

Unit-1

E-Commerce

Overview of Electronic Commerce

- E-Commerce or Electronics Commerce is a methodology of modern business, which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery. Ecommerce refers to the paperless exchange of business information using the following ways –
 - Electronic Data Exchange (EDI)
 - Electronic Mail (e-mail)
 - Electronic Bulletin Boards
 - Electronic Fund Transfer (EFT)
 - Other Network-based technologies

Features of E-Commerce

- E-Commerce provides the following features –
- **Non-Cash Payment** – E-Commerce enables the use of credit cards, debit cards, smart cards, electronic fund transfer via bank's website, and other modes of electronics payment.
- **24x7 Service availability** – E-commerce automates the business of enterprises and the way they provide services to their customers. It is available anytime, anywhere.
- **Advertising / Marketing** – E-commerce increases the reach of advertising of products and services of businesses. It helps in better marketing management of products/services.
- **Improved Sales** – Using e-commerce, orders for the products can be generated anytime, anywhere without any human intervention. It gives a big boost to existing sales volumes.
- **Support** – E-commerce provides various ways to provide pre-sales and post-sales assistance to provide better services to customers.
- **Inventory Management** – E-commerce automates inventory management. Reports get generated instantly when required. Product inventory management becomes very efficient and easy to maintain.
- **Communication improvement** – E-commerce provides ways for faster, efficient, reliable communication with customers and partners.

SCOPE OF E-COMMERCE

- Selling can be focussed to the global customer
- Pre-sales, subcontracts, supply
- Financing and insurance
- Commercial transactions: ordering, delivery, payment
- Product service and maintenance
- Co-operative product development
- Distributed co-operative working
- Use of public and private services
- Business-to-administrations (e.g. customs, etc)
- Transport and logistics
- Public procurement
- Automatic trading of digital goods
- Accounting
- Dispute resolution

E-Commerce **vs.** Traditional Commerce



E-commerce v/s Traditional Commerce

Traditional Commerce

- Face to Face
- Printed & written documents
- Customization is rare
- Telephone or postal mail communication
- Payment by Cash, check or CC
- Ads: print med, radio, tv
- Merchandize deliver immediately
i.e. Customer takes merchandise home.

Electronic Commerce

- No personal contact
- Documents on the web
- Web pages personalized for a particular customer
- E-mail communication
- Payment: credit card, direct withdrawal, fund transfer (paypal)
- Ads on web, radio, TV
- Merchandise deliver home 2-5 days



Impact of e-commerce

- With a wider choice of products and services offered to them, they can cast their preferences by describing what they want.
- In this environment, e-commerce will hasten the shift of market power of consumers, from a "product taker" to a "product maker".
- As a result, this process will lead to greater competition among firms to protect their market share.
- e-commerce will result in higher investment by the Government, firms and consumers.

Impact of e-commerce

- e-commerce will eliminate mediation process as producers can sell direct to consumers.
- firms will have fast knowledge of what customers want.
- Firms can use this knowledge to guide the development of their product lines and to identify new growth areas at their earlier stages.
- e-commerce will also help small- and medium-sized enterprises (SMIs) to gain greater market reach for their products and services.



- Advantages

- Faster buying/selling procedure, as well as easy to find products.
- Buying/selling 24/7.
- More reach to customers, there is no theoretical geographic limitations.
- Low operational costs and better quality of services.
- No need of physical company set-ups.
- Easy to start and manage a business.
- Customers can easily select products from different providers without moving around physically.

Electronic Markets

- A **market** is a network of interactions and relationships where information, products, services, and payments are exchanged.
- The market handles all the necessary transactions.
- An electronic market is a place where shoppers and sellers meet electronically.
- In electronic markets, sellers and buyers negotiate, submit bids, agree on an order, and finish the execution on- or off-line.

1. Electronic Market

- Use of information and communications technology to present a range of offerings available in market segment so that the purchaser can compare the prices of the offerings and make purchase.
- E.g. Airline booking system

- **Dimensions and perspectives:**
 - *The concept of e-commerce is spanned across various dimensions. Different school of thought gave **different definitions with different perspectives**. Some defined it from business perspective and some defined with service perspective. E-Commerce can be defined from various perspectives as:*
 - **Communications perspective**
 - *Exchange of information over computer networks, telephone lines or any other electronic means.*
 - **Business perspective**
 - *Application of technology toward the automation of business transactions.*



Direct marketing:

- Direct marketing is the use of consumer direct channels to reach and deliver goods and services to consumers without using marketing middlemen.
- It helps the companies to opening dialogue directly between themselves & the end consumers of their products.
- It is targeted at individual users rather than through intermediaries.
- Company markets through various advertising media that interact directly with consumers, generally encouraging the consumer to make a direct response.

Obstacles in adopting E-Commerce Applications

- 1. Lack of awareness and preparedness for most managers.
- 2. Lack of confidence managers of companies in dealing with ecommerce
- 3. Weak consumer confidence in online shopping.
- 4. The failure of the banks in taking an effective role in facilitating the payment systems
- 5. High costs related to Web design and technical support for electronic commerce.
- 6. The existing e-commerce companies confined mostly to the presence of a page belonging to the companies.
- 7. Lack of technical staff and specialists who are able to manage e-commerce in the company.
- 8. Adoption of companies on traditional methods of interacting with consumers.

Future of E-commerce in India

- According to business world estimate near about Sixty thousand new jobs will be created for the internet world alone in the next two years.
- e-Commerce transactions are expected to cross the Rs. 5500 crore milestone in 2013-14, a jump of around 350 percent from the 2010-11.
- eBay said that consumers were trading goods worth almost three crore rupees everyday, across the globe.



Unit-2

VALUE CHAIN IN THE E-COMMERCE ERA

- Allows the so called **seamless chain scenario** or one that electronically connects various organization either in the supply or distribution chain side thereby ensuring timely information sharing and efficient logistical operations both at the supply and distribution aspects of the business.
- Expediency and efficiency both in the backward and forward channel of the business



Porter's Value Chain

- Rather than looking at departments or accounting cost types, Porter's Value Chain focuses on systems, and how inputs are changed into the outputs purchased by consumers. Using this viewpoint, Porter described a chain of activities common to all businesses, and he divided them into primary and support activities, as shown below.



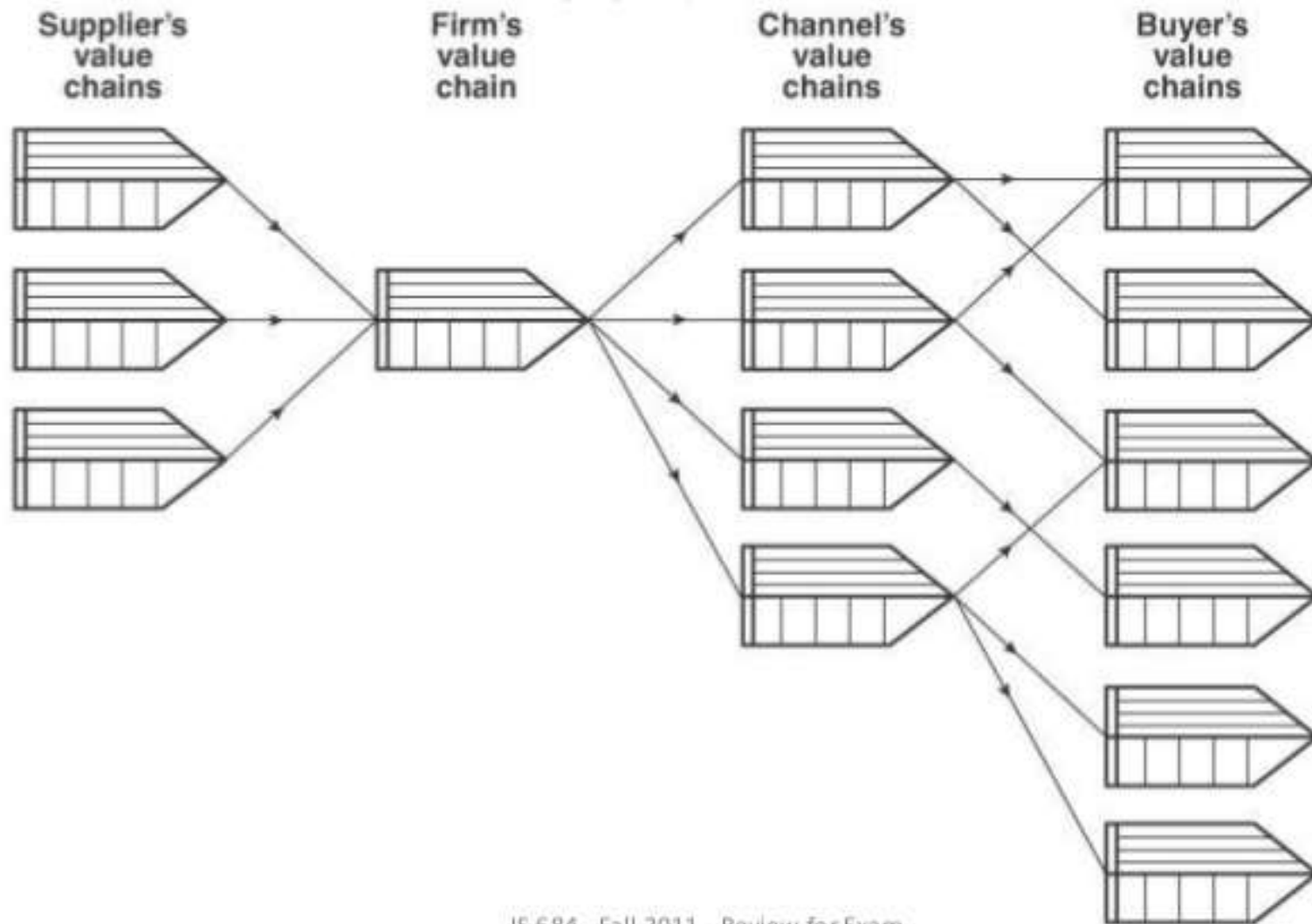
- **Primary Activities**
- Primary activities relate directly to the physical creation, sale, maintenance and support of a product or service. They consist of the following:
 - **Inbound logistics** – These are all the processes related to receiving, storing, and distributing inputs internally. Your supplier relationships are a key factor in creating value here.
 - **Operations** – These are the transformation activities that change inputs into outputs that are sold to customers. Here, your operational systems create value.
 - **Outbound logistics** – These activities deliver your product or service to your customer. These are things like collection, storage, and distribution systems, and they may be internal or external to your organization.
 - **Marketing and sales** – These are the processes you use to persuade clients to purchase from you instead of your competitors. The benefits you offer, and how well you communicate them, are sources of value here.
 - **Service** – These are the activities related to maintaining the value of your product or service to your customers, once it's been purchased.



Inter Organizational value chains

- Interorganizational system permits the flow of information to be automation between organizations in order to reach a expect supply-chain management system, which enables the development of competitive organizations. This supports forecasting client needs and the delivery of products and services.
- Interorganizational system helps to better manage buyer-supplier relationships by encompassing the full depths of tasks associated with business processes company-wide. In doing these activities, an organization is able to increase the productivity automatically; therefore, optimizing communication within all levels of an organization as well as between the organization and the supplier. For example, each T-shirt that is sold in a retail store is automatically communicated to the supplier who will, in turn, ship more T-shirts to the retailer.

Inter-organizational Value Chain or Supply Chain



Strategic business units (SBUs)

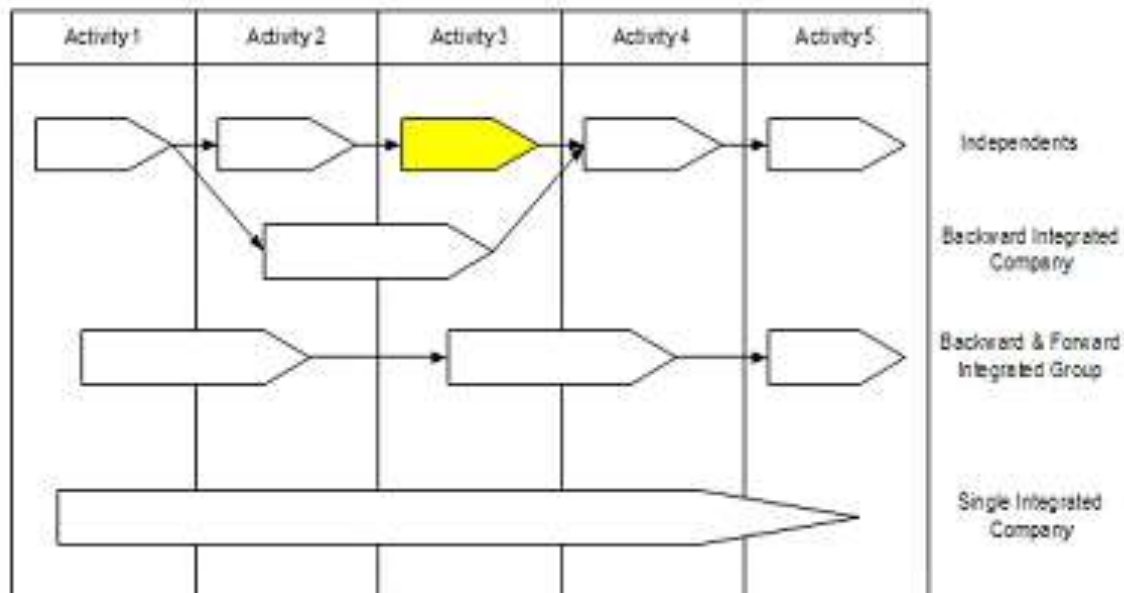


A strategic business unit (SBU) supplies goods or services for a distinct domain of activity.

- ◆ A small business has just one SBU.
- ◆ A large diversified corporation is made up of multiple businesses (SBUs).
- ◆ SBUs can be called 'divisions' or 'profit centres'
- ◆ SBUs can be identified by:
 - Market based criteria (similar customers, channels and competitors).
 - Capability based criteria (similar strategic capabilities).

The Industry Value Chain Analysis System

- **The Industry Value Chain Analysis System**
- The diagram below shows five different activities within the industry value chain or value system.
- The Industry Value Chain shows the alternative ways of competing, each with advantages and disadvantages. I'd like you to imagine that you are the business highlighted in yellow, a provider of the third activity in the value chain which links various independent suppliers.
- You analyse the industry value chain and whilst there are many independents like you, you notice that there are some competitors that are set up differently.



Security Threats in the E-commerce Environment

- ❑ Three key points of vulnerability:
 - Client
 - Server
 - Communications channel
- ❑ Most common threats:
 - Malicious code
 - Hacking and cyber vandalism
 - Credit card fraud/theft
 - Spoofing
 - Denial of service attacks
 - Sniffing
 - Insider jobs



Computer Security Classifications

- Secrecy
 - Protecting against unauthorized data disclosure and ensuring the authenticity of data source
- Integrity
 - Refers to preventing unauthorized data modification
- Necessity
 - Refers to preventing data delays or denials (removal)

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 country have different attitudes towards intellectual property rights.
- * New laws should be design and inadequate action should be impose to protect the original copyrighted contribution.

* Taxation Issues.

- * Collecting the Internet sales taxes are rather complicated.
- * Different country or nation have different tax structure.



■ Internet Copyright

□ What Is Internet Copyright

Works that are protected by copyright include text, software, graphics, music and multimedia combinations.

□ Copyright Works

- (1) Literary work
- (2) Computer programs
- (3) Titles of Web pages and hypertext links
- (4) Dramatic works
- (5) Musical composition
- (6) Works of art
- (7) Films
- (8) Broadcasting



Security Policy and Integrated Security

- Security policy is a written statement describing what assets are to be protected and why, who is responsible, which behaviors are acceptable or not
 - Physical security
 - Network security
 - Access authorizations
 - Virus protection
 - Disaster recovery

Security Policy and Integrated Security

- A security policy is a written statement describing which assets to protect and why they are being protected, who is responsible for that protection, and which behaviours are acceptable and which are not.
- Specific elements of a security policy address the following points:
 - **Authentication:** Who is trying to access the electronic commerce site?
 - **Access control:** Who is allowed to log on to and access the electronic commerce site?
 - **Secrecy:** Who is permitted to view selected information?
 - **Data integrity:** Who is allowed to change data, and who is not?
 - **Audit:** Who or what causes selected events to occur and when?

Intellectual Property Threats

- The Internet presents a tempting target for intellectual property threats
 - Very easy to reproduce an exact copy of anything found on the Internet
 - People are unaware of copyright restrictions, and unwittingly infringe on them
 - **Fair use** allows limited use of copyright material when certain conditions are met

Threats in E-commerce

- ❑ A threat is an object, person, or other entity that represents a constant danger to an asset.
- Hackers attempting to steal customer information or disrupt the site.
- A server containing customer information is stolen.
- Imposters can mirror your ecommerce site to steal customer money.
- Authorized administrators/users of an ecommerce website downloading hidden active content that attacks the ecommerce system.
- A disaffected employee disrupting the ecommerce system.
- It is also worth considering where potential threats to your ecommerce site might come from, as identifying potential threats will help you to protect your site.





Threats to the Communication Channel

- The Internet is the medium over which e-commerce data is transferred
- Messages on the Internet travel a random path from a source node to a destination node
- The content of messages is not protected and anyone on the message path can record its contents
- If communication is sensitive additional measures must be taken to protect the data
- This is a core requirement for e-commerce

Communication Channel Threats

The internet serves as the electronic chain linking a consumer (client) to an e-commerce resource (commerce server). Messages on the internet travel a random path from a source node to a destination node. The message passes through a number of intermediate computers on the network before reaching the final destination. It is impossible to guarantee that every computer on the internet through which messages pass is safe, secure, and non-hostile.

2.A.) Confidentiality Threats

2.B.) Integrity Threats

2.C.) Availability Threats



Unit -3



Protecting Electronic Commerce Assets

Requirement	Meaning
Secrecy	Prevent unauthorized persons from reading messages and business plans, obtaining credit card numbers, or deriving other confidential information.
Integrity	Enclose information in a digital envelope so that the computer can automatically detect messages that have been altered in transit.
Availability	Provide delivery assurance for each message segment so that messages or message segments cannot be lost undetectably.
Key management	Provide secure distribution and management of keys needed to provide secure communications.
Nonrepudiation	Provide undeniable, end-to-end proof of each message's origin and recipient.
Authentication	Securely identify clients and servers with digital signatures and certificates.

Figure 11-1 *Minimum requirements for secure electronic commerce*

Protecting Client Computers

- Cookies

- Small pieces of text stored on your computer and contain sensitive information that is not encrypted
- Anyone can read and interpret cookie data
- Do not harm client machines directly, but potentially could still cause damage

- Misplaced trust

- Web sites that aren't really what they seem and trick the user into revealing sensitive data

Protecting Client Computers

- Active content, delivered over the Internet in dynamic Web pages, can be one of the most serious threats to client computers
- Threats can hide in
 - Web pages
 - Downloaded graphics and plug-ins
 - E-mail attachments



Protecting e-commerce communications

- Providing e-commerce channel security means:
 - Providing channel secrecy
 - Guaranteeing message integrity
 - Ensuring channel availability
 - A complete security plan includes authentication
- Businesses must prevent eavesdroppers from reading the Internet messages that they intercept
- Best available way to do this is via encryption



Secure Electronic Transaction (SET) Protocol

- Goal is single method of conducting payment transactions on the Internet
 - Acceptance of standard has been slow
- SET specification
 - Uses public key cryptography and digital certificates for validating both consumers and merchants
 - Provides privacy, data integrity, user and merchant authentication, and consumer nonrepudiation



Protecting the Web Server

- The e-commerce server which incorporates a Web server, responds to requests from Web browsers through the HTTP protocol and CGI scripts
- Security measures for commerce servers:
 - Access control and authentication
 - Operating system controls
 - Firewall

Electronic Cash

- Electronic cash is a general term that describes the attempts of several companies to create a value storage and exchange system that operates online in much the same way that government-issued currency operates in the physical world.
- Concerns about electronic payment methods include:
 - Privacy
 - Security
 - Independence
 - Portability
 - Convenience



Digital cash (Electronic cash or e – cash)

- ❖ An alternative payment system developed for e- commerce in which unique, authenticated tokens representing cash value are transmitted from consumer to merchants.
- ❖ In these scheme, users would deposit money in a bank or provide a credit card. Banks would issue digital tokens (unique encrypted numbers) for various denominations of cash, and consumers could “spend” these at merchants sites. In return merchants submit these electronic token in its bank.
- ❖ Digital cash can also be used for micropayments or larger purchases. Digital cash is currency represented in electronic form that moves outside the normal network of money (paper currency, coins, checks, credit cards).

Digital Wallets

- Concept of digital wallet relevant to many of the new digital payment systems
- Seeks to emulate the functionality of traditional wallet
- Most important functions:
 - Authenticate consumer through use of digital certificates or other encryption methods
 - Store and transfer value
 - Secure payment process from consumer to merchant
- Two major categories:
 - Client-based digital wallets – Gator.com, MasterCard Wallet
 - Server-based digital wallets – MSN Wallet

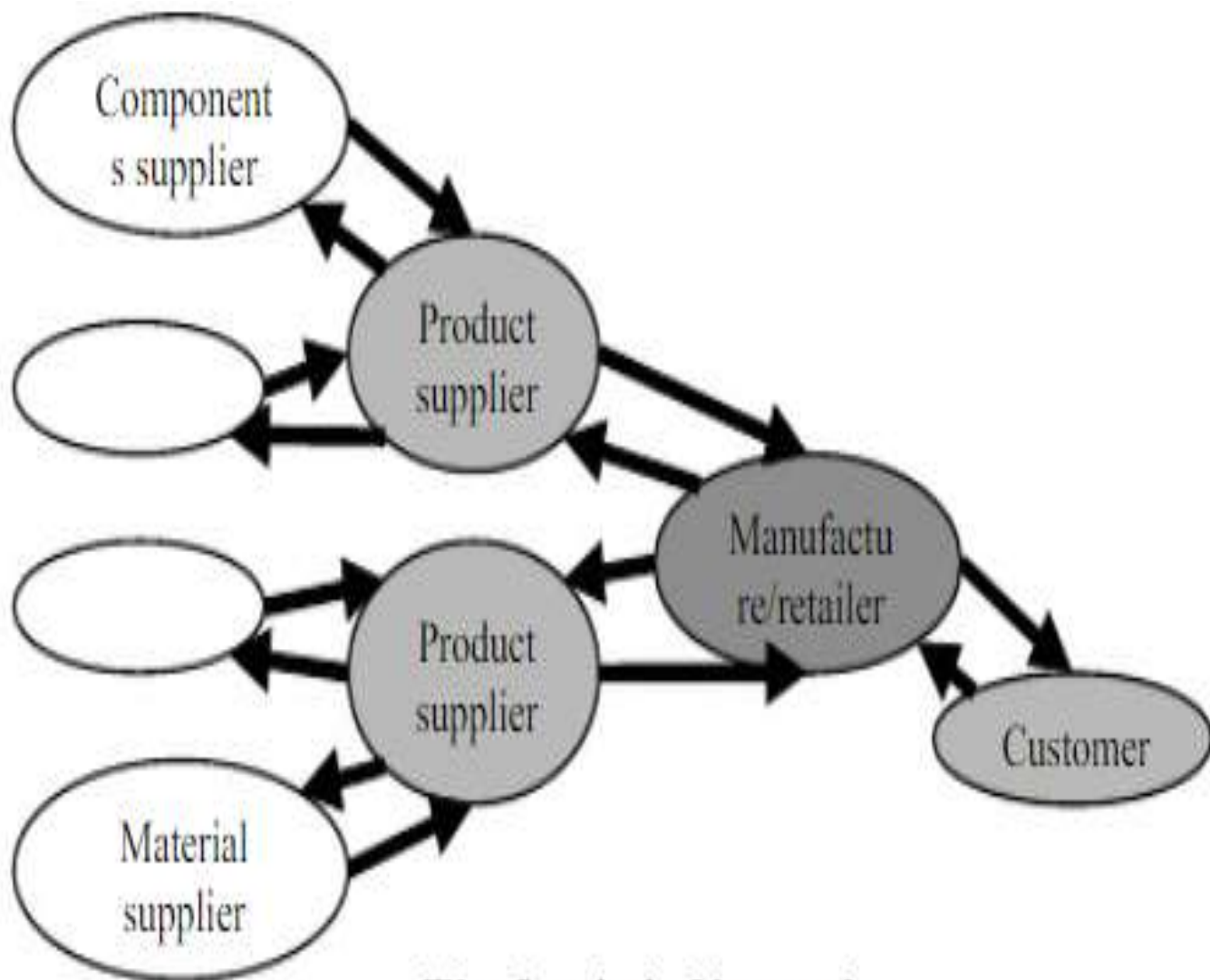
Smart Card

- A smart card is a plastic card with an embedded microchip containing information about you.
- A smart card can store about 100 times the amount of information that a magnetic strip plastic card can store.
- A smart card contains private user information, such as financial facts, private encryption keys, account information, credit card numbers, health insurance information, etc.
- E.g. Mondex smart card , Octopus smart card

Unit-4

Inter-organizational Transitions

- Business organizations are constantly buying and selling goods and services. Shop buy product inbulk from their suppliers and selling goods in small quantities to their customers. Manufactures buy rawmaterials or components from their suppliers, assemble them into new products and sell them, in turn to their customers.

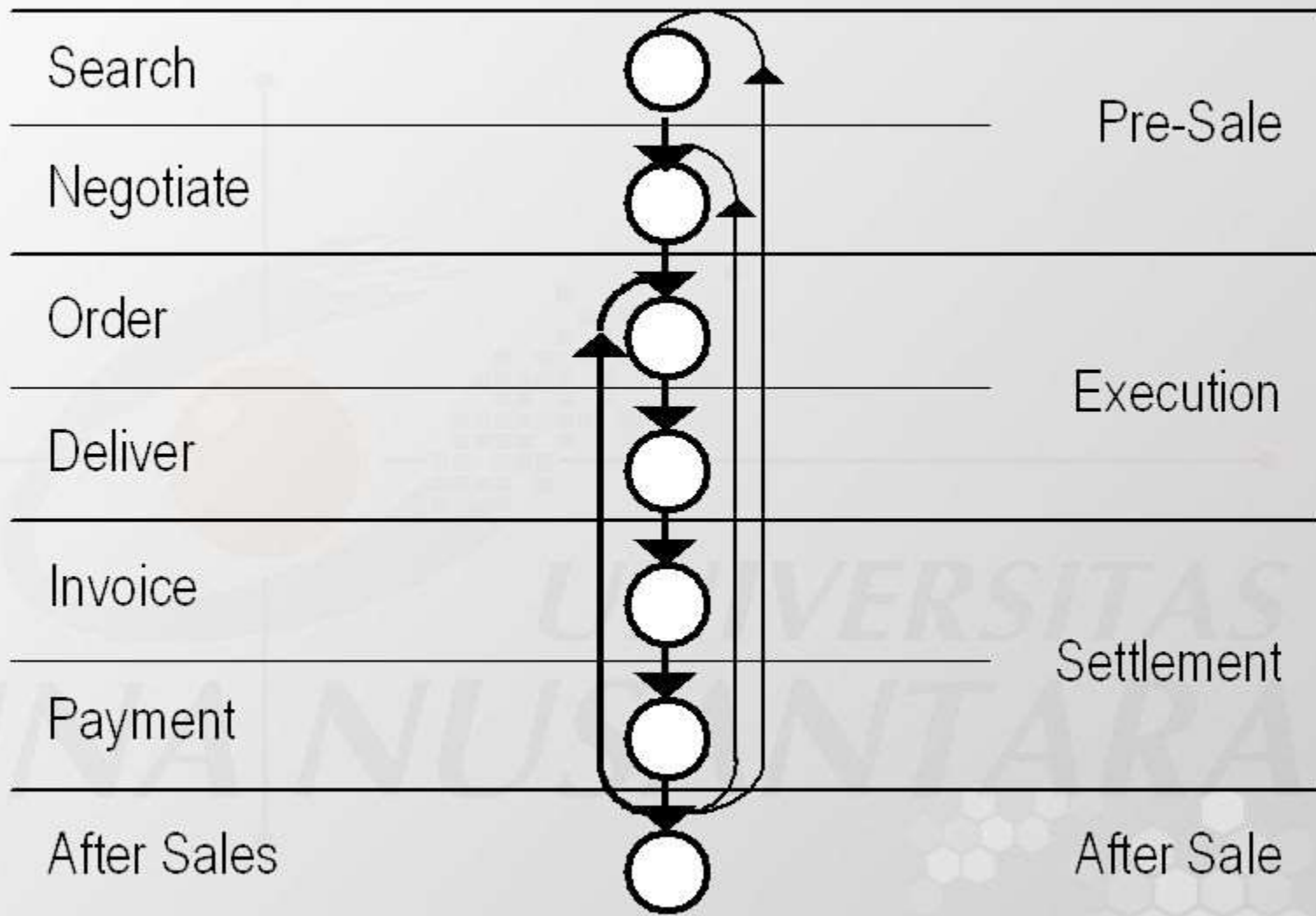


The Logistic Network

Credit transaction trade cycle

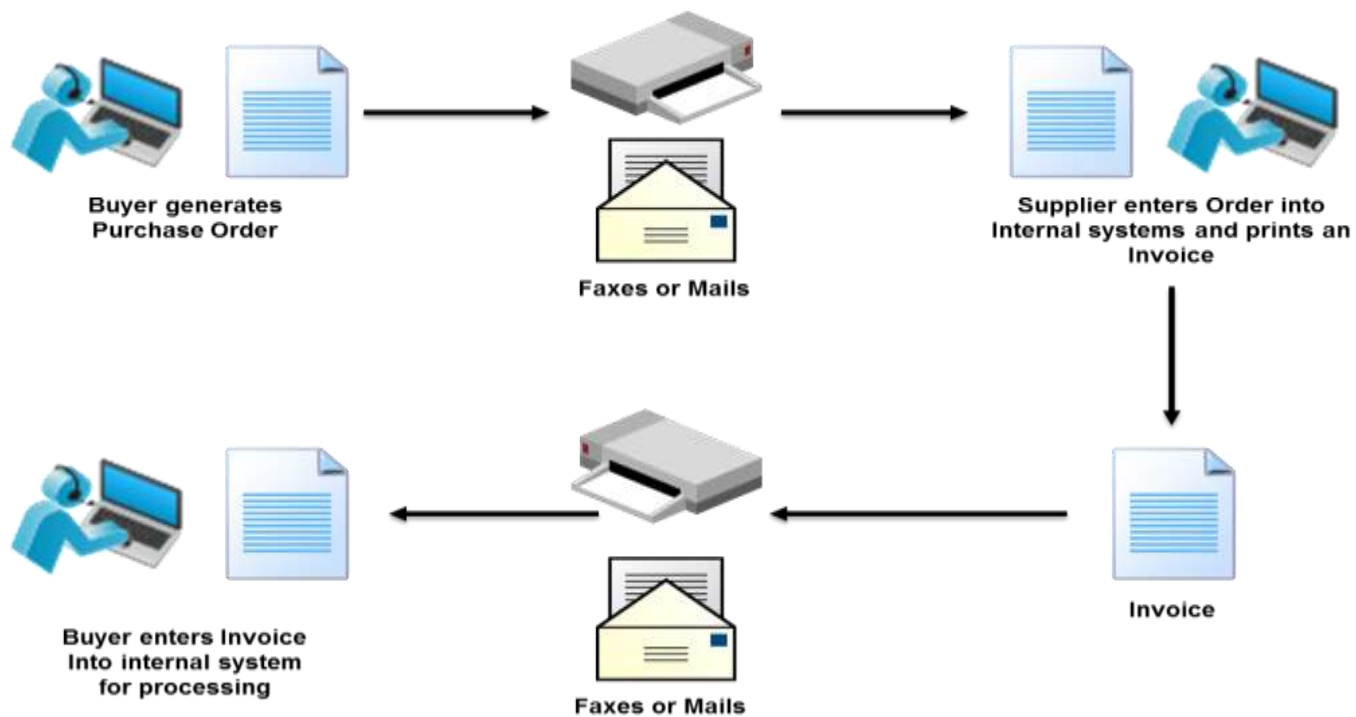
- ❖ Pre-Sales:
 - Search – find a supplier
 - Negotiate – agree terms of trade
- ❖ Execution:
 - Order (purchasing procedures)
 - Delivery (match delivery against order)
- ❖ Settlement:
 - Invoice (check against delivery)
 - Payment
- ❖ After Sales (warranty, maintenance, etc.)
- ❖ Repeat – many orders repeat on a daily or weekly basis.

Credit transaction trade cycle

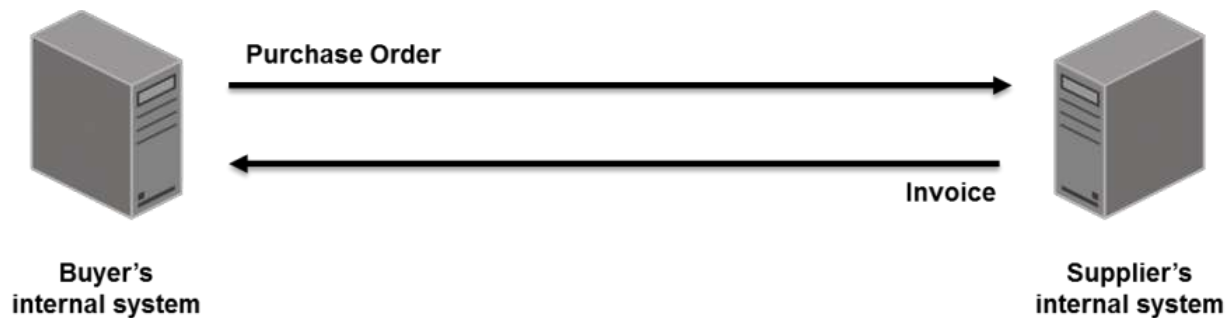


EDI

- By moving from a paper-based exchange of business document to one that is electronic, businesses enjoy major benefits such as reduced cost, increased processing speed, reduced errors and improved relationships with business partners. Learn more about the benefits of EDI [here. »](#)
- Each term in the definition is significant:
- **Computer-to-computer**— EDI replaces postal mail, fax and email. While email is also an electronic approach, the documents exchanged via email must still be handled by people rather than computers. Having people involved slows down the processing of the documents and also introduces errors. Instead, EDI documents can flow straight through to the appropriate application on the receiver's computer (e.g., the Order Management System) and processing can begin immediately. A typical manual process looks like this, with lots of paper and people involvement:



The EDI process looks like this — no paper, no people involved





Benefits of EDI

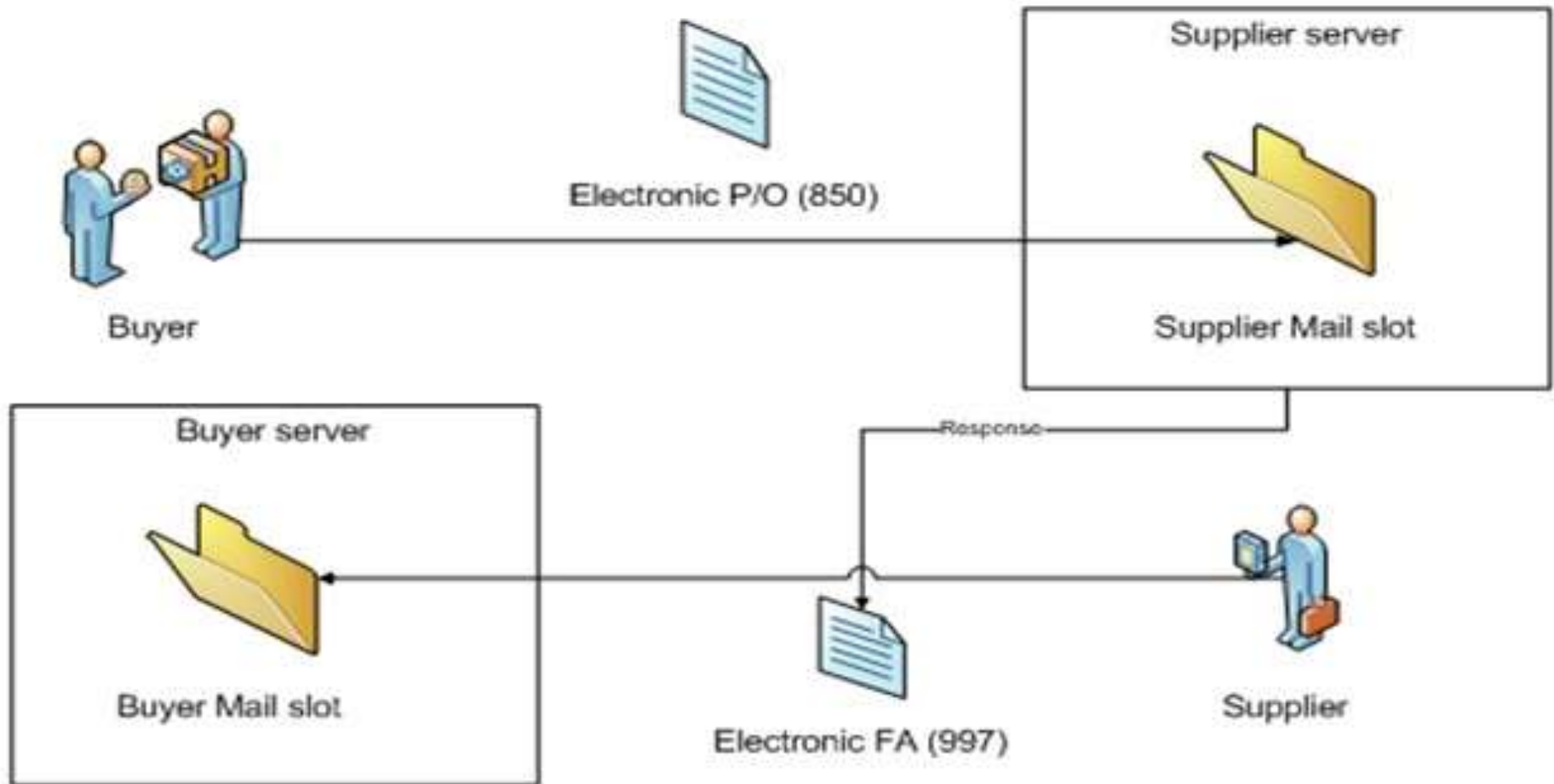
- ❖ EDI offers many significant benefits to those who fully implement and integrate it into other applications.
 - ❖ EDI reduces reliance on paper, reducing company costs for purchasing and then storing paper.
 - ❖ It moves product to market more quickly by accelerating the purchase order-invoice-payment order cycle from days or weeks to hours, even minutes.
 - ❖ EDI offers process improvement and quality assurance benefits through improving the way in which companies handle information.
 - ❖ EDI enables you to expand businesses with trading partners.
 - ❖ As your use of EDI increases, and you establish EDI relationships with more clients, you may take advantage of EDI's true power: its ability to integrate information throughout a business.

EDI Standards

- There are four major sets of **EDI standards**:
 - The **UN** recommended **UN/EDIFACT** is the only international standard and is predominant outside of North America.
 - The **US** standard **ANSI ASC X12 (X12)** is predominant in North America.
 - The **TRADACOMS** standard developed by the **ANA** (Article Numbering Association) is predominant in the UK retail industry.
 - The **ODETTE** standard used within the European automotive industry
-

EDI Communication

Visual EDI diagram based on point-to-point communication between Business partners



Visual EDI diagram based on point-to-point communication between Business partners

EDI IMPLEMENTATION

- Implementing EDI across your organization and network of business partners can be complex. Taking a systematic approach will help you deliver an effective EDI program.

Step 1: Develop the Organizational Structure

Step 2: Undertake a Strategic Review

Step 3: Conduct In-depth Analysis

Step 4: Develop a Business-Focused EDI Solution

Step 5: Select the Correct EDI Network Provider (VAN)

Step 6: Integrate EDI with the Business

Step 7: Integrate Data across the Business

Step 8: Undertake Data Mapping

Step 9: Establish a Pilot Project

Step 10: Roll out EDI to Business Partners

EDI agreements

- ❖ To achieve a successful, electronically controlled supply chain, businesses need to agree:
 - The nature of the business that is to be done electronically.
 - The technical details of how it is to be undertaken.
 - The procedures for resolving any disputes that arise.
- ❖ The appropriate way to document these details is an EDI Interchange Agreement.

EDI Security

- Interchange of message is reliable
- All the data received on EDI machine is passed and processed
- EDI software is run on separate machine
- Protection against tampering
- Privacy of message
- Validation of message delivery