BCA
G.G.S.INDRAPRASTH UNIVERSITY, DELHI
BCA –305 Electronic Commerce

Objective: - To understand the process of Electronic commerce and Business strategy involved in it.

UNIT-I

An Overview of E-Commerce: Trade Process & Trade Cycles their linkages with information exchange; Definitions of E-commerce & E-business & their difference; Problems with Manual Systems, Aims of E-commerce, Functions of E-commerce, Applications of E-commerce in business functions, Tools & Technologies for E-commerce, Types of E-commerce, Operational & Strategic benefits of E-commerce, Issues & Challenges in E-commerce .

Electronic Data Interchange (): Definition, Concept & Evolution of EDI, Traditional versus EDI enabled system for document exchange, EDI Layered Architecture, Process of EDI Message Exchange, Components of EDI, UNEDIFACT Standards & Message Structure, EDI in India, EDI enabled procurement process, EDI Implementation, UN 'Model Interchange Agreement' for international commercial use of EDI.

Web based E-Commerce: Need for web based business, Choosing the right format of website: Characteristics of PR site, Marketing site, Sales site/web-store and vertical & horizontal portals; Steps in setting up business on Internet: Selection & registration of domain name, Website development-client & server side tools, web authoring tools, catalogue & web store tools, Website hosting considerations-own versus rented server; Website Maintenance Online Promotion tools & techniques: Getting links to your site, banner advertisements & measuring advertisement effectiveness, Web Traffic Analysis: Various measures, structure of log file data at server side & its analysis for promotion and tools for analysis, Search Engine optimization techniques, Payment Gateways for online payment, Security of transactions on Web: Selling through Secure Servers, use of digital certificates and international standards.

[No. of Hrs: 12]

UNIT – II

Intranet, Extranet and VPN: Architecture of Intranet, Intranet Software, Applications of Intranets, Intranet Application Case Studies, And and Considerations in Intranet Deployment; The architecture of Extranets, Extranet Products & Services, Applications of Extranets, Business Models of Extranet Applications; Virtual Private Network (VPN): Architecture of VPN - service provider dependent & service provider independent configurations, VPN Security- User authentication & Data Security.

Electronic Payment Systems: E-cash: Purchasing & using of e-cash; Electronic Purses their loading with cash and use; E-cheque payment system; Online Third Party Verified Payment System through Credit & Debit Cards & encryption mechanism; ATM based cash disbursement system; Electronic Bill Payment System; 6. Inter bank clearing system.

Security E-Commerce Transactions: Security issues: confidentiality, integrity, authentication, non-repudiation & access control their objectives & techniques; Types of security attacks; Cryptography & Digital Signatures: Symmetric & asymmetric cryptography, Public-Private Key Cryptography, Digital signatures & their use, Public Key Infrastructure (Digital Certificate, Certification Authority, Registration Authority, Key Repository), SSL and SET, Legal issues in cryptography [No. of Hrs: 12]

UNIT – III

Business Strategy in an Electronic Age: Impact of Internet on Competition - Porter's Five Forces Model & Business Strategies in Digital Economy; Impact of IT Enabled Systems on Value Chain - Porter's Value Chain Model; Supply Chain & Supply Chain Management: Definition & flows in a supply chain, Evolution of supply chain-JIT & Quick Response Retailing, Push, Pull and Built-to-order model of supply chains, E-commerce enabled supply chain management using Internet, Intranet & Extranet.

Business Process Management: Concepts of Business Process Management & Business Process Reengineering; Call Centre operations: Purpose & functions, mode of operations, Components (Telephony, Web, Application servers & middle ware, Desktop applications); Customer Relationship Management (CRM). [No. of Hrs: 10]

UNIT – IV

Technology & Legal Issues in E-Commerce: Technological Issues: Availability of telecom infrastructure, interoperability, bandwidth issues, technical standards & spectrum management, Expansion of Internet: 128 bit IP addressing issue; Legal Issues: Uniform Commercial code for E-commerce ('Model Law on Electronic Commerce' by United Nations Commission on International Trade Law, IT Act 2000 by Govt of India), Intellectual Property Protection (Copyrights, Patents, Trademarks & Domain Names), Privacy, Security (storage of electronic messages & their evidence value), Customs & Taxation laws, Role of governments & regulatory bodies, Jurisdiction issues.

Applications of E-Commerce & Case Studies: 1. Case studies & applications of e-commerce in Retailing, Banking, Manufacturing, Airlines & Railway reservation & e-governance; 2. Cyber Crimes. [No. of Hrs: 10]

Unit – I

An Overview of E-Commerce

In its simplest form ecommerce is the buying and selling of products and services by businesses or consumers over the World Wide Web.

- lower prices offered by vendors operating with less margin than a bricks and mortar store
- greater convenience of having a product delivered rather than the cost of time and transport and parking of going to a store
- sourcing product more cheaply from overseas vendors
- great variety and inventory offered by online stores
- comparison engines that compare and recommend product
- auction sites, where they did for goods

Trade process & trade cycles their linkages with information exchange

Proto-globalization distinguished itself from modern globalization on the basis of expansionism, the method of managing global trade, and the level of information exchange. The period of proto-globalization is marked by such trade arrangements as the East India Company, the shift of hegemony to Western Europe, the rise of larger-scale conflicts between powerful nations such as the Thirty Year War, and a rise of new commodities—most particularly slave trade. The Triangular Trade made it possible for Europe to take advantage of resources within the western hemisphere.

The transition from proto-globalization to modern globalization was marked with a more complex global network based on both capitalistic and technological exchange; however, it led to a significant collapse in cultural exchange

One of the most significant differences between proto-globalization and archaic globalization was the switch from inter-nation trading of rarities to the trading of commodities. During the 12th and 13th centuries it was common to trade items that were foreign and rare to different cultures. A popular trade during archaic globalization involved European merchants sailing to areas of India or China in order to purchase luxury items such as porcelain, silk and spices.

Definition of e-commerce and e-business

E-Commerce

E-commerce is "any transaction completed over a computer-mediated network that involves the transfer of ownership or rights to use goods and services," defines the U.S. Census Bureau. Transactions aren't required to have a price and include both sales and items like free downloads.

E-commerce includes transactions made on the internet, Intranet, Extranet, World Wide Web, by email and even by fax.

E-Business

E-business is broader than e-commerce; including the transaction based e-commerce businesses and those who run traditionally but cater to online activities as well. An e-business can run any portion of its internal processes online, including inventory management, risk management, finance, human resources. For a business to be e-commerce and e-business, it must both sell products online and handle other company activities or additional sales offline.

Their difference

E-commerce branches into two major groups: online purchasing and online shopping. Online purchasing businesses offer customers the ability to find information, place orders, request quotes or prices and submit purchase orders. Online shopping businesses provide information about products so that consumers can make a decision whether or not to purchase a product. Many e-commerce businesses practice online shopping and purchasing strategies to assemble an online store.

Problems with manual systems

Slow Retrieval of Data - The information customers are stored in different parts of the site and take a long time to retrieve the data. In all it can take up to 30 minutes finding the relevant information on the person. The Delivery goes out the next day. Deliveries are sometimes held up due to the amount of time taken to get the relevant information. This leads to unhappy customers

Paper Wastage - Much paper is waste due to the number of customers in the company. Information on each of the orders is stored in the customer's file on another page.

Unproductive use of storage space - Paper takes up a massive amount of room in the site. If a computer system was bought the paper could all go and there would lots more free space which could be used for other purposes.

Poor Data Storage - All the data is stored in filing cabinets. Data could be misplaced due to human error or in the event of a break in data could on the customer could be stolen very easily.

Aims of E-commerce

Fast loading pages. Compact, efficient code and images are all essential to fast loading pages that allow visitors to see what they came to the site for quickly before hitting the back button.

Clean, product centric layout. We want your visitors to be able to find the products that they want quickly and in as little number of steps as possible. This means dynamically generating web pages based on user metrics so that they are presented with the best possible product mix on their visits. It also means an emphasis on displaying products and not on gimmicks. Efficient and intuitive navigation structure. Customers should be able to browse your site as easily as possible so that they can find what they came for and even what they may not be aware of. Checkout oriented usage flow. The site should be as simple to use as possible and inspire confidence in the user so as to lead them from product selection through payment as painlessly as possible. Search engine friendly code. The site should be as search engine friendly as possible so that potential customers can find your site when searching for the goods or services which you carry. To accomplish this the pages should be created in such a way to emphasize specific keywords. Other strategies can include creating multiple landing pages for specific products or services that different end users might be searching for using different terms.

Functions of E-commerce

These are the typical functions of an e-commerce system available both on back office and front office::

- Registration:- In order to make a purchase, users must register with the site, providing all the information needed for shipping and billing. The data will be stored on a database and will be available from the back office.
- Basket: - The basket is a tool that, like a shopping basket, allows users to select the products they want and then go to the checkout for payment. Managing the basket means:
- Payment: - The payment system is a mechanism that facilitates dialogue between the parties involved in financial transactions: the bank, the store and you with your credit card.
- Product management: - This is the main part of the e-commerce system and provides all the features required for product placement, order fulfillment, etc.., key to the management of online sales.
- Orders management: - Discounts and promotions are managed for a single product or product category.
  This second phase of the site requires a detailed analysis of your current storage and order management systems with which it will be necessary to integrate
- VAT and shipping costs: - In addition to the cost of products purchased, the system manages the VAT and the shipping charges. The e-commerce module is able to manage VAT rates in countries within and outside the EU. Shipping costs both fixed and variable based on the weight and volume of the shipment

Applications of E-commerce in business functions

You can buy and sell almost everything at your doorstep with the magic of e-commerce in this 21st century which will be known for information revolution. E-commerce has changed your lifestyles entirely because you don't have to spend time and money in travelling to the market. You can do your e-payments with the help of e-commerce.
You can pick up the pace of your online business with the help of e-commerce application development and web development solutions. The ecommerce solutions offer many advantages as follows:
E-commerce is one of the cheapest means of doing business as it is ecommerce development that has made it possible to reduce the cost of promotion of products and services.
There is no time barrier in selling the products. One can log on to the internet even at midnight and can sell the products at a single click of mouse.
The on-time alerts are meant for the convenience of the consumers and inform the consumers about new products.
E-commerce reduces delivery time and labor cost thus it has been possible to save the time of both – the vendor and the consumer.
Hence, in this cut-throat competition, an interactive user friendly and focused website in the form of online shops can generate you good business. You can find a lot of web development services from where you can get your website made but it is advisable to hire a reliable and user friendly web development service.
If you possess an e-commerce shop then this proves that you are a customer-oriented firm and you are interested in knowing about the needs of your customers.

Tools & technologies for e-commerce

Site Search, SEO and Email Marketing Ranked Top Three E-commerce Technology Tools of Choice by U.S. Retailers, Reports SLI Systems Survey

Hundreds of Retailers Highlight Marketing and E-commerce Trends they Believe Will Drive Business, Today and in the Future

Close to 90 percent of U.S. retailers rank site search, search engine optimization (SEO) and email marketing as the most important e-commerce technologies helping to promote their online businesses, according to a survey released today by SLI Systems, a provider of on-demand search services for Internet and e-commerce sites. Forty percent of retailers ranked social media tools, such as blogs and podcasts, as gaining importance, and 38 percent highlighted that user-generated content is increasing in popularity, according to the survey.

SLI Systems' "Trends in E-Commerce" Survey 2008, conducted in conjunction with online survey provider Zoomerang, found that nearly all of the participating retailers (87 percent) are currently employing site search, SEO and email marketing strategies, while many expect to pilot new technologies such as social media tools (47 percent) and online video (32 percent) in the next 12 months.

"Retailers are competing for consumer dollars, and they can compete better by bringing new tools to the customer experience," said Susan Aldrich, senior vice president at the Patricia Seybold Group. "For example, a site with great site search, personalized with the merchandise most appealing to that customer, and providing the reassurance of customer ratings and reviews, will attract and keep customers by streamlining the tasks of researching and selecting the products they need. Leading retailers are using these ecommerce practices, and also managing their customers' experience from Internet search on through to the shopping cart, to promote sales and customer loyalty."

It includes responses from 322 decision-makers at U.S. retail organizations, 74 percent of which are multi-channel vendors. Additional key findings from the poll included the following:

- 91% of the retail companies surveyed cited site search as critical, very important or important to their online businesses.
- Of the retailers that have measured the impact site search has had on their businesses, 87% reported positive results.
- 54% saw an increase in sales as a direct result of adding new site search capabilities, while 44% experienced greater conversion rates and 40% cited better customer satisfaction.
- Of the retailers polled, close to 60% said they would be likely to consider a hosted (SaaS) site search solution over a traditional installed application to reduce costs, lessen the strain on IT resources and make for more rapid deployment.

Types of e-commerce

Business to Consumer (B2C):- B2C stands for Business to Consumer as the name suggests, it is the model taking businesses and consumers interaction. Online business sells to individuals. The basic concept of this model is to sell the product online to the consumers.

B2C is the indirect trade between the company and consumers. It provides direct selling through online. For example: if you want to sell goods and services to customer so that anybody can purchase any products directly from supplier's website.

Business to Business (B2B):- B2B stands for Business to Business. It consists of largest form of Ecommerce. This model defines that Buyer and seller are two different entities. It is similar to manufacturer issuing goods to the retailer or wholesaler.

Benefits:

- Encourage your businesses online
- Products import and export
- Determine buyers and suppliers
- Position trade guides

Consumer to Consumer (C2C):- C2C stands for Consumer to Consumer. It helps the online dealing of goods or services among people. Though there is no major parties needed but the parties will not fulfill the transactions without the program which is supplied by the online market dealer such as eBay.

Peer to Peer (P2P):- It is a discipline that deal itself which assists people to instantly shares related computer files and computer sources without having to interact with central web server. If you are going to implement this model, both sides demand to install the expected software so that they could able to convey on the mutual platform. This kind of e-commerce has very low revenue propagation as from the starting it has been tended to the release of use due to which it sometimes caught involved in cyber laws.

M-Commerce: - It deals with conducting the transactions with the help of mobile. The mobile device consumers can interact each other and can lead the business. Mobile Commerce involves the change of ownership or rights to utilize goods and related services.

Operational & strategic benefits of e-commerce

Once a utility is committed to achieving the advantages of E-Commerce and understands the importance of strategy, it`s time to actually develop a strategy that addresses its specific needs and priorities.

Step 1: Develop a Detailed Project Plan. Detail all key E-Commerce project information, including schedule, goals, objectives, participants, scope and deliverables. Time, people and resource dedication is important here.

Step 2: Define the Future E-Commerce State. Identify the utility`s E-Commerce focus, capabilities, performance expectations, functionality and critical success factors. This step develops the organization`s vision, goals, objectives and expectations of performance and functional capabilities.

Step 3: Establish Business Performance Metrics. Establish the organizational performance metrics of the E-Commerce project through the situation assessment.

Step 4: Weigh Strategic Options. Strategic options are opportunities that are attractive for E-Commerce applications. This step also includes creating expectations of performance, associated risks and requirements for implementation.

Step 5: Identify Transitional Alignment Issues. Identify current and anticipated transitional issues associated with the E-Commerce implementation. The deliverable for this step is identifying the issues, anticipated impact and contingency response.

Step 6: Develop an Implementation Plan. Develop an E-Commerce application implementation plan to achieve the goals and objectives outlined in the previous steps. All technical requirements should be carefully explored and evaluated, including all custom and packaged software and hardware solutions. Communicating with all involved parties is also a critical element of the implementation plan.

Step 7: Implement the E-Commerce Application. Implementation includes being on-site to install, customize and configure the chosen E-Commerce package into the utility`s business environment. The specific steps include project management, installation planning, software and hardware installation, software configuration, installation record and basic skills instruction.

Issues & challenges in e-commerce

Electronic commerce is a phenomenon that is arousing avid interest in industrialized countries and, more recently, in the developing world.

- Issue and Challenges of Global Implementation E-Commerce (Economic Factors) Cost Justification High cost of implementation. Mistake due to the lack of experience inflate the cost. Justification of cost not on tangibles factors. Justification of cost always based on intangibles factors such as improved the customer service, increase the value of advertisement and gain competitive advantages. Number of sellers and buyers. Number of people connected to the Internet.

- Issue and Challenges of Global Implementation E-Commerce (Economic Factors)Issue on Internet and Telecommunication Infrastructure Digital divide between the developed world and most developing countries. Accessibility to the Internet is still expensive. Global infrastructure of the web is unevenly developed. Skill Shortage and lack of trained personal.
- Issue and Challenges of Global Implementation E-Commerce (Technical Factors) Security Issues Consumers are distrustful about the safety of information. Incident on unsophisticated hackers can steal information easily. Many companies are not pay enough intention on security. Reduce the consumer confidence. Reliability Issues. Network Infrastructure and application systems must be continuously upgraded, fine tuned and maintained regularly. Vulnerable of sites to denial of services attack. Vulnerable to the virus spread. Reduce the consumer confidence.
- Issue and Challenges of Global Implementation E-Commerce (Social Factors) Privacy and Security Issues Customer are reluctant to buy online, reluctant to disclose the confidential data such as home address, identification number and credit card number. Companies did not give guarantees on security of information. Cultural Diversity. Ability

of customization the interface for individual and group needs. Customization process is expensive.

- Issue and Challenges of Global Implementation E-Commerce (Social Factors) Lack of Trust Issues Customer trust is important such as friend's recommendation, previous experience, or through transparent legislative infrastructure. Company also needs to well establish the "brand identity" of company. Absence of "Touch and Feel" functions.
- Issue and Challenges of Global Implementation E-Commerce (Legal Factors) Protection of Intellectual Property Right Issues Digital media are compact, easily stored, easily to being replication, transmission and alteration. Internet was designed to be open and transmit information freely around the world. Different countries have different attitudes towards intellectual property rights. New laws should be design and inadequate action should be imposing to protect the original copyrighted contribution.
- Issue and Challenges of Global Implementation E-Commerce (Legal Factors) Product Sale those are restricted or illegal by another country Companies should more careful and fully obey the rules and laws of other country. Example such as selling the wine, weapons, restricted chemical items or online gambling.

Electronic data Interchange (EDI):-

Definition

What is Electronic Data Interchange (EDI)? The purpose of this article is to provide a layperson's understanding of the electronic data interchange process. An overview of EDI benefits and drawbacks is included.

The electronic data interchange process is the computer-to-computer exchange of business documents between companies. EDI replaces the faxing and mailing of paper documents.

Concepts & evolution of EDI

Electronic data interchange (EDI) is a method for transferring data between different computer systems or computer networks. It is commonly used by big companies for e-commerce purposes, such as sending orders to warehouses or tracking their order. It is more than mere e-mail; for instance, organizations might replace bills of lading and even cheques with appropriate EDI messages. It also refers specifically to a family of standards.

EDI can be formally defined as the transfer of structured data, by agreed message standards, from one computer system to another without human intervention.

Traditional enabled system for document exchange

Many large retail companies have enthusiastically pursued Electronic Data Interchange, EDI, with their Suppliers for the reduced transaction cost, increased accuracy, and timeliness that it offers. Many have Even reached the stage where a large proportion of their replenishment transaction value is controlled by EDI. But the familiar Pareto principle applies: 20% of their suppliers, by number, account for 80% of the transaction value. However, a large proportion of

suppliers, by number, usually small to medium-size enterprises (SMEs) supplying small ranges of products, remain outside the electronic replenishment system. These suppliers often lack the computer expertise and resources to implement EDI through the traditional approach using the services of a Value Added Network (VAN), expensive translation software usually provided by the VAN, and private wide area networks. Furthermore, with relatively simple business operations and a small number of trading partners, they have little to gain from the integration and connectivity that EDI offers. This makes it difficult for the large customer to achieve 100% EDI compliance, leaving them supporting both electronic and paper-based systems, and creating a barrier to implementation of advanced supply chain and logistics management techniques. Evidently, the traditional approach to obtaining compliance by threatening "desourcing" has not been effective with small suppliers. These key EDI players are increasingly looking to the Internet as a means to solve this nagging problem.

EDI enabled system for document exchange

The Internet is a world-wide network of networks with excellent throughput capabilities. Internet transmission charges are low compared to those of a VAN and do not depend on the amount of data transferred. More importantly, the Internet provides simple and widely understood new methods for information exchange. Non-EDI-enabled trading partners can use a web browser to fill in a form-based web page representing a business document, in order to comply with their EDI-enabled trading partner's information requirements. To access the Internet, they need only a personal computer, a modem and an Internet Service Provider (ISP). They require little more computer expertise than is now becoming common knowledge.

EDI Layered Architecture

Inter organizational Commerce and EDI: Systems that transcend organizational boundaries are referred to as inter-organizational systems. Inter-organizational systems can share information, telecommunication links between two or more organizations. Based on the relationship among the participants they can be classified as Competitive (EFT) or cooperative (EDI). The capabilities of Inter organizational systems are to:

* increase organizational efficiency
* increase switching costs
* strengthen relationships
* create channel ""by-pass" opportunities
* reduce transaction costs
* alter business relationships and basis of competition
* create new markets/niches.

One of early attempts to do business electronically is the Electronic Data Interchange protocol (EDI) which runs over private networks. EDI is developed by United Nations Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) working group about twenty five years ago. This was before the invention of the Internet.

Electronic Data interchange (EDI) refers to the structure transmission of data between organizations by electronic means. It is more than mere E-mail; for instance, organization might replace bills of lading and even checks with appropriate EDI messages. It also refers specifically to a family of standards, including the X12 series. However, EDI also exhition its pre-Internet roots, and the standards tend to focus on ASCII-formatted single messages rather than the whole sequence of conditions and exchanges that make up an inter-organization business process.

Because of the different approach in the development and implementation of EDI there is no consensus on a definition of EDI. Some of the prevailing definitions are stated below:

* EDI is the transmission of unambiguous information of business or strategic significance between computers of independent organizations

* EDI is the interchange of standard formatted data between computer application systems of trading partners with minimum manual intervention

* EDI is the electronic transfer from computer to computer of commercial and administrative data using an agreed standard to structure an EDI message

* EDI is the electronic transfer from one computer to another of computer process able data using an agreed standard to structure the data.

Process of EDI Message Exchange

Electronic Data Interchange (EDI) is simply a set of data definitions that permit business forms that would have been exchanged using paper in the past, to be exchanged electronically. This simple set of definitions has spurred a number of organizations to put in place an operational environment in which the exchange of electronic business forms substitutes for the exchange of paper forms. This has resulted, in some cases, in the establishment of an EDI environment, which arguably represents the most advanced state of electronic commerce today, causing some to view EDI and electronic commerce as one and the same. We view EDI only as a subset of electronic commerce, albeit a very important one. As such, EDI provides an excellent example of a working electronic commerce environment and is a good starting point for examining electronic commerce.

Components of EDI

An EDI system consists of all of the components necessary to exchange EDI transactions with trading partners who are EDI capable. The major components are EDI translation software, user or system interfaces, hardware, maps, EDI guides, a communication network and EDI experienced personnel. A company that wants to be EDI capable will have to either buy the components or outsource all of the EDI system components to a third party.

UNEDIFACT Standards

UN/EDIFACT (the United Nations rules for Electronic Data Interchange for Administration, Commerce and Transport) comprise a set of internationally agreed standards, directories, and guidelines for the electronic interchange of structured data, between independent computerized information systems.

Message Structure

EDIFACT has a hierarchical structure where the top level is referred to as an *interchange*, and lower levels contain multiple *messages* which consist of *segments*, which in turn consist of *composites*. The final iteration is an *element* which is derived from the United Nations Trade Data Element Directory (UNTDED); these are normalised throughout the EDIFACT standard.

A group or segment can be mandatory (M) or conditional (C) and can be specified to repeat. For example :

```
- C99 indicates between 0 and 99 repetitions of a segment or group
- M99 signifies between 1 and 99 repetitions of a segment or group
```

A group, like a message, is a sequence of segments or groups. The first segment or group beneath a group must be mandatory, and the group should be made conditional if the logic of the situation demands it.

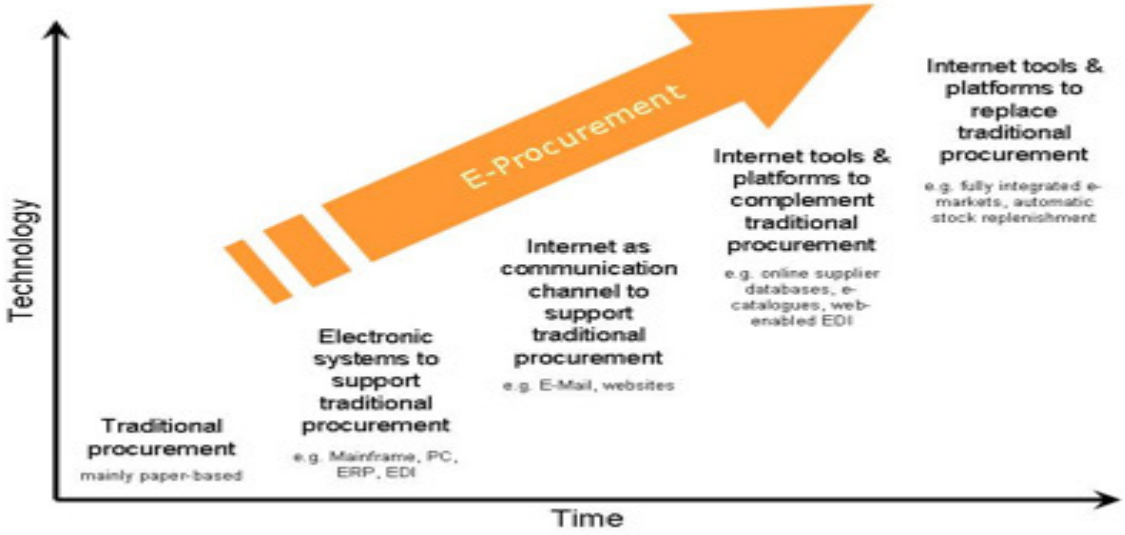
```
        Service String Advice     UNA  Optional
 +----- Interchange Header        UNB  Mandatory
 | +---   Functional Group Header   UNG  Conditional
 | | +-     Message Header            UNH  Mandatory
 | | |        User Data Segments              As required
 | | +-     Message Trailer           UNT  Mandatory
 | +---   Functional Group Trailer  UNE  Conditional
 +----- Interchange Trailer       UNZ  Mandatory
```

EDI in India

Electronic Data Interchange (EDI) is simply a set of data definitions that permit business forms that would have been exchanged using paper in the past, to be exchanged electronically. This simple set of definitions has spurred a number of organizations to put in place an operational environment in which the exchange of electronic business forms substitutes for the exchange of paper forms. This has resulted, in some cases, in the establishment of an EDI environment, which arguably represents the most advanced state of electronic commerce today, causing some to view EDI and electronic commerce as one and the same. We view EDI only as a subset of electronic commerce, albeit a very important one.

EDI enabled procurement process

In its broadest sense, e-procurement involves electronic data transfers to support operational, tactical and strategic procurement. E-procurement has therefore been around for much longer than the term itself which first came into usage after the establishment of the internet in the 1990s. From the 1960s until the mid 1990s, e-procurement primarily took the form of electronic data interchange (EDI). Nowadays, e-procurement is often supported by internet technologies



and is becoming more prevalent. The historic context is demonstrated in the chart below:

Procurement officers and managers can make a contribution to decisions about investments in, and configuration and use of e-procurement tools by:

- having a general understanding of the various e-procurement applications
- identifying the procurement processes that are effectively supported by e-procurement

- understanding the sources of benefit of e-procurement
- identifying the risks associated with the adoption of e-procurement
- Contributing to the development of e-procurement tools through identifying scope for e-commerce supported process improvement.

EDI IMPLEMENTATION

The term EDI implementation is generally used in one of two ways. In a broader sense an EDI implementation signifies the process of deploying EDI software or services - typically in-house - with the goal of making the business EDI enabled. EDI implementation however also has a more specific definition related to the process of becoming EDI enabled with a specific partner.

Choosing Who Will Perform Your EDI Implementation

As a small or mid-sized business the first concern you are likely to encounter is choosing the right partner to help with your EDI implementation. The reason for this is that as a new business to EDI you are not likely to have a lot of EDI implementation expertise.

UN "Model Interchange Agreement" for international commercial use of EDI

The Model Interchange Agreement for the International Commercial Use of Electronic Data Interchange has been developed as a part of a project under the Action Programme on the Legal and Commercial Aspects of Electronic Data Interchange adopted by the United Nations Economic Commission for Europe Working Party on Facilitation of International Trade Procedures ("WP.4") in 1991. That Programme is set forth in United Nations Document No. TRADE/WP.4/R.697. The Programme emphasizes legal issues which can be readily defined and aims at developing guidance on those legal issues, and recommending appropriate solutions in the form of legal instruments or tools or changes in commercial practices.

The Model Interchange Agreement is a product of one of the main projects of the Programme. Objectives of that project are to ensure the reasonable harmonization of interchange agreements used in international trade and to develop an internationally accepted version for optional use.

An interchange agreement is made between trading partners setting out the rules they will adopt for using Electronic Data Interchange (EDI). Electronic Data Interchange is the electronic transfer from computer to computer of commercial or administrative transactions using an agreed standard to structure the transaction or message data. The agreement also details the individual roles and legal responsibilities of the trading partners for transmitting, receiving and storing electronic messages. Because of differences which are involved with the use of EDI in commerce, addressing these topics as they relate to a new electronic trading environment reduces the legal uncertainty that electronic trading might raise and enhances the confidence with which the technology is employed.

Why are Interchange Agreements developed and used?

EDI is developing rapidly as an effective business tool for international trade. The use of EDI for business and administration purposes is already well established within several major industries in Europe, North America, Australia/New Zealand and Asia.

What model interchange agreements exist?

A number of model interchange agreements have been developed for both national and regional use. These include interchange agreements published by national EDI organizations, professional bar associations and public administrations. However, at the time of this publication, no global model exists other than the Model Interchange Agreement.

WEB BASED E-COMMERCE

Need for web based business

Businesses that generate their revenue directly from their website fall into the web based business category. Such businesses are typically online retailers offering various products for sale from an online catalogue.

The needs of web based businesses go far beyond merely providing product information and collecting customer feedback. An entire system for places orders and handling financial transactions must be in place. Fortunately, there are numerous e-commerce solutions available. Most web hosts typically offer e-commerce plans for businesses wishing to venture into the world of online retailing.

The focus of the website should be on making sure the customer is able to find the products they are looking for and place orders with little hassle. While it is still important to provide information on the company and handle customer feedback, it must not be at the expense of ease of use.

Choosing the right format of website

Producing (X)HTML files can be done with a wide variety of software, and in general web browser are very forgiving of errors in HTML code. In most cases it would still be unwise to use office applications for creating (X)HTML documents. Although some office software applications are now quite good at generating clean (uncluttered) code, there are always some mistakes. Never under any circumstances use Microsoft Word's "Save as HTML function". The code that will be produced is full of non-standard, Microsoft-specific extensions, and the files it produces are very large.

The **advantage of (X)HTML** is that it can always be read with your eye, whether you have a suitable browser or not. For example, the title of an HTML page (if you look at the code of the file) is surrounded by `<title>` and `</title>` so it looks like this: `<title>A page about`

me</title>. This makes (X)HTML ideal for storing text files with structure. You are however limited by your ability to create (X)HTML files and (X)HTML's limitations on formatting

Characteristics of PR site

The island of Puerto Rico is a very popular tourist destination because of its location, rich history and warm atmostphere. The island is located in the Caribbean, between the Caribbean Se and the North Atlantic Ocean, east of the Dominican Republic, about 1,000 miles (1,600 km) southeast of Miami, Florida.

Puerto Rico is almost rectangular in shape, approximately 100 miles long by 35 miles wide and is the smallest and the most eastern island of the Greater Antilles (Cuba, Hispaniola, Jamaica and Puerto Rico). It consists of the main island of Puerto Rico and several smalller islands and keys, including Vieques, Culebra, Culebrita, Palomino (known by some by the Spanish Virgin Islands), Mona, and Monito.

Its coasts measures approximately 580 km, and if the adjacent islands Vieques and Culebra are included the coast measures approximately 700 km. With an area of 3,425 square miles (9,104 sq km), Puerto Rico is the third largest island in the United States and the 82nd largest island in the world.

Marketing site

You' ll locate Nike Totally free several common myths inside online advertising and marketing, which usually entice lots of people with it assuming theyre correct. 1st …

Gain traffic, boost visibility, and drive revenue with online marketing services from Network Solutions. PPC, SEO, email marketing, and more to connect with your …

Sales site

We're hooking you up with a list of the best sites for finding awesome fashion deals. If you truly have a retail fetish, then you need to take advantage of these sites. Sign up below to get access to a consolidated list of daily sales from EVERY STORE!

web-store

On the Webstore you can buy International Standards for all electrical, electronic and related technologies. Our Standards are available in a variety of formats including electronic versions (PDF or CD/DVD), printed versions and by database subscriptions. We accept all major credit cards and other forms of payment in our secure webstore.

Vertical Portals

On the Web, a vertical portal (sometimes called a vortal) is a Web site that provides a gateway or portal to information related to a particular industry such as health care, insurance, automobiles, or food manufacturing. (A vertical industry is one that is focused on a relatively narrow range of goods and services, whereas a horizontal industry is one that aims to produce a wide range of goods and services. Because most industry tends to specialize, most industry tends to be vertical.) A term that might also be used is *interest community Web site* since any vertical industry brings together people sharing an interest in buying, selling, or exchanging information about that particular industry. Vertical portals are also seen as likely business-to-business communities - for example, small business people with home offices might be attracted to a comprehensive vertical portal that provided ideas and product information related to setting up and maintaining the home office.

Horizontal portals

It is a web page at a web site on the World Wide Web or a local HTML home page including JavaScript and perhaps running in a modified web browser. A personal portal typically provides personalized capabilities to its visitors or its local user, providing a pathway to other content. It may be designed to use distributed applications, different numbers and types of middleware and hardware to provide services from a number of different sources and may run on a non-standard local web server. In addition, business portals can be designed for sharing and collaboration in workplaces. A further business-driven requirement of portals is that the content be presented on multiple platforms such as personal computers, personal digital assistants (PDAs), and cell phones/mobile phones. Information, news, and updates are examples of content that would be delivered through such a portal. Personal portals can be related to any specific topic such as providing friend information on a social network or providing links to outside content that may help others beyond your reach of services. Portals are not limited to simply providing links. Outside of business intranet user, very often simpler portals become replaced with richer mashup designs. Within enterprises, early portals were often replaced by much more powerful "dashboard" designs. Some also have relied on newer protocols such as some version of RSS aggregation and may or may not involve some degree of web harvesting.

Steps in setting up business on internet

Setting Up an Online Business

Setting up your business on the Internet can be a lucrative way to attract customers, expand your market and increase sales. For the most part, the steps to starting an online business are the same as starting any business. However, doing business online comes with additional legal and financial considerations, particularly in the areas of privacy, security, copyright and taxation.

Rules and regulations for conducting e-commerce apply mainly to online retailers and other businesses that perform consumer transactions by collecting customer data.

Selection & registration of domain name

What's in a name? A guide to selecting domain names

finding a domain name that isn't taken these days is pretty hard to do. If you have ever tried to get a user ID with a service such as Yahoo, you will understand how frustrating it can be when you think up the perfect name that nobody else could have possibly thought of, only to find that yes, you can have that name if you are happy to have 7865 tacked on to the end of it.

Website development: –

Design and development of web applications that involve presentation, functionality and data storage. Compliance with HTML standards. Principles of modern website design. Integration of client-side scripting for website dynamics and interactivity. Development of server-side scripts for business logic and data.

Instead of being a course with technology or tool specifics, this course is designed to give students necessary training with the development of web applications in three areas: presentation, functionality, and data storage. Presentation pertains to HTML standards, web page styles, and modern website design principles. HTML standards and web page styles are presentation norms dictated by the W3C, while modern website design principles would change and evolve as the standards and technologies (e.g. HTML 5, browser plug-ins, etc,) advance. JavaScript is pretty much the de facto client-side element for website dynamics and interactivity. Since the development tools of server-side scripting tend to be diversified, instructor can choose any tool as long as some of the common modules such as environmental settings, web server configuration, state management, parameter sharing, and database connectivity and operations are taught.

In this course students will learn how to develop web applications that involve presentation, functionality and data storage. These web applications will (1) comply with current W3C standards in coding and style, (2) apply modern website design principles, (3) result in applications that are accessible to disabled users, (4) use client-side scripts for site dynamics sand interactivity, and (5) employ server-side scripts for functionalities involving business logic and basic database operations

client side tools

Client-side refers to operations that are performed by the client in a client–server relationship in a computer network.Typically, a client is a computer application, such as a web browser, that runs on a user's local computer or workstation and connects to a server as necessary. Operations may be performed client-side because they require access to information or functionality that is available on the client but not on the server, because the user needs to observe them or provide input, or because the server lacks the processing power to perform the operations in a timely manner for all of the clients it serves. Additionally, if operations can be performed by the client, without sending data over the network, they may take less time, use less bandwidth, and incur a lesser security risk.

server side tools

Server-side refers to operations that are performed by the server in a client–server relationship in computer networking.Typically, a server is a computer program, such as a web server, that runs on a remote server, reachable from a user's local computer or workstation. Operations may be performed server-side because they require access to information or functionality that is not available on the client, or require typical behavior that is unreliable when it is done client-side.

Web authoring tools

A category of software that enables the user to develop a Web site in a desktop publishing format. The software will generate the required HTML coding for the layout of the Web pages based on what the user designs. Typically, the user can toggle back and forth between the graphical design and the HTML code and make changes to the Web page in either the design of the accompanying code. *(v.)* To design and create a Web site, from writing the site's underlying code to writing the text to managing the site's upkeep.

Catalogue

Catalog or **catalogue** may refer to:

In **science and technology**:

- Astronomical catalog, a catalog of astronomical objects
  - Star catalog, a catalog of stars
- Pharmacopoeia, a book containing directions for the preparation of compound medicines
- Database catalog, in computer science

Web store tools

FreeWebstore can be integrated with a large number of payment options, so your customers will always be able to find a method to suit them. We also provide easy access to a host of other useful tools, including Shopping Directories, Accountancy Tools and more.

Below you will find an up-to-date list of every checkout option available to FreeWebstore users, as well as a range of tools and marketing services that can help you make the most out of your FreeWebstore. Mouse-over the links below for further information.

Website hosting considerations

Although the monthly rates are extremely reasonable, we're starting to see pressure on our database server for more than 4 GB of memory. SQL Server has an insatiable appetite for memory, and given the ridiculously low cost of memory these days, it seems crazy not to build a server box with 8 GB at the very minimum — and possibly 16 GB or 24 GB depending on how much the server will accept.

Unfortunately, upgrading memory on our rental servers isn't really an option, as the monthly cost increase for the memory upgrade would nearly *double* our monthly hosting fees. This says more about how insanely great our existing deal is than anything else, but it's still a bummer. The rental model is something we want to move away from in the longer term, anyway: the more we grow, the more servers we add, the more our monthly costs increase.

Own server

Setting up your own server using the default server software that Mojang distributes free of charge. The software may be installed on most operating systems, including Windows, Mac and Linux.Regardless of your operating system, you must begin by downloading the server software from the minecraft download page, and save it to the directory in-which you will run the server.

Rented server

With EV6 you can rent a server from us for the duration of your hosting plan. By renting a server you can cut out the up-front cost of purchasing hardware and you still have the option to buy the system at any time.

Website maintenance online promotion tools & techniques

Banner Advertising

A Web Banner is an object that displays a stationary or moving graphic and has an in-built hyperlink to the advertiser's website. This form of advertising is most common on the Web and has the ability to initiate instance response from a prospective customer.

Rich Media

Earlier, businesses used audio, video and flash to augment their text-based messages for promotion. Today, Clients with our Creative / Technology Associates can together combine these elements to form a stimulating web-based presentation which raises the bar of consumer-company interactivity to a whole new level.

Search Engine Optimization (SEO)

Search Engine Optimization is a set of methodologies used to improve the rankings of a website over a large network of Search Engine's (Google, Yahoo, MSN, Alta vista etc.) and generate quality Traffic towards a website to increase reach / sales.

Link Exchange

A Link Exchange Program is a practice of exchanging links with other websites. Our Team has realized the fact that Search Engines have started favoring sites that have had more links and our consulting team would work with our Clients towards a comprehensive link exchange program.

Email Marketing

This is one of the best and easiest ways to market your business or business promotion and reach out to people. Email Marketing, a form of direct Marketing using electronic mail to be in touch or market products, services, updates etc to either existing or new addressees.

Pay Per Click (PPC)

This type of an Online Advertising Campaign for online promotion essentially involves advertisers to pay for the visitors to their website on a Cost Per Click (CPC) basis. The client only pays when a user clicks on its ''Sponsored Link" and visits that particular website.

Affiliate Programs

An Affiliate Programme involves publishers who target advertisers in exchange for commissions on leads and/or sales generated

Viral Marketing

The Technology Associates in our company in partnership with clients will put to use tactics on the Web that will allow existing customers to tell other prospective customers about a product / service which they have enjoyed using.

Getting links to your site

It's the online equivalent of word-of-mouth advertising. And just like its offline cousin, it's the most effective way to get new business.

This advertising mode is known as "link building," and it involves getting other Web sites to link to your site. It's like one of your neighbors recommending a good plumber or handyman; it carries more weight than if a person just stumbled across your Web site.

In today's world, there is much more to good search engine listings than simply optimizing your site for keywords.

In order to keep searchers happy, search engines are always developing ways to make their results more relevant. In the last couple of years, links have become increasingly more important to the engines because they see links as an endorsement of your site by other Web sites. Think about it for a minute: Would you link to a site you didn't like?

This concept is referred to as "link popularity." Based on the links pointing to your site, the search engines either increase or decrease how relevant your site is for particular keyword searches.

Obviously, you want to increase your site's relevancy, right? Good. That's the goal here: to make sure you start building the right kind of links for your site in order to improve your search-engine results.

Banner advertisements

A **web banner** or **banner ad** is a form of advertising on the World Wide Web delivered by an ad server. This form of online advertising entails embedding an advertisement into a web page. It is intended to attract traffic to a website by linking to the website of the advertiser. The advertisement known as a "click through." In many cases, banners are delivered by a central ad server.

Measuring advertisement effectiveness

Online advertising is available in a number of formats, from banner ads, to rich media ads to social media pages and more. As you get increased traffic to your website, you may wonder which advertising campaigns are providing the best return on investment (ROI) and which are not proving valuable to your business' goals. Tracking web campaigns requires some investment in your website up front. It also requires diligent work in monitoring campaigns separately according to your goals. Read how to measure the effectiveness of web advertising.

Establish the goal of your advertising campaign(s). For many sites, this is an increase in sales; however, for websites that sell advertising or contacts, your goal could simply be an increase in traffic or database numbers. Once you decide your goal, you can choose the metrics by which to judge when it is met.

Web Traffic Analysis

Throughout your network you need to know what is happening, you need precise and real-time analysis to make the right decisions that affect the growth and security of your business. Whatever you need to track, Sawmill provides the right solution at the right price. Sawmill's easy scalability and universal support helps you make better use of your data, with one application.

Various measures

Please note that rugs which are smaller than 170 x 240 cm can deviate from those shown in the catalogue, as they may be subject to simplifications. The majority of Arte Espina rugs can be manufactured in special sizes, apart from those designated otherwise in the product information. The minimum width and length for special sizes is 100cm and the maximum size of 300 x 400 cm cannot be exceeded. Special sizes can only be ordered in increments of 10 cm (e.g. 100cm, 110cm, 120cm, etc.). You can obtain detailed information in our sales department or from your responsible sales representative. As the products are produced by hand, deviations in size of up to 5% are possible.

Structure of log file data at server side

One characteristic of an RDBMS is the independence of logical data structures such as **tables**, **views**, and **indexes** from physical storage structures. Because physical and logical structures are separate, you can manage physical storage of data without affecting access to logical structures. For example, renaming a database file does not rename the tables stored in it.

An **Oracle database** is a set of files that store Oracle data in persistent disk storage. This section discusses the database files generated when you issue a `CREATE DATABASE` statement:

- Data files and temp files

  A **data file** is a physical file on disk that was created by Oracle Database and contains data structures such as tables and indexes. A **temp file** is a data file that belongs to a temporary tablespace. The data is written to these files in an Oracle proprietary format that cannot be read by other programs.

- Control files

  A **control file** is a root file that tracks the physical components of the database.

- Online redo log files

  The **online redo log** is a set of files containing records of changes made to data.

Its analysis for promotion and tools for analysis

Time series analysis is the process of using statistical techniques to model and explain a time-dependent series of data points. Time series forecasting is the process of using a model to generate predictions (forecasts) for future events based on known past events. Time series data has a natural temporal ordering - this differs from typical data mining/machine learning applications where each data point is an independent example of the concept to be learned, and the ordering of data points within a data set does not matter.

Search Engine Optimization techniques

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a search engine's "natural" or un-paid ("organic") search results. In general, the earlier (or higher ranked on the search results page), and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users. SEO may target different kinds of search, including image search, local search, video search, academic search news search and industry-specific vertical search engines.

Payment Gateways for online payment

A payment gateway is an e-commerce application service provider service that authorizes payments for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar. It is the equivalent of a physical point of sale terminal located in most retail outlets. Payment gateways protect credit card details by encrypting sensitive information, such as credit card numbers, to ensure that information is passed securely between the customer and the merchant and also between merchant and the payment processor.

A payment gateway facilitates the transfer of information between a payment portal (such as a website, mobile phone or IVR service) and the Front End Processor or acquiring bank.

Security of transactions on web:

The most important part of deployment is planning. It is not possible to plan for security, however, until a full risk assessment has been performed. Security planning involves developing security policies and implementing controls to prevent computer risks from becoming reality.

The policies outlined in this paper are merely guidelines. Each organization is different and will need to plan and create policies based upon its individual security goals and needs.

In order to develop an effective information security policy, the information produced or processed during the risk analysis should be categorized according to its sensitivity to loss or disclosure. Most organizations use some set of information categories, such as Proprietary, For Internal Use Only, or Organization Sensitive. The categories used in the security policy should be consistent with any existing categories. Data should be broken into four sensitivity classifications with separate handling requirements: sensitive, confidential, private, and public. This standard data sensitivity classification system should be used throughout the organization. These classifications are defined as follows:

- *Sensitive.* This classification applies to information that needs protection from unauthorized modification or deletion to assure its integrity. It is information that requires a higher than normal assurance of accuracy and completeness. Examples of sensitive information include organizational financial transactions and regulatory actions.
- *Confidential.* This classification applies to the most sensitive business information that is intended strictly for use within the organization. Its unauthorized disclosure could seriously and adversely impact the organization, its stockholders, its business partners, and/or its customers. Health care-related information should be considered at least confidential.
- *Private.* This classification applies to personal information that is intended for use within the organization. Its unauthorized disclosure could seriously and adversely impact the organization and/or its employees.
- *Public.* This classification applies to all other information that does not clearly fit into any of the above three classifications. While its unauthorized disclosure is against policy, it is not expected to impact seriously or adversely affect the organization, its employees, and/or its customers.

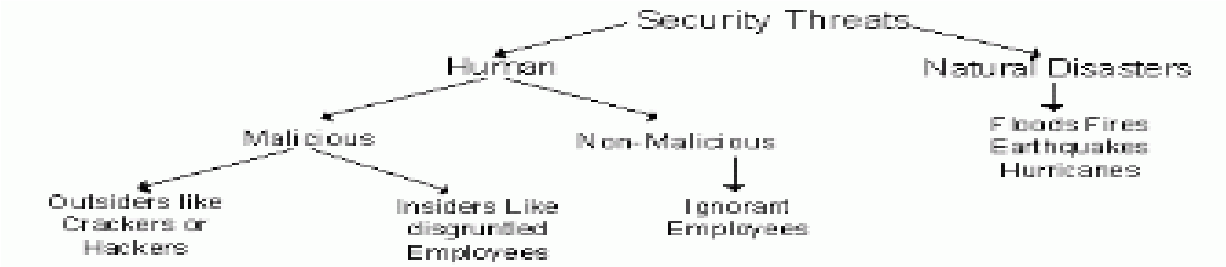
Selling through secure server

A secure WWW server uses the Secure Socket Layers (SSL) technology to establish an encrypted connection between the WWW server and the client. The SSL Protocol is designed to provide privacy between two communicating applications (a client and a server). Second, the protocol is designed to authenticate the server, and optionally the client.

All keys generated by our private Certificate Authority at worldindia Internet use the keysize of 1024 bits. This keysize approaches industrial standards required for encryption. The other aspect is the implementation of SSL which is used on all Netscape's Secure Web server.

Use of digital certificates and international standards

A threat is any action or incident with the potential to cause harm to an organization through the disclosure, modification, or destruction of information, or by the denial of critical services. Security threats can be divided into human threats and natural disaster threats, as the following picture illustrates.



Human threats can be further divided into malicious (intentional) threats and non-malicious (unintentional) threats. A malicious threat exploits vulnerabilities in security policies and controls to launch an attack. Malicious threats can range from opportunistic attacks to well-planned attacks.

Non-malicious human threats can occur through employee error or ignorance. These employees may accidentally cause data corruption, deletion, or modification while trying to capture data or change information. (Hardware or software failures, while not a human threat, are other non-malicious threats.)

In understanding these various threats, it is possible to determine which vulnerabilities may be exploited and which assets are targeted during an attack. Some methods of attack include:

- Social engineering
- Viruses, worms, and Trojan horses
- Denial of service attack tools
- Packet replaying
- Packet modification
- IP spoofing
- Password cracking

UNIT-II (INTRANET, EXTRANET and VPN)

Architecture of Intranet

Information is the way organizations coordinate their activities and achieve their goals. The technologies for managing and distributing information have changed over time, but the functions required for human organization have remained fairly constant. The effort to find ways

to authenticate electronic requests and submissions is merely attempting to meet the same needs that seals, signature comparison, and notary publics met in the paper world. The need to secure information on networks is the same need that led to sealing wax and armed guards in previous eras using paper media.

Intranets

An Intranet is a communication infrastructure. It is based on the communication standards of the Internet and the content standards of the World-Wide Web. Therefore, the tools used to create an Intranet are identical to those used for Internet and Web applications. The distinguishing feature of an Intranet is that access to information published on the Intranet is restricted to clients in the Intranet group. Historically this has been accomplished through the use of LANs protected by Firewalls.

Intranet Software

Claromentis provides a secure web platform for your business that includes our framework, intranet software, business process management software and custom applications. Our information management, process management, and intranet / extranet software is used by global corporations, governments, small to medium enterprises, and not for profit organizations on five continents and helps to ensure that intranet and extranet users can find and create exactly the information required.

Applications of Intranets

- **Workforce productivity**: Intranets can help users to locate and view information faster and use applications relevant to their roles and responsibilities. With the help of a web browser interface, users can access data held in any database the organization wants to make available, anytime and — subject to security provisions — from anywhere within the company workstations, increasing employees' ability to perform their jobs faster, more accurately, and with confidence that they have the right information. It also helps to improve the services provided to the users.
- **Time**: Intranets allow organizations to distribute information to employees on an *as-needed* basis; Employees may link to relevant information at their convenience, rather than being distracted indiscriminately by email.
- **Communication**: Intranets can serve as powerful tools for communication within an organization, vertically strategic initiatives that have a global reach throughout the organization. The type of information that can easily be conveyed is the purpose of the initiative and what the initiative is aiming to achieve, who is driving the initiative, results achieved to date, and who to speak to for more information. By providing this information on the intranet, staff have the opportunity to keep up-to-date with the strategic focus of the organization. Some examples of communication would be chat, email, and or blogs. A great real world example of where an intranet helped a company communicate is when Nestle had a number of food processing plants

in Scandinavia. Their central support system had to deal with a number of queries every day.[6] When Nestle decided to invest in an intranet, they quickly realized the savings. McGovern says the savings from the reduction in query calls was substantially greater than the investment in the intranet.

- **Web publishing** allows cumbersome corporate knowledge to be maintained and easily accessed throughout the company using hypermedia and Web technologies. Examples include: employee manuals, benefits documents, company policies, business standards, news feeds, and even training, can be accessed using common Internet standards (Acrobat files, Flash files, CGI applications). Because each business unit can update the online copy of a document, the most recent version is usually available to employees using the intranet.
- **Business operations and management**: Intranets are also being used as a platform for developing and deploying applications to support business operations and decisions across the internetworked enterprise.
- **Cost-effective**: Users can view information and data via web-browser rather than maintaining physical documents such as procedure manuals, internal phone list and requisition forms. This can potentially save the business money on printing, duplicating documents, and the environment as well as document maintenance overhead. For example, the HRM company PeopleSoft "derived significant cost savings by shifting HR processes to the intranet".[6] McGovern goes on to say the manual cost of enrolling in benefits was found to be USD109.48 per enrollment. "Shifting this process to the intranet reduced the cost per enrollment to $21.79; a saving of 80 percent". Another company that saved money on expense reports was Cisco. "In 1996, Cisco processed 54,000 reports and the amount of dollars processed was USD19 million"
- **Enhance collaboration**: Information is easily accessible by all authorised users, which enables teamwork.
- **Cross-platform capability**: Standards-compliant web browsers are available for Windows, Mac, and UNIX.
- **Built for one audience**: Many companies dictate computer specifications which, in turn, may allow Intranet developers to write applications that only have to work on one browser (no cross-browser compatibility issues). Being able to specifically address your "viewer" is a great advantage. Since Intranets are user-specific (requiring database/network authentication prior to access), you know exactly who you are interfacing with and can personalize your Intranet based on role (job title, department) or individual ("Congratulations Jane, on your 3rd year with our company!").
- **Promote common corporate culture**: Every user has the ability to view the same information within the Intranet.
- **Immediate updates**: When dealing with the public in any capacity, laws, specifications, and parameters can change. Intranets make it possible to provide your audience with "live" changes so they are kept up-to-date, which can limit a company's liability.
- **Supports a distributed computing architecture**: The intranet can also be linked to a company's management information system, for example a time keeping system.

Intranet Application Case Studies

It used to be so difficult to find and read quality intranet case studies. Although, long detailed case studies with screenshots are hard to come by, many organizations are opening the hood to allow the outside world a peak at their intranet.

Here are a few good intranet case studies from the past few weeks:

Navy Marine Corps Intranet Case Study

The Navy Marine Corps Intranet (NMCI) is the second-largest network in the world; only the Internet is larger. The NMCI is not just massive, its mission is vital: more than 700,000 of the military and civilian employees of the Department of the Navy and Marine Corps receive IT services via the intranet.

Its integrated operation enables secure off-site storage and rapid service and data restoration, even in the event of a disaster. Some that the NMCI has weathered so far include 9/11, Hurricane Katrina and the Indian Ocean tsunami.

EDS is deploying VMware Infrastructure throughout the NMCIs vast network to improve application availability while cutting costs. Virtualization is still a work in progress, but the results thus far have been impressive.

Considerations in Intranet Deployment

- Deals with a series of challenges presented by intranets for both users and suppliers. Driving factors in the purchase of the technology; Barriers to intranet introduction; Two stages in intranet evolution; Percentage of businesses using intranet in Europe; How intranet customers are using...

- Reveals that Intranet usage is growing in popularity among middle size companies. Percentage of surveyed middle-market companies that are using in-house Internet technology; Primary use of company Intranet; Benefits of Intranet.
- Answers a reader's question regarding the corporate intranet. Creation of a page that is structured as a form for the company's Support Services unit; Insertion of some mail headers before the beginning of the message body; How to send the results of a form submission in an HTML mail message.

The architecture of Extranets

An extranet is a computer network which allows controlled access from the outside, for specific business or educational purposes. In a business-to-business context, an extranet can be viewed as an extension of an organization's intranet that is extended to users outside the organization, usually partners, vendors, and suppliers, in isolation from all other Internet users. In contrast, business-to-consumer (B2C) models involve known servers of one or more companies, communicating with previously unknown consumer users. An extranet is similar to a DMZ in that it provides access to needed services for channel partners, without granting access to an organization's entire network.

An extranet could be understood as an intranet mapped onto the public Internet or some other transmission system not accessible to the general public, but managed by more than one company's administrator(s). For example, military networks of different security levels may map onto a common military radio transmission system that never connects to the Internet. Any private network mapped onto a public one is a virtual private network (VPN), often using special security protocols.

Extranet Products & services

- Exchange large volumes of data using Electronic Data Interchange (EDI)
- Share product catalogs exclusively with trade partners
- Collaborate with other companies on joint development efforts
- Jointly develop and use training programs with other companies
- Provide or access services provided by one company to a group of other companies, such as an online banking application managed by one company on behalf of affiliated banks

Applications of Extranets

- Exchange large volumes of data using Electronic Data Interchange (EDI)

- Share product catalogs exclusively with trade partners
- Collaborate with other companies on joint development efforts
- Jointly develop and use training programs with other companies
- Provide or access services provided by one company to a group of other companies, such as an online banking application managed by one company on behalf of affiliated banks

Business Models of Extranet Applications

The rise of the personal computer and of electronic networking vastly expanded the scope of possibilities open to innovative, productivity-minded businesses. Computer networks offer everything from new forms of communication to whole new markets. While you're familiar with the most famous computer network, the Internet, other kinds of computer networks exist, too, including smaller networks called intranets and extranets.

Internet Uses

The Internet serves businesses by creating opportunities for networking, information retrieval, communications, marketing and sales. Companies can use the Internet to sell their products to distant customers. They can use the Internet to gather information and interact with customers, clients, government and other members of the industry, building awareness of their market.

Companies can also use the Internet for internal communications and other electronic activities, which many small businesses do in lieu of developing their own networks.

Intranet Uses

Intranets serve an organization's digital communications needs. They also provide a secure space for storing, accessing and developing electronic materials. Using intranets to replace older business solutions can produce big gains in efficiency by speeding up workflows and reducing errors. Some specific intranet applications include network folders where multiple employees can access the same files, offline websites that can be tested for functionality before going live, digital reference databases for looking up facts and figures, internal email systems and instant messaging software.

Extranet Uses

Extranets connect multiple intranets together, so their major use in the business world is to facilitate cooperation between different companies on joint projects, initiatives and information sharing. They also allow companies to connect with customers in a more controlled setting than the Internet. Extranets also allow multiple companies to access network services provided by another company, such as a data-processing application developed and maintained by one company that other companies utilize on their own intranets.

Virtual private Network (VPN)

A virtual private network (VPN) extends a private network across a public network, such as the Internet. It enables a computer to send and receive data across shared or public networks as if it was directly connected to the private network, while benefitting from the functionality, security and management policies of the private network. This is done by establishing a virtual point-to-point connection through the use of dedicated connections, encryption, or a combination of the two.

Architecture of VPN:-

Using VPNs, an organization can help secure private network traffic over an unsecured network, such as the Internet. VPN helps provide a secure mechanism for encrypting and encapsulating private network traffic and moving it through an intermediate network. Data is encrypted for confidentiality, and packets that might be intercepted on the shared or public network are indecipherable without the correct encryption keys. Data is also encapsulated, or wrapped, with an IP header containing routing information.

VPNs help enable users working at home, on the road, or at a branch office to connect in a secure fashion to a remote corporate server using the Internet. From the users perspective, the VPN is a point-to-point connection between the user's computer and a corporate server. The

nature of the intermediate network, the Internet, is irrelevant to the user because it appears as if the data is being sent over a dedicated private link.

There are a number of ways to use VPN. The most common scenario is when a remote user accesses a private network across the Internet using a remote access VPN connection. In another scenario, a remote office connects to the corporate network using either a persistent or an on-demand site-to-site VPN connection (also known as a router-to-router VPN connection).

Each of these VPN scenarios can be deployed to provide connectivity over a public network, such as the Internet, or over a private intranet. VPN connections can also be deployed in an extranet scenario to communicate securely with business partners. An extranet functions as an intranet that can be securely shared with a designated business partner.

With both the remote access and site-to-site connections, VPNs enable an organization to replace long distance dial-up or leased lines with local dial-up or leased lines to an Internet service provider (ISP).

Service provider dependent configurations

_Whilst you can retrieve services from the container directly it is best to minimize this. For example, in the `NewsletterManager` you injected the `mailer` service in rather than asking for it from the container. You could have injected the container in and retrieved the `mailer` service from it but it would then be tied to this particular container making it difficult to reuse the class elsewhere.

You will need to get a service from the container at some point but this should be as few times as possible at the entry point to your application

Service provider independent configurations

A **provider-independent address space** is a block of IP addresses assigned by a regional Internet registry (RIR) directly to an end-user organization.[1] The user must contract with an Internet service provider to obtain routing of the address block within the Internet.

Provider-independent addresses offer end-users the opportunity to change service providers without renumbering of their networks and to use multiple access providers in a multi-homed configuration. However, provider-independent blocks may increase the burden on global routers, as the opportunity for efficient route aggregation through Classless Inter-Domain Routing (CIDR) may not exist.

VPN Security-

User authentication

Virtual Private Networks (VPNs) have changed the way people do business. Employees and business partners can now access sensitive business resources through the internet anytime, anywhere. At the same time, organizations need to be making VPN security and VPN authentication necessary.

VPNs ensure privacy by providing a private tunnel through the Internet for remote access to the network. For full *VPN security*, your VPN must be enhanced with a reliable user authentication mechanism, protecting endpoints of the VPN.

Data security

User name and password authentication is not enough – this method is weak and highly susceptible to hacking, cracking, key loggers, and other attacks. It only takes one compromised password for your organization to lose control over who gains network access. Strong user authentication with a VPN provides true secure remote access for today's mobile workforce.

Electronic Payment Systems:

E-cash: Purchasing & using of e-cash

1. There are already ATM systems available- with slight modification ATMs could "print money"
2. Merchants are already using scanning system and upgrade of electronic money software can't be too expensive investment
3. Mobile apps can be building for scanning paper slips for consumers and merchants.
4. Electronic cash is easier, low cost model, which can be linked to bigger systems and society can follow the money movement is needed.
5. If paper slip is used, it can't be reused- safety

Electronic Purses their loading with cash and use

Although electronic purses could be used as a replacement for cash, it appears likely that in the near future the main applications will be in special areas as in the preceding scenarios. For electronic purses to become economically viable for general use, requires wide acceptance by both consumers and retailers.

Loading a card.

To load an electronic purse, the user must be able to operate an ATM or card loading machine. Usually this requires the user to be able to read a visual display, but methods for alleviating this problem have been developed.

Using a card at a retail terminal.

To use the electronic purse, the user hands the card to the shop assistant who inserts the card in a terminal and keys in the amount of the transaction. This is displayed visually to the customer. Once again, the person must be able to read a display screen. The customer confirms that the amount is correct, and the money is transferred from the card to the terminal. In some systems, the customer needs to key in their PIN (personal identification number) before the transaction can be completed.

Balance readers.

Many electronic purse systems provide users with a balance reader. These readers are approximately the size of a chocolate bourbon biscuit and tend to have low contrast visual displays which are very difficult to read by people with impaired vision.

Electronic wallets.

Systems, such as Mondex, offer customers the possibility of using an electronic 'wallet' to verify balances and to transfer money from one card to another. For instance a taxi driver might have an electronic wallet so that he or she can accept electronic payments.

E-cheque payment system

- E-cheques are a mode of electronic payments. E-cheques work the same way as paper cheques and are a legally binding promise to pay.
- This technology was developed couple of years ago by a consortium of Silicon Valley IT researchers and merchant bankers and since then has been promoted by many of the financial bodies.
- E-cheques work the same way as paper cheques and are a legally binding promise to pay. The payment system uses digitally signed XML documents that provide mechanism to authenticate parties to a transaction. E-cheques are defined using FSML (financial services markup language) which allows for addition and deletion of document blocks, signing, co-signing, endorsing, etc. Signatures are accompanied by bank-issued certificates which tie the signer' s key to a bank account.

Online Third Party Verified Payment System through Credit & Debit cards & encryption mechanism

A credit card is a payment card issued to users as a system of payment. It allows the cardholder to pay for goods and services based on the holder's promise to pay for them. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user.

A credit card is different from a charge card: a charge card requires the balance to be paid in full each month. In contrast, credit cards allow the consumers a continuing balance of debt, subject to interest being charged. A credit card also differs from a cash card, which can be used like currency by the owner of the card. A credit card differs from a charge card also in that a credit card typically involves a third-party entity that pays the seller and is reimbursed by the buyer, whereas a charge card simply defers payment by the buyer until a later date.

The size of most credit cards is 3 ⅜ × 2 ⅛ in (85.60 × 53.98 mm), conforming to the ISO/IEC 7810 ID-1 standard. Credit cards have an embossed bank card number complying with the ISO/IEC 7812 numbering standard.

How credit cards work

Credit cards are issued by a credit card issuer, such as a bank or credit union, after an account has been approved by the credit provider, after which cardholders can use it to make purchases at merchants accepting that card. Merchants often advertise which cards they accept by displaying acceptance marks – generally derived from logos – or may communicate this orally, as in "We take (brands X, Y, and Z)" or "We don't take credit cards".

When a purchase is made, the credit card user agrees to pay the card issuer. The cardholder indicates consent to pay by signing a receipt with a record of the card details and indicating the amount to be paid or by entering a personal identification number (PIN). Also, many merchants now accept verbal authorizations via telephone and electronic authorization using the Internet, known as a card not present transaction (CNP).

Advertising, solicitation, application and approval

Credit card advertising regulations in the US include the Schumer box disclosure requirements. A large fraction of junk mail consists of credit card offers created from lists provided by the major credit reporting agencies. In the United States, the three major US credit bureaus (Equifax, Transition and Experian) allow consumers to opt out from related credit card solicitation offers via its Opt out Pre Screen program.

Benefits to customers

The main benefit to each customer is convenience. Compared to debit cards and checks, a credit card allows small short-term loans to be quickly made to a customer who need not calculate a balance remaining before every transaction, provided the total charges do not exceed the maximum credit line for the card.

- Acquiring bank: The financial institution accepting payment for the products or services on behalf of the merchant.
- Independent sales organization: Resellers (to merchants) of the services of the acquiring bank.
- Merchant account: This could refer to the acquiring bank or the independent sales organization, but in general is the organization that the merchant deals with.
- Credit Card association: An association of card-issuing banks such as Discover, Visa, MasterCard, American Express, etc. that set transaction terms for merchants, card-issuing banks, and acquiring banks.
- Transaction network: The system that implements the mechanics of the electronic transactions. May be operated by an independent company, and one company may operate multiple networks.
- Affinity partner: Some institutions lend their names to an issuer to attract customers that have a strong relationship with that institution, and get paid a fee or a percentage of the balance for each card issued using their name. Examples of typical affinity partners are sports teams, universities, charities, professional organizations, and major retailers.

ATM based cash disbursement system

The objectives of internal controls for cash disbursements are to ensure that cash is disbursed only upon proper authorization of management, for valid business purposes, and that all disbursements are properly recorded. Grantees will find this resource useful when maintaining internal control for cash disbursements.

While it is impossible to guarantee that these objectives will be met at all times for all transactions, the following practices provide reasonable assurance that they will usually be accomplished.

Segregation of Duties

Segregation of duties means that no financial transaction is handled by only one person from beginning to end. For cash disbursements, this might mean that different people authorize payments, sign checks, record payments in the books, and reconcile the bank statements.

Electronic bill payment system

E-bill Payment

While your bills will be provided exclusively in electronic form, there will still be several payment options available to you. Credit card payments are not accepted.

Security E-commerce Transactions

Security issues: confidentiality, integrity, authentication, non repudiation & access control their objectives & techniques

Inter bank clearing system

The **Clearing House Interbank Payments System** (CHIPS) is the main privately held clearing house for large-value transactions in the United States, settling well over US$1 trillion a day in around 250,000 interbank payments. Together with the Fedwire Funds Service (which is operated by the Federal Reserve Banks), CHIPS forms the primary U.S. network for large-value domestic and international USD payments (where it has a market share of around 96%). CHIPS transfers are governed by Article 4A of Uniform Commercial Code

SECURITY E-COMMERCE TRANSACTIONS

Security issues:-

Confidentiality

Confidentiality refers to preventing the disclosure of information to unauthorized individuals or systems. For example, a credit card transaction on the Internet requires the credit card number to be transmitted from the buyer to the merchant and from the merchant to a transaction processing network. Confidentiality is necessary for maintaining the privacy of the people whose personal information a system holds.

Integrity

In information security, data integrity means maintaining and assuring the accuracy and consistency of data over its entire life-cycle. This means that data cannot be modified in an unauthorized or undetected manner. This is not the same thing as referential integrity in databases, although it can be viewed as a special case of Consistency as understood in the classic

Availability

For any information system to serve its purpose, the information must be available when it is needed. This means that the computing systems used to store and process the information, the security controls used to protect it, and the communication channels used to access it must be functioning correctly.

Authenticity

In computing, e-Business, and information security, it is necessary to ensure that the data, transactions, communications or documents (electronic or physical) are genuine.

Non-repudiation

In law, non-repudiation implies one's intention to fulfill their obligations to a contract. It also implies that one party of a transaction cannot deny having received a transaction nor can the other party deny having sent a transaction.

Information security

Information security analysts are information technology (IT) specialists who are accountable for safeguarding all data and communications that are stored and shared in network systems.

Access control their objectives

Companies have many types of resources they need to ensure that only the intended people can access and need to make sure that these intended users have only the level of access required to accomplish their tasks. These resources can be physical (a facility, sensitive room, or expensive equipment), informational (intellectual property, confidential data), or personnel (employees, contractors, and Bob). Access control is more than simply requiring usernames and passwords when users want to access resources. It can be much more.

Access control techniques

There are multiple methods, techniques, technologies, and models that can be implemented, there are different ways to administer controls, and there are a variety of attacks that are launched against many of these access control mechanisms.

Types of security attacks

A Network attack or security or security incident is defined as a threat, intrusion, denial of service or other attack on a network infrastructure that will analyze your network and gain information to eventually cause your network to crash or to become corrupted. In many cases, the attacker might not only be interested in exploiting software applications, but also try to obtain unauthorized access to network devices.

There are at least seven types of network attacks.

1. Spoofing.
2. Sniffing.
3. Mapping.
4. Hijacking.
5. Trojans.
6. DoS and DDoS.
7. Social engineering.

Cryptography

Used directly, this type of signature scheme is vulnerable to a key-only existential forgery attack. To create a forgery, the attacker picks a random signature σ and uses the verification procedure to determine the message *m* corresponding to that signature.[13] In practice, however, this type of signature is not used directly, but rather, the message to be signed is first hashed to produce a short digest that is then signed. This forgery attack, then, only produces the hash function output that corresponds to σ, but not a message that leads to that value, which does not lead to an attack. In the random oracle model, this hash-then-sign form of signature is existentially unforgivable, even against a chosen-message attack.

Symmetric Encryption

Symmetric encryption is the oldest and best-known technique. A secret key, which can be a number, a word, or just a string of random letters, is applied to the text of a message to change the content in a particular way. This might be as simple as shifting each letter by a number of places in the alphabet. As long as both sender and recipient know the secret key, they can encrypt and decrypt all messages that use this key.

Asymmetric Encryption

The problem with secret keys is exchanging them over the Internet or a large network while preventing them from falling into the wrong hands. Anyone who knows the secret key can decrypt the message. One answer is asymmetric encryption, in which there are two related keys--a key pair. A public key is made freely available to anyone who might want to send you a message.

Public-Private Key Cryptography

The Public and Private Key pair comprise of two uniquely related cryptographic keys (basically long random numbers). Below is an example of a Public Key:

The Public Key is what its name suggests - Public. It is made available to everyone via a publicly accessible repository or directory. On the other hand, the Private Key must remain confidential to its respective owner.

Digital Signatures

A digital signature is a mathematical scheme for demonstrating the authenticity of a digital message or document. A valid digital signature gives a recipient reason to believe that the message was created by a known sender, such that the sender cannot deny having sent the message (authentication and non-repudiation) and that the message was not altered in transit (integrity). Digital signatures are commonly used for software distribution, financial transactions, and in other cases where it is important to detect forgery or tampering.

Digital Signatures & their use

As organizations move away from paper documents with ink signatures or authenticity stamps, digital signatures can provide added assurances of the evidence to provenance, identity, and status of an electronic document as well as acknowledging informed consent and approval by a signatory. The United States Government Printing Office (GPO) publishes electronic versions of the budget, public and private laws, and congressional bills with digital signatures. Universities including Penn State, University of Chicago, and Stanford are publishing electronic student transcripts with digital signatures.

Below are some common reasons for applying a digital signature to communications:

Authentication

Although messages may often include information about the entity sending a message, that information may not be accurate. Digital signatures can be used to authenticate the source of messages. When ownership of a digital signature secret key is bound to a specific user, a valid signature shows that the message was sent by that user. The importance of high confidence in sender authenticity is especially obvious in a financial context. For example, suppose a bank's branch office sends instructions to the central office requesting a change in the balance of an account. If the central office is not convinced that such a message is truly sent from an authorized source, acting on such a request could be a grave mistake.

Integrity

In many scenarios, the sender and receiver of a message may have a need for confidence that the message has not been altered during transmission. Although encryption hides the contents of a message, it may be possible to *change* an encrypted message without understanding it. (Some encryption algorithms, known as nonmalleable ones, prevent this, but others do not.) However, if a message is digitally signed, any change in the message after signature will invalidate the signature. Furthermore, there is no efficient way to modify a message and its signature to produce a new message with a valid signature, because this is still considered to be computationally infeasible by most cryptographic hash functions (see collision resistance).

Non-repudiation

Non-repudiation, or more specifically *non-repudiation of origin*, is an important aspect of digital signatures. By this property, an entity that has signed some information cannot at a later time deny having signed it. Similarly, access to the public key only does not enable a fraudulent party to fake a valid signature.

Note that these authentication, non-repudiation etc. properties rely on the secret key *not having been revoked* prior to its usage. Public revocation of a key-pair is a required ability, else leaked secret keys would continue to implicate the claimed owner of the key-pair. Checking revocation status requires an "online" check, e.g. checking a "Certificate Revocation List" or via the "Online Certificate Status Protocol". Very roughly this is analogous to a vendor who receives credit-cards first checking online with the credit-card issuer to find if a given card has been reported lost or stolen. Of course, with stolen key pairs, the theft is often discovered only after the secret key's use, e.g., to sign a bogus certificate for espionage purposes.

Public Key Infrastructure

A **public-key infrastructure** (**PKI**) is a set of hardware, software, people, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates.[1]

In cryptography, a PKI is an arrangement that binds public keys with respective user identities by means of a certificate authority (CA). The user identity must be unique within each CA domain. The third-party validation authority (VA) can provide this information on behalf of CA. The binding is established through the registration and issuance process, which, depending on the level of assurance the binding has, may be carried out by software at a CA, or under human supervision. The PKI role that assures this binding is called the registration authority (RA). The RA ensures that the public key is *bound* to the individual to which it is assigned in a way that ensures non-repudiation

Digital Certificate

An attachment to an electronic message used for security purposes. The most common use of a digital certificate is to verify that a user sending a message is who he or she claims to be, and to provide the receiver with the means to encode a reply.

An individual wishing to send an encrypted message applies for a digital certificate from a *Certificate Authority (CA)*. The CA issues an encrypted digital certificate containing the applicant's public key and a variety of other identification information. The CA makes its own public key readily available through print publicity or perhaps on the Internet.

The recipient of an encrypted message uses the CA's public key to decode the digital certificate attached to the message, verifies it as issued by the CA and then obtains the sender's public key and identification information held within the certificate. With this information, the recipient can send an encrypted reply.

Certification Authority

In cryptography, **certificate authority**, or **certification authority** (**CA**), is an entity that issues digital certificates. The digital certificate certifies the ownership of a public key by the named subject of the certificate. This allows others (relying parties) to rely upon signatures or assertions made by the private key that corresponds to the public key that is certified. In this model of trust relationships, a CA is a trusted third party that is trusted by both the subject (owner) of the certificate and the party relying upon the certificate. CAs are characteristic of many public key infrastructure (PKI) schemes.

Registration Authority

A **registration authority** or maintenance agency is a body given the responsibility of maintaining lists of codes under international standards and issuing new codes to those wishing to register them. The equivalent organization for Internet standards is the Internet Assigned Numbers Authority

Key Repository

A fully authenticated SSL connection requires a key repository at each end of the connection. The key repository contains:

- A number of CA certificates from various Certification Authorities that allow the queue manager or client to verify certificates it receives from its partner at the remote end of the connection. Individual certificates might be in a certificate chain.
- One or more personal certificates received from a Certification Authority. You associate a separate personal certificate with *each* queue manager or WebSphere® MQ client. Personal certificates are essential on an SSL client if mutual authentication

is required. If mutual authentication is not required, personal certificates are not needed on the SSL client.

SSL

There are many people who want or need to have the connection between the browser and the Web server encrypted, but hasn't been able to set it up. This guide is intended to help people.

Limitations

Sometimes hosting providers block the user from setting it up because the user needs to upgrade (pay more money for) the hosting account. Possiblity is that the hosting provider doesn't want users to have any hands-on control regardless of which hosting package you have with them. If you have a package that allows full root access or something similar, you're unlikely to have any problems, however, it's not always necessary to have full access as root to be able to set it up. In this article are alternatives to the hands-on approach you would use when logged in as root, but the best I can offer are general pointers. This is because most hosting providers offer some sort of control panel for administrative tasks, but this access can vary widely from one hosting provider to another.

SET:-

SET, Secure Electronic Transaction, a standard protocol for securing credit card transactions over insecure networks

Legal Issues in cryptography

Issue 1: Export Law

It is probable (not certain, but probable) that PGP falls under the ITAR restrictions, which control the export of munitions and cryptographic technology from the US and Canada.

Issue 2: Crypto Legality

In some countries, the use of cryptography is restricted by law. For example, in the UK it is illegal to transmit encrypted data by radio communication. This is generally the case in other countries, where Amateur Radio frequencies are concerned.

Issue 3: Patent Stupidity

The RSA public key cryptosystem was developed at MIT by Rivest, Shamir and Adleman. Shortly before the details were due to be published, some gentlemen from a US government department reportedly "asked" them to cancel publication. However, copies of the article had

already reached the outside world; A.K. Dewdney of Scientific American had a photocopy of the document explaining the algorithm. People began hastily photocopying and distributing the document.

UNIT-III (Business Strategy in an Electronic Age)

Impact of Internet on competition-

There is little doubt about the Internet's effect on competition. In market after market, online prices are falling and companies are experimenting with business models that have lower, if not negative, gross margins. In addition to affecting the absolute intensity of competition, the Internet is also having a fundamental effect on the structure of competition.Microeconomics 101 falls far short of giving you the tools you need to succeed in a Web-based world. There are many, many new rules, and those players using yesterday's playbook are in for a rather rude awakening.

The least obvious, but most interesting, way the Internet is changing competition is through the blurring of the boundaries that have historically existed between markets. Imagine if you will a large body of land covered by independent lakes. Think of these lakes as markets, and the species that live in each lake as competitors. Over time, these individual ecosystems have evolved separately, and certain species have emerged as leaders in each market (lake). Now imagine what would happen if a canal were installed between each and every lake, thereby enabling each species to swim freely among them. This is the effect the Internet, as an electronic version of the canal, is having on business. Your competition is no longer limited to your lake, and you may find yourself face to face with a species you have never seen before.

Porter's five forces model

In the emerging global economy, e-commerce and e-business have increasingly become a necessary component of business strategy and a strong catalyst for economic development.

Porter, the strategy guru, used concepts developed in Industrial Organization (IO) economics to derive five forces which determine the competitive intensity and therefore attractiveness of a market. This model describes the attributes of an attractive industry and thus suggests that opportunities will be greater, and threats less, in these kinds of industries. Attractiveness in this context refers to the overall industry profitability. An "unattractive" industry is one where the combination of forces acts to drive down overall profitability. A very unattractive industry would be one approaching "pure competition".

Porter's industrial organization competitive analysis framework (five-forces model) is challenged in resource-based critiques. Resource based views were argued to be more suitable than the 5 forces model as a tool for analysis in the wake of web enablement of businesses. Research has established that the rate of unique visitors, the e-business-specific measure, showed significant correlations with market value, net income growth, and employee growth. This implies that cyberspace-specific indicators, such as page views, stickiness, click-through rate, and conversion rate, may not be unreliable as performance measures. In the study, these were added as indicators of industry specific profitability indicators besides those in the Porter's framework. Porter's model is also challenged in view of the static nature of the industry which it analyzes. Web enablement increases the dynamic nature of industry structure.

Business strategies in digital economy

Advancing Australia as a Digital Economy: Update to the National Digital Economy Strategy (Strategy update) builds on the National Digital Economy Strategy released in 2011.

The Strategy update outlines the progress the Government has made since 2011 against the eight digital economy goals – and lays out the next steps to realise the benefits of the NBN and position Australia as a leading digital economy by 2020.

The document puts forward 24 key initiatives across the eight digital economy goals and seven key enablers underpinning Australia's digital capabilities.

The 2011 Strategy was intended to be updated regularly to reflect the rapidly changing environment that is our digital future.

Impact of IT Enabled Systems on value chain-

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THE STARTING POINT

To appreciate the significance that Porter attached to the value chain, it is important to recognize that in his first book he had identified two separate and fundamental sources of competitive advantage: a lower relative cost advantage or some form of differentiation. Although, subsequently, others have argued that many companies, especially Japanese ones, have been able to combine these two supposedly separate sources into one, Porter was looking for ways of pinpointing how either source could be developed.

THE BASICCONCEPT

The focus of Porter's argument is that the achievement of either lower cost or differentiation will depend on all the discrete activities that a company undertakes. By "disaggregating" these into "strategically relevant" groups, managers should be able to understand the behavior of costs as well as identify existing or potential sources of differentiation.

WHATIS A VALUE CHAIN?

Porter defines 'value' as "the amount buyers are willing to pay for what a firm provides". The value chain was therefore designed to display total value and consisted of the firm's *value activities* .

Eight steps for determining the basis for differentiation

1. *Determine who the real buyer is* - the one or more specific individuals, within the buying entity, who set the purchase criteria (the buying entity may be a firm, an institution or a household)
2. *Identify the buyer's value chain* - the value the firm provides to the buyer is determined by the way, directly or indirectly, it impacts upon the buyer's value chain, either by lowering costs or improving performance
3. *Determine and rank buyer purchase criteria* - analysis of the buyer's value chain provides the foundation for identifying such criteria which should then be ranked according to the value the buyer attaches to each
4. *Assess the existing and potential sources of differentiation* - by determining which of its value activities impact each of the purchase criteria, a firm can identify its current or potential sources of uniqueness
5. *Identify the cost of these sources of differentiation* - the cost of differentiation is a function of the cost drivers for those activities that provide the firm's sources of uniqueness
6. *Configure the value chain to create the greatest value relative to cost* - the intention is to create the widest gap between buyer value and the cost of differentiation
7. *Test for sustainability* - this requires identifying both stable sources of buyer value and erecting barriers to imitation
8. *Reduce costs in activities that do not affect the chosen forms of differentiation*

Porter's value chain model

How does your organization create value? How do you change business inputs into business outputs in such a way that they have a greater value than the original cost of creating those outputs?

This isn't just a dry question: it's a matter of fundamental importance to companies, because it addresses the economic logic of why the organization exists in the first place.

Manufacturing companies create value by acquiring raw materials and using them to produce something useful. Retailers bring together a range of products and present them in a way that's convenient to customers, sometimes supported by services such as fitting rooms or personal shopper advice. And insurance companies offer policies to customers that are underwritten by larger re-insurance policies. Here, they're packaging these larger policies in a customer-friendly way, and distributing them to a mass audience.

The value that's created and captured by a company is the profit margin:

Value Created and Captured – Cost of Creating that Value = Margin

The more value an organization creates, the more profitable it is likely to be. And when you provide more value to your customers, you build competitive advantage.

Understanding how your company creates value, and looking for ways to add more value, are critical elements in developing a competitive strategy. Michael Porter discussed this in his influential 1985 book "Competitive Advantage," in which he first introduced the concept of the value chain.

A value chain is a set of activities that an organization carries out to create value for its customers. Porter proposed a general-purpose value chain that companies can use to examine all of their activities, and see how they're connected. The way in which value chain activities are performed determines costs and affects profits, so this tool can help you understand the sources of value for your organization.

Supply chain

The concept of Supply Chain Management is based on two core ideas. The first is that practically every product that reaches an end user represents the cumulative effort of multiple organizations. These organizations are referred to collectively as the supply chain.

Supply chain management, then, is the active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage. It represents a conscious effort by the supply chain firms to develop and run supply chains in the most effective & efficient ways possible. Supply chain activities cover everything from product development, sourcing,

production, and logistics, as well as the information systems needed to coordinate these activities.

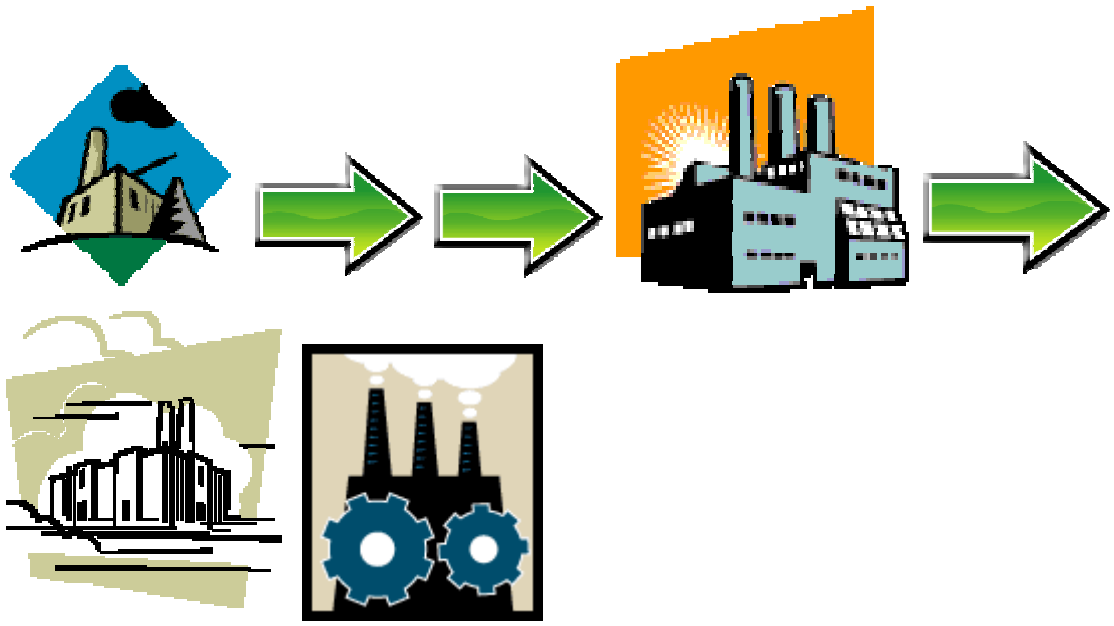
Supply chain management

Supply chain management (**SCM**) is the management of an interconnected or interlinked between network, channel and node businesses involved in the provision of product and service packages required by the end customers in a supply chain.[2] Supply chain management spans the movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption. It is also defined as the "design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally.

Definition

Supply Chain definition: the movement of materials as they flow from their source to the end customer. Supply Chain includes purchasing, manufacturing, warehousing, transportation, customer service; demand planning, supply planning and Supply Chain management. It is made up of the people, activities, information and resources involved in moving a product from its supplier to customer.
Although this Supply Chain definition sounds very simple, effective management of a Supply Chain can be a real challenge.

Flows in a supply chain



Raw materials Manufacturer Distribution Center Customer

Evolution of supply chain –

The fact that supply chain management (SCM) includes logistics functions may be the source of confusion about the terms. Making the terms even harder to define, the scope of SCM differs from one corporation to the next, according to anecdotal evidence.

During a recent professional organization meeting, for example, a senior logistician at a Fortune 500 corporation related that at his company, the bounds of SCM extend upstream from production to key vendors and involve only raw materials and sub-component flows. The supply chain organization in his firm falls under the auspices of the chief operations officer (COO), who had risen through production, and initiatives involving finished goods distribution are largely marginalized.

The domain of logistics management, therefore, consists of the following key elements within the firm:

- Transportation network design and management.
- Warehousing techniques, including location, design, and management.
- Materials handling management.
- System-wide inventory management.
- Order management and fulfillment.
- Procurement.
- Customer service.

JIT

Just-in-time operations are always lean—but lean operations do not necessarily perform just-in-time.

Just-in-time (JIT) operating practices have been around a lot longer than the new kid on the block, lean operations. The JIT philosophy is usually credited to the manufacturing practices Henry Ford introduced at his Dearborn, Mich., River Rouge complex, where iron ore delivered on Monday morning rolled off the assembly line as part of a finished automobile three days later. Ford recognized that his plant would be overwhelmed with materials in various stages of production if he did not keep them tightly scheduled and rapidly moving to final assembly. He allowed no wasted time, which, in turn, meant no delays.

Quick response retailing

Perhaps one cause for confusion between JIT and lean manufacturing is that both practices reduce waste. In the case of JIT, the focus is on eliminating time delays. Properly conceived, reducing response time is calculated to be of greater value than other required resources.

In lean operations, the focus is on eliminating or driving down cost. Any and all eliminated costs make an operation leaner. Because even the cost of time may be considered, the meanings of JIT and lean are likely to be misunderstood.

Push , pull and built to order model of supply chains

Push strategy

Another meaning of the push strategy in marketing can be found in the communication between seller and buyer. Depending on the medium used, the communication can be either interactive or non-interactive. For example, if the seller makes his promotion by television or radio, it's not possible for the buyer to interact. On the other hand, if the communication is made by phone or internet, the buyer has possibilities to interact with the seller. In the first case information is just *"pushed*" toward the buyer, while in the second case it is possible for the buyer to *demand* the needed information according to their requirements.

- Applied to that portion of the supply chain where demand uncertainty is relatively small
- Production and distribution decisions are based on long term forecasts
- Based on past orders received from retailer's warehouse (may lead to Bullwhip effect)
- Inability to meet changing demand patterns
- Large and variable production batches
- Unacceptable service levels
- Excessive inventories due to the need for large safety stocks
- Less expenditure on advertising than pull strategy

Pull strategy

In a marketing "pull" system, the consumer requests the product and "pulls" it through the delivery channel. An example of this is the car manufacturing company Ford Australia. Ford Australia only produces cars when they have been ordered by the customers.

- Applied to that portion of the supply chain where demand uncertainty is high
- Production and distribution are demand driven
- No inventory, response to specific orders
- Point of sale (POS) data comes in handy when shared with supply chain partners
- Decrease in lead time
- Difficult to implement

Built Strategy

In one of my last posts, I started a series on the conventional supply chain strategies and why they are inadequate to help firms trying to design their supply chains. A few days later, I followed up with lean as a supply chain strategy. Today, I continue with the series focusing on ***agile*** *as a supply chain strategy*.
Agile refers to the ability to react and adapt to the changes in demand and supply situations in a

supply chain. To accommodate the inherent variations in demand and supply, supply chains need to react and adapt to such changes as they happen, to minimize the disruption and optimize the objectives, such as costs, fulfillment rates, inventory, and so on.

E-commerce enabled supply chain management using Internet, Intranet & Extranet

Using Internet

Internet Technology has impacted our day to day life beyond imagination. It has changed the way we make purchase decisions, the process by which we compare products and finally buy the product. All this has been enabled instantly by the click of a mouse, sitting in the comfortable environs of your home.

Lets take the case of e commerce on a B 2 C model. You have just logged into the DELL website, compared the products and configurations. You go on to construct and build your own configuration laptop, get the pricing and click to make online payment through your credit card and have completed a purchase online.

Was this imaginable a few decades ago? No. Internet and E commerce have helped markets get closer to the customer. Customer Decision making and sales process has been shortened. Financial payment and delivery mechanism has been instantaneous in this case involving third party gateways making the transaction possible with collaborative networking.

Using Intranet

Supply chain management (SCM), a management method to optimize internal costs and productivities, has evolved as an application of e-business technologies. SCM is a powerful strategic function capable of radically improving customer value propositions by the reengineering of intranet and internet-enabled collaborative channel partnerships. Latest developments in information technology have propelled the e-Supply Chain Management (e-SCM) concept to newer dimensions. In the past, neither markets nor products changed much over time, enterprises that gained initial superiority could leverage on, considerable resources and process knowledge, mature distribution channels, advertising and marketing clout, and the newest technologies, to maintain that lead. Today, it is evident that there is no such thing as sustainable competitive advantage and also that all advantages are temporary. The cause for the rapid acceleration in the erosion of competitive advantage in almost all the businesses can be traced back to the rapidly developing newer technologies. Still more deadly is the sudden growth of newer business models that have been quick in challenging the present leaders by leveraging on special competencies which permit them to invade the market and conquer the targeted customer segments better. This paper conducts an extensive literature review to identify the latest trends in e-SCM. It also attempts to study some of the issues associated with e-SCM along with their solutions and practices.

Using Extranet

In the IT – era, e – business is a viable means of expanding business capacity and markets. E – business has made dramatic changes. As more enterprises become Internet – enabled and comfortable with advanced technologies that support it, e – business will continue to grow drawing larger numbers of enterprises that will use the technology to handle a wider variety of business tasks. In this article, we emphasis key aspects viz extranets and supply chain management of e – business.

Business Process Management

Concepts of Business Process Management

Business process management is usually treated from two different perspectives: business administration and computer science. While business administration professionals tend to consider information technology as a subordinate aspect in business process management for experts to handle, by contrast computer science professionals often consider business goals and organizational regulations as terms that do not deserve much thought but require the appropriate level of abstraction. Matthias Weske argues that all communities involved need to have a common understanding of the different aspects of business process management. To this end, he details the complete business process lifecycle from the modeling phase to process enactment and improvement, taking into account all different stakeholders involved. After starting with a presentation of general foundations and abstraction models, he explains concepts like process orchestrations and choreographies, as well as process properties and data dependencies. Finally, he presents both traditional and advanced business process management architectures, covering, for example, workflow management systems, service-oriented architectures, and data-driven approaches. In addition, he shows how standards like WfMC, SOAP, WSDL, and BPEL fit into the picture.

Concepts of Business Process Reengineering

Business process re-engineering is a business management strategy, originally pioneered in the early 1990s, focusing on the analysis and design of workflows and processes within an organization. BPR aimed to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world-class competitors.[1] In the mid-1990s, as many as 60% of the Fortune 500 companies claimed to either have initiated reengineering efforts, or to have plans to do so.

BPR seeks to help companies radically restructure their organizations by focusing on the ground-up design of their business processes. According to Davenport (1990) a business process is a set of logically related tasks performed to achieve a defined business outcome. Re-engineering emphasized a holistic focus on business objectives and how processes related to them, encouraging full-scale recreation of processes rather than iterative optimization of sub processes.

Call centre operations:-

purpose & functions

Sun's 10,000,000 developer mark is annoying me. I was surprised they had the gumption to say it in the first place and, as it sinks in, the implications are staggering. The implications aren't new, mind you - Sun also admitted they'd dropped the ball on marketing Java. It's just become more surprising to me over time.

Why? It's an admission that Java has had a lot of trends enforced that simply haven't worked, and won't work. I give you JavaBeans, EJBs, and a popular Web framework as examples.

JavaBeans were meant to be the drag-and-drop that brought the VB developers into the fold, with simple descriptions of use and parameters, easy deployment, and even state management. Lo and behold, now they're largely relegated to being a simple guideline for how methods and constructors should be built.

mode of operations

EJBs were the answer to distributed computing, with a promise of massive scalability. Soon, huge swaths of their specification were being avoided because of performance bottlenecks and complexity. Sure, you can get some of their promise out of session beans, and message-driven beans are easily my favorite aspect of the EJB spec, but getting good performance out of stateful beans or entities can be a fine art in and of itself.

Struts...oh, Struts. Tools for helping people build Struts applications can be found in every nook and cranny nowadays, and nobody questions why people are marketing tools and not components. If I want to build a simple process with Struts, I now have what seems like dozens of options to help me build that process, but who's willing to market a component to handle the process itself?

This strikes at the heart of the issue for me. Where are the components? There are reporting toolkits and some widgets for Swing, but where are the processes? Who's propagating knowledge of the EJB components that handle the grunt work? Where are the Web services to allow the distribution of processes over no homogenous networks? Why are we still doing everything ourselves?

components

Until this can be answered, there's no way Sun has a chance to bring in all those developers. I know there are exceptions: Web services certainly do exist but, honestly, in my last five client installations, nobody mentioned them as an alternative even once, except as a nonviable one. I'm willing to admit that maybe I'm in a region that specializes in the "Not Invented Here" syndrome, but I don't think so - I've been at too many disparate clients for that.

Telephony

It is the field of technology involving the development, application, and deployment of telecommunication services for the purpose of electronic transmission of voice, fax, or data, between distant parties. The history of telephony is intimately linked to the invention and development of the telephone.

Web

IT is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia, and navigate between them via hyperlinks.

Application servers

An **application server** can be either a software framework that provides a generalized approach to creating an application-server implementation, without regard to what the application functions are, or the server portion of a specific implementation instance. In either case, the server's function is dedicated to the efficient execution of procedures (programs, routines, scripts) for supporting its applied applications.

Middleware

Middleware makes it easier for software developers to perform communication and input/output, so they can focus on the specific purpose of their application.

Desktop applications

It is all the computer software that causes a computer to perform useful tasks (compare with computer viruses) beyond the running of the computer itself. A specific instance of such software is called a **software application**, **application** or **app**.

Customer Relationship Management (CRM)

CRM is the abbreviation for *customer relationship management*. It entails all aspects of interaction that a company has with its customer, whether it is sales or service-related. CRM is often thought of as a business strategy that enables businesses to:

- Understand the customer
- Retain customers through better customer experience
- Attract new customer
- Win new clients and contracts
- Increase profitably
- Decrease customer management costs

Customer relationship management solutions provide you with the customer business data to help you provide services or products that your customers want, provide better customer service, cross-sell and up sell more effectively, close deals, retain current customers and understand who the customer is.

UNIT-IV (Technology & Legal Issues in E-Commerce)

Technological Issues:-

Lack of telecom infrastructure in semi-rural and rural areas could be one of the major hindrances in tapping the huge rural potential market, going forward. The service providers have to incur a huge initial fixed cost to enter rural service areas. Rural Areas Continue to Remain Under Penetrated

A rural teledensity of merely 15% point towards the fact that a majority of Indian population still do not have access to telecom services. The rural India seems to have remained untouched by the telecom revolution witnessed in the last few years. A huge 'digital divide', which is reflected by the enormous difference of 74% between the urban and rural teledensity, reiterates this fact.

Availability of telecom infrastructure

The Indian telecom industry has come a long way since its liberalization era. The industry has witnessed exponential growth especially in the wireless segment in the last few years. The plethora of telecom services evolved over the years, ranging from basic telephony to voice, video and data services, Wimax, WLAN and VPN, and bandwidth on demand to virtual private networks have catalyzed revolutionary changes in the business operations for the service sector,

i.e., IT, BPO and also the manufacturing sectors etc, besides providing millions of people access to new technology.

Even though the sector has reflected promising growth, the teledensity in India still remains at a very low level compared with international standards and thus providing tremendous opportunity for future growth. In the medium-term, the industry is expected to continue to record good subscriber growth as a result of low penetration levels, heightened competition; a sustained fall in minimum subscription cost and tariff that increase affordability for lower-income rural users, expansion of coverage area by mobile operators, and government support through schemes such as the rural infrastructure roll out funded by subsidies from the Universal Service Obligation (USO) Fund.

Excessive Competition

Another major concern that has come to the forefront in the recent past has been heightened competitive intensity in the industry that has correspondingly fuelled the price war between industry players. The Indian wireless market is one of the world's most competitive markets, with 12 operators across 23 wireless 'circles' and 6 to 8 competing operators in each circle. The auction of new 3G licenses and the introduction of mobile number portability (MNP) are likely to heat up competition in the industry, going forward.

Evidently, the competition in the industry is expected to intensify further with the entry of new players, both domestic as well as foreign players. With the competitive intensity of the industry already at such high levels new operators might find it difficult to gather significant share in Indian telecom market. While the new players may benefit from a faster network rollout through tower sharing, they will face challenges in terms of high subscriber acquisition costs and lower ARPU customers.

Price War between the Service Providers Putting Pressure on Margins

The ever-increasing competitive intensity in the sector, with licenses and spectrum in several circles allotted to newer operators, is also a concern and could lead to unrealistic pricing levels to grab subscribers. The pricing strategy of per second billing already has taken the price war between telecom operators to the next level.

Spectrum Allocation

3G Spectrum availability is one of the major concerns for the industry. Lack of adequate spectrum which is the most integral part of the mobile telephony sector could hamper its growth severely. However, the spectrum allotment has been the most controversial issues in the Indian telecom sector.

Regulatory Charges

The regulatory charges in the telecom sector have a complicated structure because multiple levies impede the smooth implementation of telecom projects in India. Given the continuously-

declining ARPUs, and the extremely-low tariffs, sustaining the current growth rates of the industry requires urgent attention towards rationalizing the convoluted tax structure in the sector.

Interoperability

Interoperability is the ability of diverse systems and organizations to work together (inter-operate). While the term was initially defined for information technology or systems engineering services to allow for information exchange,[1] a more broad definition takes into account social, political, and organizational factors that impact system to system performance

Bandwidth issues

High-speed networks are capable of carrying many types of services such as voice, data, images, and video. These services have different requirements in terms of bandwidth, cell loss, delay, etc. The goal is to maximize the quality of service offered during periods of stress, as viewed by both the network provider and the customer. Many problems are created by these different requirements. This paper illustrates four bandwidth problems in high-speed networks, then describes several solutions to them. The first problem is topology design and bandwidth allocation, and it is concerned with the ability to dynamically reconfigure a network in order to efficiently benefit from network resources. The second problem is concerned with flow control and congestion avoidance. Bandwidth management (BWM) protocols are used to prevent congestion, essentially by accepting or refusing a new-arrival cell. The third problem, which is the most critical one, is bandwidth allocation, which is concerned with successful integrat ion of link capacities through the different types of services. Given that a virtual path is a logical direct link, composed of a number of virtual circuits, between any two nodes, the last problem is concerned with how to assign bandwidth to each virtual path in the network, in order to optimize performance for all users. This paper may be a good guide to researchers concerned with high-speed networks in general.

Technical standards

A **technical standard** is an established norm or requirement in regard to technical systems. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices. In contrast, a custom, convention, company product, corporate standard, etc. that becomes generally accepted and dominant is often called a *de facto* standard.

A technical standard can also be a controlled artifact or similar formal means used for calibration. Reference Standards and certified reference materials have an assigned value by direct comparison with a reference base. A primary standard is usually under the jurisdiction of a national standards body. Secondary, tertiary, check standards and standard materials may be used for reference in a metrology system. A key requirement in this case is (metrological) traceability, an unbroken paper trail of calibrations back to the primary standard.

Spectrum management

Spectrum management is the process of regulating the use of radio frequencies to promote efficient use and gain a net social benefit.[1] The term *radio spectrum* typically refers to the full frequency range from 3 kHz to 300 GHz that may be used for wireless communication. Increasing demand for services such as mobile telephones and many others has required changes in the philosophy of spectrum management. Demand for **wireless broadband** has soared due to technological innovation, such as 3G and 4G mobile services, and the rapid expansion of wireless internet services. Since the 1930s, spectrum was assigned through administrative licensing. Limited by technology, signal interference was once considered as a major problem of spectrum use. Therefore, exclusive licensing was established to protect licensees' signals. This former practice of discrete bands licensed to groups of similar services is giving way, in many countries, to a "spectrum auction" model that is intended to speed technological innovation and improve the efficiency of spectrum use.

Expansion of Internet

Internetworking is the practice of connecting a computer network with other networks through the use of gateways that provide a common method of routing information packets between the networks. The resulting system of interconnected networks is called an *internetwork*, or simply an *internet*. Internetworking is a combination of the words *inter* ("between") and networking; not *internet-working* or *international-network*.

The most notable example of internetworking is the Internet, a network of networks based on many underlying hardware technologies, but unified by an internetworking protocol standard, the Internet Protocol Suite, often also referred to as TCP/IP.

The smallest amount of effort to create an internet (an internetwork, not *the* Internet), is to have two LANs of computers connected to each other via a router. Simply using either a switch or a hub to connect two local area networks together doesn't imply internetworking, it just expands the original LAN.

128 bit IP addressing issue

Class	Leading bits	Size of *network number* field	Size of *rest* bit field	Number of networks	Addresses per network	Start address	End address
A	0	8	24	128 (2^7)	16,777,216 (2^{24})	0.0.0.0	127.255.255.255

B	10	16	16	16,384 (2^{14})	65,536 (2^{16})	128.0.0.0	191.255.255.255
C	110	24	8	2,097,152 (2^{21})	256 (2^{8})	192.0.0.0	223.255.255.255

Classful network design served its purpose in the startup stage of the Internet, but it lacked scalability in the face of the rapid expansion of the network in the 1990s. The class system of the address space was replaced with Classless Inter-Domain Routing (CIDR) in 1993. CIDR is based on variable-length subnet masking (VLSM) to allow allocation and routing based on arbitrary-length prefixes.

Today, remnants of classful network concepts function only in a limited scope as the default configuration parameters of some network software and hardware components (e.g. net mask), and in the technical jargon used in network administrators' discussions.

Legal issues:

The emergence of the Internet as a mass-media phenomenon with a growing number of commercial uses has brought the subject of electronic commerce to the attention of a wide audience for the first time.1 While the current popularity of Internet electronic commerce may or may not be sustainable, electronic commerce is here to stay.2 The overall benefits accruing to businesses from the increased speed and efficiency of electronic technologies, as well as the ability to communicate virtually instantaneously with trading partners throughout the world, has made electronic commerce indispensable in today's marketplace. Indeed, the use of electronic technologies already has had three major effects on commercial relationships: (i) commercial parties have begun to restructure their business practices using such technologies to communicate internally as well as externally; (ii) new industries have emerged to provide needed services to companies engaging in electronic commerce; and (iii) new types of property with commercial value have become the subject of trade domestically and internationally.3 As the world of electronic commerce expands, there is an increasing demand for clarity in the rules which apply to the participants and their transactions. Uncertainty exists on such matters as whether agreements entered into electronically are enforceable, how the operative terms of
Online contracts will be determined by courts, what rights parties have to online information, and what electronic self-help remedies they may exercise. The increased costs of dealing with these new legal uncertainties may offset any reduction in costs achieved through the use of new technologies and, as a result, may slow needlessly the rate at which businesses are willing to implement new technologies. It is imperative that the law remain current with technological and commercial developments and establish a stable, uniform framework of rules that will provide the needed certainty and predictability for commerce. The need for such a framework has been emphasized in a White House paper calling for a "Uniform Commercial Code" for cyberspace: a "domestic and global uniform commercial legal framework that recognizes, facilitates, and enforces electronic commercial transactions worldwide."4 Legislatures throughout the country hear demands for legislation to resolve the thorny problems arising from business transactions on the Internet.5 Much of the demand for the development of a legal framework has come from

those who use electronic commerce and want assurances that electronic transactions will be valid and binding, as well as certainty about the rules and remedies that apply to their transactions.

Uniform commercial code for e-commerce

Demands have also come from providers of support services for electronic commerce who seek legislation to clarify their responsibilities and their potential liability to users of their services or to third parties. The public has also been heard, expressing concerns about issues ranging from privacy6 and pornography7 to protection against online purveyors of services.8 While much of the popular press has focused on issues such as privacy and freedom of speech, a number of important issues have been raised regarding the use of new technologies by businesses, and the commercial law framework needed to support business done via the Internet.9 Although often not apparent to the average business person or even the average lawyer, changes are currently underway, both domestically and internationally, to adapt existing commercial law doctrines to accommodate electronic transactions and the technologies that underlie them. The Uniform Commercial Code (Code) is undergoing substantial revision in order to respond to changes in business practice and the use of electronic communications technologies.10 These revisions will provide many of the basic rules to support and facilitate electronic commerce, and, to the extent possible, are being coordinated with international efforts in the field.11 While progress in the creation of uniform laws may not always be as visible to the business community and the business bar as are actions on Capitol Hill, efforts to expand uniform law efforts outside the Code to accommodate electronic trade in a manner harmonious with the Code are also underway. Members of the business law bar should become aware of these developments because the pressing issues raised by electronic commerce both on and off the Internet are being subjected to thoughtful debate by the drafters of these revisions. What follows is a necessarily brief overview of the manner in which the Code is being revised and related legislation is being prepared to respond to the demands of an electronic age. While many of the revisions discussed below are not complete, a final product is anticipated within the next year. Contained in these various legislative efforts is a blueprint for the future of electronic commerce.

Model law on electronic commerce' by United Nations Commission on International Trade law

The Information Technology Act 2000 (the IT Act) is an Act of the Indian Parliament. This act is being opposed by Save Your Voice campaign and other civil society organizations in India.

The United Nations General Assembly by resolution A/RES/51/162, dated the 30 January 1997 has adopted the Model Law on Electronic Commerce adopted by the United Nations Commission on International Trade Law. This is referred to as the UNCITRAL Model Law on E-Commerce. Following the UN Resolution India passed the Information Technology Act 2000 in May 2000, which came into force on October 17, 2000. The Information Technology Act 2000 has been substantially amended through the Information Technology (Amendment) Act 2008 which was passed by the two houses of the Indian Parliament on December 23, and 24,

2008. It got the Presidential assent on February 5, 2009 and came into force on October 27, 2009.

IT act 2000 by Govt of India

Information technology Act 2000 consisted of 94 sections segregated into 13 chapters. Four schedules form part of the Act. In the 2008 version of the Act, there are 124 sections. Schedule I and II have been replaced. Information Technology Act 2000 addressed the following issues:

1. Legal Recognition of Electronic Documents
2. Legal Recognition of Digital Signatures
3. Offenses and Contraventions
4. Justice Dispensation Systems for Cybercrimes

The Information Technology (Amendment) Act, 2008

The Government of India has brought major amendments to ITA-2000 in form of the Information Technology Amendment Act, 2008. ITAA 2008 (Information Technology Amendment Act 2008) as the new version of Information Technology Act 2000 is often referred has provided additional focus on Information Security. It has added several new sections on offences including Cyber Terrorism and Data Protection. A set of Rules relating to Sensitive Personal Information and Reasonable Security Practices was released in April 2011

Intellectual Property Protection

Protecting your intellectual assets is vital to staying competitive and investing confidently in developing new products and services. Mintz Levin's full-service Intellectual Property Practice can help you optimize your IP resources, whether you are an established company seeking an array of patent and trademark protections, or an emerging company seeking to secure strategic business rights.

We work with clients both domestically in the US and Europe, and internationally, and we provide comprehensive, practical advice to a wide range of emerging and established technology-based businesses. Our Intellectual Property attorneys and technology specialists work closely with our business lawyers and are committed to providing clients with dedicated service and the best advice.

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Role of Online Privacy Self-Regulation

Both the private sector and the Clinton Administration support a self-regulatory approach to online privacy protection. But, the U.S. government is urging industry to develop meaningful ways to provide consumers with better privacy disclosure, greater consumer choice, and access to personal information. Industry is being prodded to develop mechanisms that protect information security and data integrity, and to enforce company privacy policies. The private sector has responded with a variety of self-regulatory initiatives in an attempt to forestall potentially onerous legislation or regulations that could impede the growth of electronic commerce. For example, the Online Privacy Alliance, comprised of companies and trade associations, was formed to promote privacy self-regulation. The Better Business Bureau has developed the BBB *Online* Privacy Program which verifies, monitors, and reviews company privacy policies and practices, provides a consumer dispute resolution mechanism, awards web page seals to companies that comply with good privacy practices, and provides education programs. TRUSTe and the American Institute of Certified Public Accountants also offer privacy assurance programs and web page seals to companies that meet their privacy standards. Companies that collect information about consumers in their databases have adopted privacy audits and standards. The Direct Marketing Association is implementing a privacy compliance program that requires its member companies to provide consumers with the opportunity to opt-out of having their information used for marketing purposes. Many industry trade associations have also issued privacy protection guidelines and best practices to their members. A growing number of companies voluntarily disclose their privacy policies and practices in print and on their web pages. In addition, new technological solutions are being developed and applied to better protect consumer information online. Despite such efforts, skeptics believe that legislation or regulations are needed to guarantee protection of the public's privacy - both online and offline.

Consumer Influence on the Protection of Personal Privacy and Security

Consumers are increasingly aware that ubiquitous, more powerful computers and widespread access to the Internet make it easier for legitimate and shady businesses as well as government agencies to collect, access, and use personal information. Consequently, consumers have become more assertive in demanding that their personal information be protected and that they be given greater control over the collection and use of such information. Such activism has caused businesses and governments to change their procedures or modify their products. The following recent examples indicate the influence of the public and the media on privacy policies or practices of both governments and industry:

The above examples illustrate how consumer Internet users and privacy advocates are taking actions to oppose perceived privacy and security threats. In addition, individual Internet users can take steps to protect their personal data from identity thieves, hackers, and scam operators, and limit unwanted marketing solicitations and spams. Smart users are: only doing business with reputable companies that they know and trust; opting-out of receiving marketing solicitations; using secure web sites; disabling cookies; preventing Internet access to personal files; protecting their passwords; and encrypting their files. It is also becoming more common for Internet users to assume false identities or to purposely provide misleading information to web sites in order to protect their privacy and security.

The Internet will continue to shift market power toward consumers, who can decide how much they want to pay for what they want to buy, and let sellers compete for their business. Electronic commerce enables companies to customize their products and services to suit the individual consumer. To meet the specific preferences of individuals, companies will have to tailor their marketing based on consumers' personal information about their shopping habits, likes and dislikes, as well as demographic and other characteristics. Such an exchange of information raises potential privacy and security concerns.

To help assuage consumer concerns about online security, various electronic authentication methods have been developed to allow buyers, sellers, and other parties to verify each other's identities and to ensure that electronic messages, documents, or communications have not been altered or tampered with during transmission. Electronic authentication techniques are expected to provide a greater level of user confidence in transacting business over the Internet. These techniques should also reduce fraud, unauthorized access to personal information, and network security breaches. This technology is expected to help facilitate electronic commerce by enabling consumers and businesses to conduct many different types of electronic transactions. These might include the purchase and sale of goods and services, and the payment, receipt, and settlement of funds. All of these could be accomplished more quickly, easily, and securely electronically than via paper-based transactions.

Legislative and Regulatory Outlook for Privacy and Security

The 106th Congress is expected to seriously consider both online and offline privacy protection legislation and many states are likely to act too. Legislation introduced, but not passed, in the last Congress and in many states is likely to be reintroduced, along with new online privacy bills. For example, Congressman Bruce Vento (D-MN) has reintroduced legislation to regulate the use, by interactive computer services, of personally identifiable information provided by subscribers to such services. H.R. 313, the "Consumer Internet Privacy Protection Act of 1999," prohibits interactive computer services from disclosing or using subscriber information without the subscriber's prior informed written consent, and permits subscribers to access their personal information in the files of interactive computer services, at no cost.

Some legislative proposals may require companies to provide consumers with clearer and more conspicuous notices of their privacy policies and practices by posting privacy notices and displaying privacy seals on their web pages. Other proposals may attempt to restrict the types of information that can be shared for cross marketing between corporate affiliates, and prohibit the disclosure of customer information without prior consent. For example, Senator Paul Sarbanes (D-MD) has introduced S. 187, the "Financial Information Privacy Act of 1999." This bill would require the prior consent of the customer of a financial institution before confidential information is disclosed or shared with third parties that perform contractual services. This would include data processing, marketing, or other functions for banks, securities firms, and other financial institutions.

Protecting the confidentiality of personal health, medical, entitlement, and benefit records is of growing public policy concern. Recently, a computer security error permitted thousands of patients' records to become accessible to anyone who visited the University of Michigan's health

center web site. In 1998, both the CVS drugstore chain and Giant Food supermarkets provided personal prescription information to a company that used the information to market suggested treatments to patients. Consumers were incensed that their records were transferred without their knowledge and consent. In 1997, the Social Security Administration shut down its online system, which permitted people to check the status of their benefits, because security design flaws could have resulted in unauthorized access to recipients' personal information.

Legislation has been introduced in Congress and various states to protect the confidentiality of patient records and to impose criminal and civil penalties for unauthorized use of protected information. Legislation has also been introduced to restrict Internet service providers from disclosing and using Social Security account numbers or other personal identifiers. The interconnected nature of the multifaceted health care sector (with providers of insurance, private and government benefit programs, payment, processing and other systems) makes it difficult to protect the privacy and security of sensitive personal information. While the Internet and other online systems provide new ways to improve health and benefit providers' efficiency and service quality and to contain escalating costs, care must be taken to protect consumer privacy and security in ways that do not negate such benefits to the public.

Recent Congressional concerns over privacy and security are reflected by the movement of two bills in March of this year. The House of Representatives approved H.R. 514, the "Wireless Privacy Enhancement Act of 1999" by a vote of 403 to 3. The bill imposes penalties for intentional interception or disclosure of conversations on wireless devices like cellular telephones. In addition, the House Banking and Financial Services Committee approved legislation to restrict sharing of personal health and medical information between the insurance and banking businesses of a financial services holding company. The Committee also approved legislation that makes it a federal crime to obtain personal financial information under a false pretext. It also requires depository institutions to provide customers with clear and conspicuous disclosure of their privacy policies.

As mentioned above, in order to raise the level of privacy protection in the U.S., some legislation may be based on concepts found in the European Data Protection Directive. Legislation may be introduced to restrict: data mining and warehousing, target marketing, and consumer profiling; the collection and use of health, medical and other sensitive customer information; and access to and use of public record information. Some of these proposals, if enacted, could affect e-commerce transactions, the use of personal information stored on smart cards, as well as online electronic billing and payment systems that consolidate account information.

In 1998, federal legislation was enacted to authorize the use of electronic signatures for online filing of federal government forms. However, lack of industry consensus, state jurisdictional concerns, and opposition by privacy advocates doomed passage of electronic authentication legislation that would have applied to the private sector. Congress is likely to reconsider uniform, federal electronic authentication legislation. But, to ensure passage, industry must make a convincing case that such a law will enhance electronic commerce and protect consumers' security and privacy, without undermining current state efforts to establish a uniform model law.

The U.S. does not have a uniform federal law that applies to electronic authentication. Instead, more than 40 states have passed laws that recognize digital signatures as acceptable substitutes for physical ones. Unfortunately, these state laws vary and often conflict, creating legal uncertainty as to which laws apply to interstate transactions, and thereby impede future growth of electronic commerce. The National Conference of Commissioners on Uniform State Laws (NCCUSL) is developing a uniform model law on electronic transactions. Approval by a majority of the states, however, is expected to take at least five years.

International uniformity of non-restrictive guidelines governing electronic authentication is also essential for electronic commerce (which has no geographic boundaries) to function efficiently. The U.S., which supports the elimination or modification of paper-based barriers to electronic transactions, is promoting international adoption of relevant provisions of the United Nations Commission on International Trade Law (UNCITRAL) 1996 Model Law on Electronic Commerce. However, the U.S. opposes detailed, restrictive rules for electronic authentication being developed by some countries, on the grounds that these would disrupt the free flow of information and stifle innovation. There is a concern, shared by industry, that some countries or groups of countries would establish restrictive regulatory structures for electronic authentication. These could be used to challenge the validity of authentication methods and techniques that have not been licensed or approved by them. To avoid such problems, the U.N. and the European Parliament are working on uniform international guidelines that will provide the framework for consumers, businesses, and governments to participate in electronic commerce in a safe, efficient, and consistent manner.

Finally, legislation has been reintroduced in Congress to permit the export and use of robust encryption by U.S. companies, and to prohibit the use of encryption for criminal purposes. While the outlook for passage of legislation has improved, continued opposition by law enforcement authorities and the Clinton Administration may once again prevent enactment. Meanwhile, in an attempt to balance privacy interests and security concerns, the U.S. has liberalized its restrictions on U.S. companies to permit financial institutions and selected other firms to export and use robust 128-bit encryption products that ensure the authenticity, integrity, and privacy of electronic communications.

Copyrights

Copyright is a legal concept, enacted by most governments, giving the creator of an original work exclusive rights to it, usually for a limited time. Generally, it is "the right to copy", but also gives the copyright holder the right to be credited for the work, to determine who may adapt the work to other forms, who may perform the work, who may financially benefit from it, and other related rights. It is a form of intellectual property (like the patent, the trademark, and the trade secret) applicable to any expressible form of an idea or information that is substantive and discrete

Patents

It is a set of exclusive rights granted by a sovereign state to an inventor or their assignee for a limited period of time, in exchange for the public disclosure of the invention. An invention is a

solution to a specific technological problem, and may be a product or a process.[1]:17 Patents are a form of intellectual property.

Trademarks

A **trademark**, **trade mark**, or **trade-mark**[1] is a recognizable sign, design or expression which identifies products or services of a particular source from those of others.[2][3][4][5] The trademark owner can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher or on the product itself.

Domain names

A **domain name** is an identification string that defines a realm of administrative autonomy, authority, or control on the Internet. Domain names are formed by the rules and procedures of the Domain Name System (DNS). Any name registered in the DNS is a domain name.

Domain names are used in various networking contexts and application-specific naming and addressing purposes. In general, a domain name represents an Internet Protocol (IP) resource, such as a personal computer used to access the Internet, a server computer hosting a web site, or the web site itself or any other service communicated via the Internet.

Privacy

It is the ability of an individual or group to seclude themselves or information about themselves and thereby reveal themselves selectively. The boundaries and content of what is considered private differ among cultures and individuals, but share basic common themes. Privacy is sometimes related to anonymity, the wish to remain unnoticed or unidentified in the public realm. When something is private to a *person*, it usually means there is something within them that is considered inherently special or personally sensitive. The degree to which private information is exposed therefore depends on how the public will receive this information, which differs between places and over time. Privacy partially intersects security, including for instance the concepts of appropriate use, as well as protection of information. Privacy may also take the form of bodily integrity.

Security

Security is the degree of resistance to, or protection from, harm. It applies to any vulnerable and valuable asset, such as a person, dwelling, community, nation, or organization

Storage of electronic message & their evidence value

Electronic discovery refers to discovery in civil litigation which deals with the exchange of information in electronic format (often referred to as electronically stored information or ESI).

These data are subject to local rules and agreed-upon processes, and is often reviewed for privilege and relevance before being turned over to opposing counsel.

Data are identified as potentially relevant by attorneys and placed on legal hold. Evidence is then extracted and analyzed using digital forensic procedures, and is reviewed using a document review platform. Documents can be reviewed either as native files or after a conversion to PDF or TIFF form. A document review platform is useful for its ability to aggregate and search large quantities of ESI.

Electronic information is considered different from paper information because of its intangible form, volume, transience and persistence. Electronic information is usually accompanied by metadata that is not found in paper documents and that can play an important part as evidence (for example the date and time a document was written could be useful in a copyright case). The preservation of metadata from electronic documents creates special challenges to prevent spoliation.

Taxation laws

There is historical evidence of imposition of import duty during the ancient and medieval era, the development of organized taxation on imports and exports to its present form, originated in 1786, when the Britishers formed the first Board of Revenue in Calcutta. In 1808, a New Board of Trade was established. The provincial import duties were replaced by uniform Tariff Act through Customs Duties Act, 1859 which was made applicable all territories in the country. The general rate of duty was 10%, which was subsequently revised to 7.5% in 1864. Several revisions in the Customs policy and tariff took place during subsequent years, though such revisions were mainly related to the textile products. Sea Customs Act was passed by Government in 1878. The Indian Tariff Act was passed in 1894. Air Customs having been covered under the India Aircrafts Act of 1911, the Land Customs Act was passed in 1924. The Indian Customs Act, 1934, governed the Customs Tariff. After Independence, the Sea Customs Act and other allied enactments were Repealed by a consolidating and amending legislation entitled the Customs Act, 1962 (CA). Similarly the Act of 1934 was repealed by the Customs Tariff Act, 1975(CTA).

Customs laws

1. The Customs Act, 1962
The Customs Act. 1962 is the basic Act for levy and collection of customs duty in India. I contain various provisions relating to imports and exports of goods and merchandize as well as baggage of persons arriving in India. The main purpose of Customs Act, 1962 is the prevention of illegal imports and exports of goods. The Act extends to the whole of the India. It was extended to Sikkim w.e.f. 1st October 1979.
2. The Customs Tariff Act, 1975

The Customs Duty is levied on goods imported or exported from India at the rates specified under the Customs Tariff Act, 1975.The Act contains two schedules - Schedule 1 gives classification and rate of duties for imports, while schedule 2 gives classification and rates of duties for exports. In the present Act, the Tariff Schedule was replaced in 1986. The new Schedule is based on Harmonized System of Nomenclature (HSN). the Internationally accepted Harmonized Commodity Description and Coding System

Role of governments & regulatory bodies

The focus of this work is on agencies that possess regulatory competencies. Not all agencies are regulatory agencies: some have only executive tasks; others are simple consultative organizations for policy-makers. Not all agencies are formally independent: some are in subordinate relationships with public administration and ministries. Instead, independent Regulatory Agencies are defined as ¯governmental entities that possess and exercise some grant of specialized public authority, separate from that of other institutions, but (…) neither directly elected by the people, nor directly managed by elected officials. In addition, this work will study the most powerful and institutionalized agencies, that are those with a specific organizational model (chairperson or director – board or similar body – own secretariat), and that benefit from the broadest array of regulatory competencies, such as rule-making, monitoring and controlling and sanctioning. Regulatory Brazil has created 10 regulatory agencies in important sectors of the economy such as Electricity, Oil, Transportation, Telecommunications, as well as in social regulation (Health Insurance, Health Surveillance, etc). Before the new agencies were created, the regulation of the sectors resided in specific ministries, or offices within the ministries. The switch to autonomous agencies represented a dramatic shift in the *locus* of power since their design provided them with a high degree of independence from the Executive and Congress. Congress and the Executive gave agencies jurisdiction over decisions that were important to other political actors, including in particular the power to set tariffs and the power to grant the concessions through which the right to provide a public service is conferred to the private sector. The insulation resulted from the appointment process of the directors of agencies. Most agencies in Brazil have rules that provide the directors with stability, so that they can only be removed under very exceptional circumstances, requiring corruption or malfeasance proved in a court of law.

Chapter 1 – Key policy actors in Brazil

The President nominates directors and the Senate confirms nominations. The terms of directors are staggered and as a result policy is more stable. It is expected that agencies play an important role in the course of the political decision-making processes, which are related to the regulation of a specific sector. First, regulatory agencies should possess the technical expertise and have access to many exclusive pieces of information that can be considered useful for developing the ¯best solution. To a given problem. Secondly, they are powerful organizations that cumulate several competencies of execution and benefit from a certain acquaintance with the target sector. Therefore, their agreement can be considered necessary by the political decision makers in order to ensure the proper implementation of the new laws. Thirdly, they are formally independent in order to provide credibility to the political process; hence agencies can be included in order to legitimize a preformatted solution developed by the political actors in favor of a given reform.

The next chapters will focus on Brazilian regulatory agencies and its prerogatives to policy-making. The Brazilian Electricity Regulatory Agency– ANEEL will be used as an example. They will show that although the regulatory agencies have the characteristics necessary to be an effective actor in the policy-making process, their actions are mainly executive, in order to assure that these policies designed by the Ministries and Congress will be correctly implemented.

Jurisdiction issues

Jurisdiction is the practical authority granted to a formally constituted legal body or to a political leader to deal with and make pronouncements on legal matters and, by implication, to administer justice within a defined area of responsibility. The term is also used to denote the geographical area or subject-matter to which such authority applies.

Jurisdiction draws its substance from public international law, conflict of laws, constitutional law and the powers of the executive and legislative branches of government to allocate resources to best serve the needs of its native society.

The fact that international organizations, courts and tribunals have been created raises the difficult question of how to co-ordinate their activities with those of national courts. If the two sets of bodies do not have *concurrent* jurisdiction but, as in the case of the International Criminal Court (ICC), the relationship is expressly based on the principle of *complementarily*, i.e., the international court is subsidiary or complementary to national courts, the difficulty is avoided. But if the jurisdiction claimed is concurrent, or as in the case of International Criminal Tribunal for the former Yugoslavia (ICTY), the international tribunal is to prevail over national courts, the problems are more difficult to resolve politically.

The idea of universal jurisdiction is fundamental to the operation of global organizations such as the United Nations and the International Court of Justice (ICJ), which jointly assert the benefit of maintaining legal entities with jurisdiction over a wide range of matters of significance to states (the ICJ should not be confused with the ICC and this version of "universal jurisdiction" is not the same as that enacted in the War Crimes Law (Belgium) which is an assertion of extraterritorial jurisdiction that will fail to gain implementation in any other state under the standard provisions of public policy). Under Article 34 Statute of the ICJ only states may be parties in cases before the Court and, under Article 36, the jurisdiction comprises all cases which the parties refer to it and all matters specially provided for in the Charter of the United Nations or in treaties and conventions in force. But, to invoke the jurisdiction in any given case, all the parties have to accept the prospective judgment as binding. This reduces the risk of wasting the Court's time.

Despite the safeguards built into the constitutions of most of these organizations, courts and tribunals, the concept of universal jurisdiction is controversial among those states which prefer unilateral to multilateral solutions through the use of executive or military authority, sometimes described as realpolitik-based diplomacy.

Within other international contexts, there are intergovernmental organizations such as the World Trade Organization (WTO) that have socially and economically significant dispute resolution functions but, again, even though their jurisdiction may be invoked to hear the cases, the power to enforce their decisions is at the will of the states affected, save that the WTO is permitted to allow retaliatory action by successful states against those states found to be in breach of international trade law. At a regional level, groups of states can create political and legal bodies with sometimes complicated patchworks of overlapping provisions detailing the jurisdictional relationships between the member states and providing for some degree of harmonization between their national legislative and judicial functions, for example, the European Union and African Union both have the potential to become federated states although the political barriers to such unification in the face of entrenched nationalism will be very difficult to overcome. Each such group may form transnational institutions with declared legislative or judicial powers. For example, in Europe, the European Court of Justice has been given jurisdiction as the ultimate appellate court to the member states on issues of European law. This jurisdiction is entrenched and its authority could only be denied by a member state if that member State asserts its sovereignty and withdraws from the union.

Applications of E-Commerce & Case Studies:

Case studies & applications of e-commerce in Retailing

Concerns about identity theft, credit card fraud and loss of privacy have an impact on consumer behavior. To maintain the trust of your customers, you must exceed their expectations for security and privacy. With "ahead of the threat" protection from ISS, you can avoid highly publicized security incidents and the lingering negative effects they can have on your brand

Applications of e-commerce in Banking

Electronically-based payment systems have been in operation since the 1960s and have been expanding rapidly as well as growing in complexity. However, in most of the major industrialized countries, an inverse relationship exists between the volume and the number of transactions handled electronically. Typically, of business payments around 85-90% or more of monetary value will be processed electronically, while less than 5-10% of the total number of payment transactions will be handled in this way. This has been due to four related factors: (1) proprietary closed networks were developed by banks to handle large and increasingly internationally based payments systems; (2) large value payments are increasingly associated with foreign exchange and global securities transactions, thereby becoming divorced from underlying world trade; (3) large value payment systems were not designed nor are they cost-effective for small value payments; and (4), paper-based non-automated payment systems remain an established part of accepted business practice for varying institutional reasons, thereby remaining ingrained in the economic system.

The Internet is experiencing rapid growth which is being largely driven by new commercial users of the network. Other commercial on-line services provided by companies such as CompuServe, America On-line and Prodigy are also expanding rapidly. The Internet is estimated to already have in excess of 40 million users, and according to figures published by NSFnet, the network has seen more than a doubling of users over the 12 months to January 1995. The Internet and other global on-line networks are creating new commercial opportunities for networked commerce. However, to date development has been limited by the lack of a payment infrastructure. In the past 9 months, a number of initiatives have been made public for developing secure payment systems on the Internet. This paper examines these recent developments which could permit the creation of a new cost-effective global payment system for low value payments

Applications of e-commerce in Manufacturing

New approaches to the development of manufacturing strategies based on improved supply chain performance have made great progress. This research is undertaken to investigate the use of the internet and web technologies to enhance supply chain agility so the manufacturer is able to cope with make-to-order processing without facing a panic of late delivery.

E-manufacturing is a recent concept developed to achieve higher levels of supply chain integration and agility with the help of the internet. Its scope is greater than ebusiness and the supply chain. The use of the internet to optimise the customeroriented supply chain, the use of the website for more than e-commerce known as buying and selling, these developments are immature.

As a result of a review of the literature and eight case studies, this research develops close-up views on the following three aspects that lead to the successful implementation of e-manufacturing in Business to Business (B2B) and Business to Customers (B2C): (1) Requirement specification; (2) Modules development; (3) Implementation methodology. The implementation of e-manufacturing enables the manufacturer to tie up with its supply chain existing partners and potential partners as an entity toward the same objectives, and brings maximum benefits to each participant. The fulfilment of web technologies creates web surroundings which provide the small company with an opportunity to be involved with the large enterprise's e-commerce systems.

Applications of e-commerce in Airlines

Thomas Cook online strategy model Customer Acquisition SEM Affiliate Marketing Display Aggregators Email Offline Online PR Viral Consumer generated content Customer Retention & Growth Measure & Optimise Customer Conversion Attracting new customers Customer service Process Segmentation and targetting Email Cross-sell Online PR Personalisation Multichannel Harvest repeat business from existing customers Usability Accessibility Enhanced content, copywriting Promos and better merchandising Email Customer decision support Payment options Turn 'lookers' into ' bookers' Track & analyse every aspect of activity Web analytics Site performance monitoring Market intellignece Online surveys Usability testing Online panels Customer insight Source: eConsultancy Thomas Cook

Applications of e-commerce in Railway reservation

Indian Railway has set up a public sector company, Indian Railway Catering and Tourism Corporation Limited (IRCTC), owned by the Ministry of Railways. This company has been formed to function as an extended arm
of the Indian Railways to implement, upgrade and professionalize the rail reservation system besides managing the catering and hospitality services of Indian Railway. IRCTC launched its official website http://www.irctc.co.in on 3 August 2002 for the purpose of railway ticket booking through Internet. Since its inception it has emerged as one of the largest online payment Internet site in India with annual growth of more than 300%, touched a daily high of 57,
000 tickets (turnover of Rs. 9 crores) and crossed 10 lakhs in ticket sales per month during several months this year. Even the average number of tickets sold through IRCTC's website in a day is more than 40,000. IRCTC provides tickets to the public in the comforts of their home/residence and save them from hassles to visit ''Railway Reservation Centres.'' The delivery of tickets is made either through the courier or a person can himself take out the print out for traveling. By doing this IRCTC is not only saving time of public but also saving their cost of traveling/parking to these centres. For Railways it is saving on their infrastructure, i.e., buildings, air-conditioning, electricity, furniture, staff, etc. The spirit behind the project was to avoid the customer going to Passenger Reservation System (PRS) and instead bring PRS to the customer.

Applications of e-commerce in e-governance

Governments worldwide are in rethink mode vis-à-vis systems, process and procedures in order to deliver efficient and cost effective services Online. Bridging the gap between citizens, businesses and governments adopting e-governance offers eight potential models: Government-to-Citizen (G2C); Citizen-to-Government (C2G); Government-to-Business (G2B); Business-to-Government (B2G); Government-to-Government (G2G); Government-to-Non profit (G2N); Non profit to-Government (N2G); and Government-to-Employee (G2E).

E-government, which is the result of e-governance promises the continuous optimization of Service Delivery, Public participation and Governance by transforming internal and external relationships through technology, Internet and New Media.

Rain Concert has valuable experience in e-governance practices of our country and the

applications are relevant across the world. The Top Management Team with Rain Concert comes with the rewarding experience of having implemented over 25 e governance projects which include the Golden Nica winning **Akshaya Project**, the world's largest Telecentre Project, **FRIENDS**, the one stop payment collection centre for Government, **Citizen Call Centre**, e payment system for Government, State Data Centre, and the **ICT Centre for the Visually Challenged**. International acclaim and recognition for the projects were followed up with successful global footprints.

Coming as it does with the track record of a successful stint with the Information Technology Department of the government of Kerala, to execute the ICT enabling of 1000 local bodies and 75 Government Department and Agencies, Rain Concert is equipped to develop and work for any complex project.

Cyber Crimes

Electronic commerce may have large economic effects in the future. Internet commerce will change the face of business forever. Moreover, e-commerce will change banking in 21st century. The e-commerce has affected the global economy in many different ways. First of all, it has affected the information technology, and all the economic sectors, all and above e-commerce has enhanced the productivity growth worldwide and here we are going to discuss this impact, they are able to identify the number of qualified people needed to advance their country's information economy or to calculate the amount of investments needed to provide business with access to the internet. Some countries are already benefiting from the results, they are now in apposition to benchmark their economies with competitors internationally and there are many ways to accelerate the growth of productivity but the reason for this is rather controversial. Banks and financial services companies in the developing countries will need to adopt online payment system, to obtain e-trade finance and equity investment, tourism and its internet incarnation is regularly cited as one of the fastest growing ecommerce sectors E commerce is rising at 12% annually in the U.S, and EU. It is expected that in the few coming years the productivity gap between the European countries and the United states will close rapidly . Ecommerce sales are expected to reach $3.2 trillion by 2005. Advancing the Internet revolution is more than ever a key public policy goal. The impact of e –commerce on developing countries could be even stronger than that on developed countries because the scope for reducing inefficiencies and increasing productivity is much larger in the developing countries. To summarize, by cutting costs , increasing efficiency and reducing time and distance, e-commerce could become an important tool for development.

The electronic economy will force change within nation states.

The modern nation state remains the most prevalent unit of governance in the developed and the developing world. The concept has, in the last 50 years, been extended rather than retracted. There are now more than 200 hugely different nation states, with different legal and regulatory systems, existing in the world. In this context, we define a nation state as a coherent territory circumscribed by defined borders over which the single national government has legitimate jurisdiction. During its 200 year history, the nation state has endured many changes. However, the advent of the electronic economy is confronting the nation state, with intimations of a future in which its relevance to its citizens and enterprises will be challenged.

The apparatus of economic regulations and taxation through which nation states operate was developed to support and facilitate industrial economy. That economy produces tangible and location bound services that are sold and distributed within and between fixed borders. In that familiar world of national and international trade, nation states have a variety of tools at their disposal to achieve their economic ends. They can levy tariffs on imports, raise taxes, protect consumers rights, punish economic criminals, set commercial standards, and provide guarantees of monetary payment. Until recently, these tools were supported by governments majority control over communications networks and information dissemination .

Because of the emergence of global communications networks, the nation state is gradually losing monopoly control of information and financial flows. Private individuals and enterprises and groups now have the ability to source , package, and transmit information in compressed time and space. Through "digitization" currency, services, and even some goods can be conveyed immediately, transacted invisibly across the globe. Interactive networks are creating a new, network-linked world without borders, in which many commercial transactions are beyond the reach of national jurisdictions, laws, and taxation systems. As a result, many of the economic instruments and processes of the nation state need to be reexamined in the light of these new challenges.

It is nation state powerless before this new global economic system ?As electronic commerce grows, there is some risk that those nation states that have not fully embraced the changes could become marginal to the creation of economic value and electronic economy? Could the changes erode the individuals sense of national belonging, undermine tax bases, bypass national laws and undermine the rights of citizens?

TEXT BOOKS:

[T1] e-commerce: Strategy, Technologies and Applications, David Whiteley, Tata McGraw Hill

[T2] E-Commerce: The Cutting Edge of Business, KK Bajaj & Debjani Nag, McGraw Hill.

REFERENCES:

[R1] The Complete Reference: Internet, Margaret Levine Young, Tata McGraw Hill.

[R2] e-Commerce: Concepts, Models, Strategies, CSV Murthy, Himalayas Publishing House.

[R3] Frontiers of Electronic Commerce, Ravi Kalakota0 & Andrew B. Wilson, Addison-Wesley (An Imprint of Pearson Education)

[R4] Network Security Essentials: Applications & Standards, William Stallings, Pearson Education.