment engine. Many capabilities of the fulfilment engine are drawn from the collaboration across agile, scalable and fast network of partners. One important tool in value net model of Bovet and Martha is the concept of digital supply chain which makes it possible to achieve superior customer satisfaction and company profitability. (Bovet and Martha 2000b) Kothandaraman and Wilson (2001) call their concept a value-creating network. In value-creating networks the focus is on the key firms in the network that delivers value to the final consumer. This model thus moves beyond considering just VAPs where firms collaborate to improve their position in the markets to the consideration of customer value. Kothandaraman and Wilson (2001) develop a rationale for value-creating networks using three building blocks which makes it possible to understand the value creation process and its links to core capabilities of firms in the network. These building blocks are superior customer value, core capabilities and relationships, and are presented thoroughly in chapter 3. In this paper we consider value-creating network to be a complex network structure where firms' core competencies are linked to each other through value exchanges such as flows of information, material, resources and money. In value-creating networks these flows can run horizontally but also vertically. Flows are thus multidirectional and sometimes simultaneous, making information available to participants more timely and real-time. In value-creating networks different economic actors, suppliers, partners, allies and customers work together to create value. Value, instead of pure cost, is the key driver in the construction of any competitive strategy and the value network is designed around the activities required to produce the end product (Peppard and Rylander 2006). In the value-creating network model the activities are sequential, but also parallel, forming a network of core activities which produce value to the end customer. Instead of concentrating only on their own core competencies, firms understand the meaning and importance of the network around them and know how to benefit. This makes it possible for different actors to maximise and optimise the whole network instead of small pieces of the whole.

13 A good example of value-creating network is travel services provided through the Internet depicted in Figure 7. Here a travel agency, hotels, airlines, and for example a concert hall put their effort on an online service where customer can find real-time information about tickets, available rooms and prices. The travel information is now available anytime and anywhere making travel reservation easier than ever before. Customers can choose flights, hotel and amusement as best fitted for themselves and with one click the hotel, the airline and the concert hall can see the reservations. Each firm provides products and services which fit their core competencies and just share information with each other to create value also to the other participants in the network. Network participants often work also directly with each other (airline provides cheap hotel rooms in their partner hotel, customer contracts travel agency directly) which makes the network even more versatile and complicated. Fig. 7. An example of value-creating network

In viewing and analysing value-creating networks the objective is to understand what activities are most important in product/service provision and what brings value to the end customer (or other network participants!). Network activities should be reviewed regardless of organisational and firm boundaries in order to see who in fact should produce and what. This analysis makes it possible to see potential for outsourcing and cooperation, but also what each firms should produce in-house to stay and compete in the markets. Analysis gives opportunities to optimise the whole network and possibilities to change the network structure to better suit the changing environment. Usually it is more practical to work and strive together towards a common goal instead of everyone working and optimising just own operation. When each firm does what they do best, and is active part in the network forming partnerships and alliances, they can support each other and make the whole network work more efficiently and effectively. In contrast to value-creating chain, in value networks the value is created together through a set of linked activities (core competencies) of several firms. The value created is not just for the customers of the network, but also received by society and all firms

participating in the network (see Figure. 8).

14 Fig. 8. Value creation in value network One should remember that networks do not remain stable over time. They evolve alongside with competitors' strategies, new technologies or regulatory events. These forces constantly change the structure and configuration of the network. (Peppard and Rylander 2006) Many technical networks have traditionally been structured into vertically integrated monopolies, each directly owning all the components of the value chain. In the future they will differ at least in two ways, first, the firms will focus on selected high-profit, high-growth niches and secondly they will own only a select portion of the assets in the value chain. Networks start forming and each company in the network will "cherry pick" and configure only those value-adding activities that they can do best and which are meaningful to a customer segment. (Weiner et al. 1997)

**MARKETING ACTIONS & ITS RESPONSES, VALUE OF A CUSTOMER CONTACT,**

**WEB CHAIN CONCEPT:**

**WEB CHAIN BENEFITS & PROBABILITIES, CUSTOMER LIFETIME VALUE**

**UNIT-IV: ONLINE MARKETING & E RETAILING**

**ONLINE MARKETING–BUSINESS MODELS OF E-MARKETING–ONLINE ADVERTISEMENT ADVERTISEMENT METHODS & STRATEGIES E-RETAILING: INTRODUCTION, INTERNET ENABLED RETAILING: ONLINE SHOPPING PROCESS, INFORMATION, PRICE & SHIPPING COST, PROBLEMS WITH TRADITIONAL STORES, ADVANTAGES OF ONLINE RETAILERS, ACQUIRING INFORMATION FROM THE E-RETAILING SITES, EVALUATING ALTERNATIVES, PLACING ORDER, MULTI-CHANNEL SHOPPING BEHAVIOUR, MULTI-CHANNEL CHALLENGES.**

