

Course Portfolio

E-BUSINESS

ADMN 317

Level 6



Bachelor of Business Administration

Jazan University

Kingdome of Saudi Arabia

Code: ADMN 317

Department of Business Administration

COLLEGE OF BUSINESS ADMINISTRATION

Jazan University, Jazan(KSA)

Proposed Course Syllabus

Course Name: E-Business				Course Code: ADMN 317	
Credit Hours	3	Contact Hours	Lecture	Lab	Total
			3	0	3
Track	<input type="radio"/> Core <input type="radio"/> Major <input type="radio"/> Elective				
Level	VI		Prerequisite		

Learning Objectives

With this course students will be able to:

- Explore both the technical and business-related implications of electronically mediated commerce.
- Enables the student to trace the development of electronic business from its origins in electronic data interchange to its current growing importance.
- Explores the potential of electronic business for future development and the development of the 'Information Society'
- Explores the impact of the Information Superhighway on economic and social regeneration through the creation of new forms of organizational structure and working practices.
- Introduces the student to the strategic, cultural, legal and ethical issues facing business organizations in their daily use of the Internet.
- Develop Knowledge & skills among the students to make business transactions over the net.
- Appreciate business models for Business to Business (B2B) and Business to Consumer (B2C) e-commerce.
- Evaluate e-business scenarios and propose appropriate e-business investment strategies
- Appreciate and understand topics related to e-business such as supply chain management, customer relationship management change management, E-procurement, and e-marketing.

Course Description:

Unit I: Introduction to E-Business and E-Commerce

Introduction to Electronic Commerce, E-Business, Users of E-Business, E-Commerce & E-Business, Driver For E-Business And E-Commerce Adaption, Impact Of Electronic Commerce, Classification Of E-Commerce, McKinsyey's Framework of E-Business, Benefits Of E-Commerce, Limitations Of E-Commerce, Introduction to M-Commerce

Unit II : E-Business Environment

The E-business environment, Difference between B2B and B2C, Marketplace channel Structures, portals-introduction, types of portals, benefits, Location of trading, Trading arrangements, Business model, Revenue models - publisher example, types- Advertising, Subscription , Transaction Fee , Sales , Affiliate

Unit III – E-Business Infrastructure

E-business infrastructure, Web Hosting, Internet infrastructure components, The development of the Internet, Internet service provider (ISP), The World Wide Web, Business Uses of the Web, Internet and Web Applications, Intranet, Extranet, URLs and domain names, Controlling employee access to the Internet, Application Server Provider, Electronic data interchange (EDI)

Unit IV: E-Business Applications and Security Issues

Introduction, existing practices in developing countries with respect to buying and paying online, Supply chain management, value chain, Virtual organization, Options for restructuring the supply chain, Benefits of applying IS to SCM (B2B Company), E-procurement, E-Banking, e-tailing, online publishing, Privacy & Security, Firewalls

Unit I:

Introduction to E Business and E-Commerce

WHAT IS ELECTRONIC COMMERCE?

Even today, some considerable time after the so called '*dot com/Internet revolution*', electronic commerce (e-commerce) remains a relatively new, emerging and constantly changing area of business management and information technology. There has been and continues to be much publicity and discussion about e-commerce. Library catalogues and shelves are filled with books and articles on the subject. However, there remains a sense of confusion, suspicion and misunderstanding surrounding the area, which has been exacerbated by the different contexts in which electronic commerce is used, coupled with the myriad related buzzwords and acronyms. This course aims to consolidate the major themes that have arisen from the new area of electronic commerce and to provide an understanding of its application and importance to management. In order to understand electronic commerce it is important to identify the different terms that are used, and to assess their origin and usage.

- With the advent of the Internet, the term e-commerce began to include:
- Electronic trading of physical goods and of intangibles such as information.
- All the steps involved in trade, such as on-line marketing, ordering payment and support for delivery.
- The electronic provision of services such as after sales support or on-line legal advice.
- Electronic support for collaboration between companies such as collaborative on-line design and engineering or virtual business consultancy teams.

Some of the definitions of e-commerce often heard and found in publications and the media are:

- **All electronically mediated information exchanges between an organization and its external stakeholders (party such as customer, supplier, lender but they are not member of it)**
- Electronic Commerce (EC) is where business transactions take place via telecommunications networks, especially the Internet.
- Electronic commerce describes the buying and selling of products, services, and information via computer networks including the Internet.
- Electronic commerce is about doing business electronically.
- E-commerce, ecommerce, or electronic commerce is defined as the conduct of a financial transaction by electronic means.

The wide range of business activities related to e-commerce brought about a range of other new terms and phrases to describe the Internet phenomenon in other business sectors. Some of these focus on purchasing from on-line stores on the Internet. Since transactions go through the Internet and the Web, the terms I-commerce (Internet commerce), i-commerce and even Web-commerce have been suggested but are now very rarely used.

What is E-Business?

E-Business presents a broader dimension of eCommerce as it represents the use of electronic technology, especially web and other network technology, for business.

Today, major corporations are rethinking their businesses in terms of the Internet and its new culture and capabilities and this is what some see as e-business.

- E-business is the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners.
- E-business includes customer service (e-service) and intra-business tasks.
- E-business is the transformation of key business processes through the use of Internet technologies. An e-business is a company that can adapt to constant and continual change.
- The development of intranet and extranet is part of e-business.
- E-business is everything to do with back-end systems in an organization.

In practice, e-commerce and e-business are often used interchangeably.

Who uses eBusiness?

- 71% access and use online catalogues that lists products/prices services
- 51% receive payments for products and services
- 69% pay for products and services
- 45% take orders for products and services
- 65% place orders for products and services

Source: Sensis/ Yellow Pages EBusiness report, July 2004

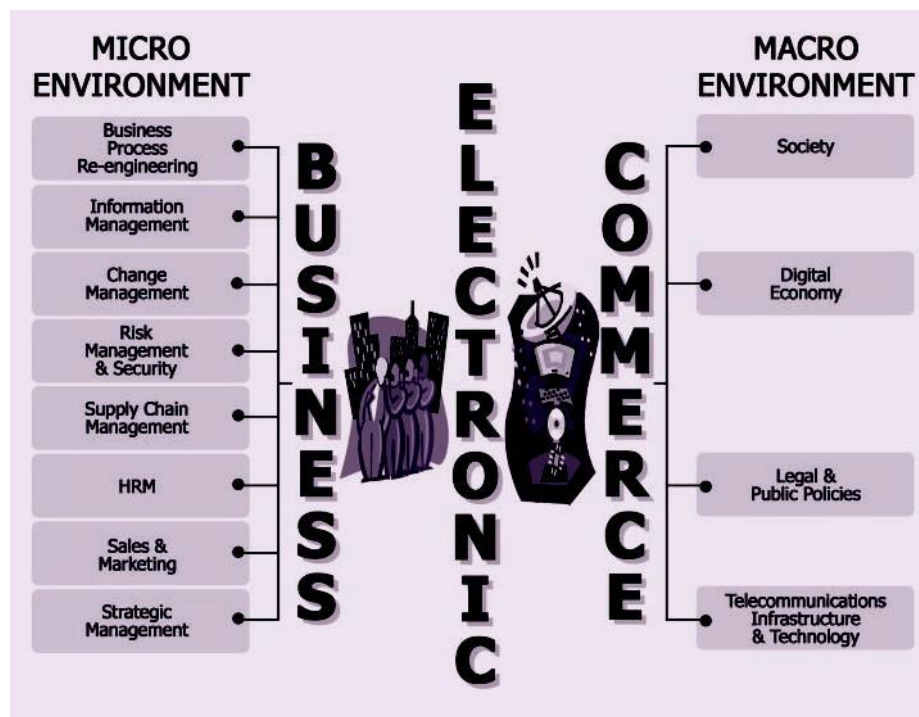
E-Commerce & E-Business

For the purpose of clarity, the distinction between e-commerce and e-business in this book is based on the respective terms commerce and business. Commerce is defined as embracing the concept of trade, 'exchange of merchandise on a large scale between different countries'. By association, e-commerce can

be seen to include the electronic medium for this exchange. Thus electronic commerce can be broadly defined as the exchange of merchandise (whether tangible or intangible) on a large scale between different countries using an electronic medium – namely the Internet. The implications of this are that e-commerce incorporates a whole socio-economic, telecommunications technology and commercial infrastructure at the macro-environmental level. All these elements interact together to provide the fundamentals of e-commerce.

Business, on the other hand, is defined as ‘a commercial enterprise as a going concern’. E-business can broadly be defined as the processes or areas involved in the running and operation of an organization that are electronic or digital in nature. These include direct business activities such as marketing, sales and human resource management but also indirect activities such as business process re-engineering and change management, which impact on the improvement in efficiency and integration of business processes and activities.

Figure 1.1 illustrates the major differences in e-commerce and e-business, where e-commerce has a broader definition referring more to the macro-environment, e-business relates more to the micro-level of the firm.



DRIVER FOR E-business and e-commerce adaption

A: Two general benefits to create e-business

1. **Increase revenue:** arising from increased reach to larger customer base and encouraging loyalty and repeat purchases among existing customer.

2. **Cost reduction:** achieved through delivering service electronically .reduction including staff cost , transport cost and cost of material such as paper.

B:COST/efficiency drivers:

1. Increase speed with which suppliers can be obtained(goods)
2. Increase speed with which goods can be dispatched
3. Reduced sales and purchasing cost (storage, cargo).
4. Reduce operating cost.

C-competitiveness drivers :

1. Customer demand
2. Improving the range and quality of service offered.
3. Avoiding losing market share to business already using e-commerce .

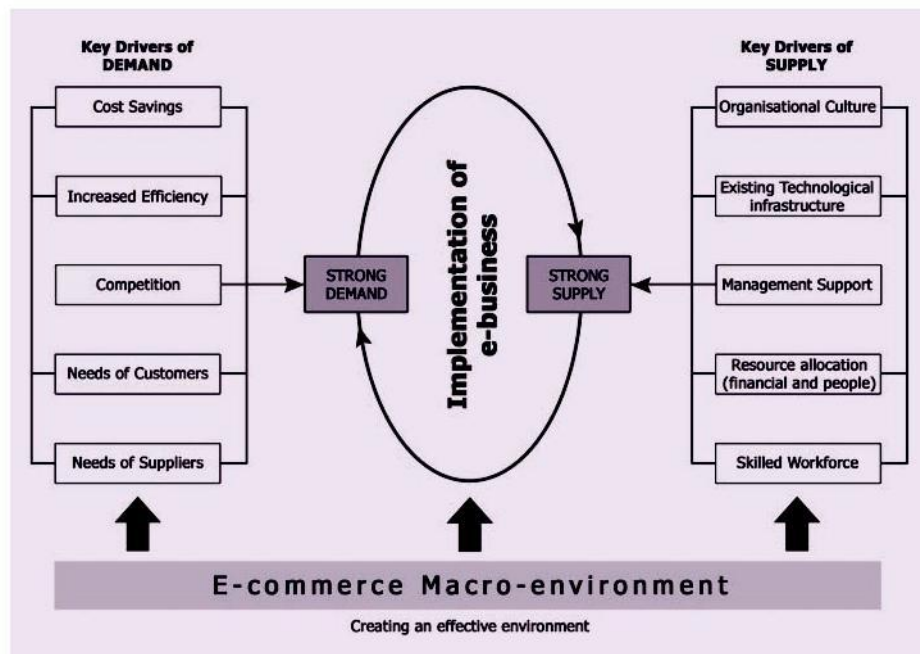


Figure 1.2 Key Drivers of E-Business

Examples of E-Business

Label Manufacturer Uses the Internet to increase export sales by allowing agents and distributors from all over the world to see the latest designs, place orders and manage their

account.

Olive Farmer

Listing of products on the website for sale as well as providing an online shopping facility for a network of other olive farms.

Restaurant

No website is required to benefit from wireless technology and handheld digital assistants taking orders from tables which are electronically sent to the kitchen.

Pottery Importer

A content management system allows up to date products, pricing and gallery events timetable to be published internally, reducing costs of external website development.

Recruitment Consultants

Implementation of an online process automated system using an Application Service Provider model to streamline job applications process.

WHAT IS THE IMPACT OF ELECTRONIC COMMERCE?

E-commerce and e-business are not solely the Internet, websites or dot com companies. It is about a new business concept that incorporates all pre-vious business management and economic concepts. As such, e-business and e-commerce impact on many areas of business and disciplines of business management studies. For example:

1. **Marketing** – issues of on-line advertising, marketing strategies and consumer behaviour and cultures. One of the areas in which it impacts particularly is direct marketing. In the past this was mainly door-to-door, home parties (like the Tupperware parties) and mail order using catalogues or leaflets. This moved to telemarketing and TV selling with the advances in telephone and television technology and finally devel-oped into e-marketing spawning ‘eCRM’ (customer relationship man-agement) data mining and the like by creating new channels for direct sales and promotion.
2. **Computer sciences** – development of different network and computing technologies and languages to support e-commerce and e-business, for example linking front and back office legacy systems with the ‘web-based’ technology.
3. **Finance and accounting** – on-line banking; issues of transaction costs; accounting and auditing implications where ‘intangible’ assets and human capital must be tangibly valued in an increasingly knowledge based economy.
4. **Economics** – the impact of e-commerce on local and global economies; understanding the concepts of a digital and knowledge-based economy and how this fits into economic theory.

5. **Production and operations management** – the impact of on-line processing has led to reduced cycle times. It takes seconds to deliver digitized products and services electronically; similarly the time for processing orders can be reduced by more than 90 per cent from days to minutes.
6. **Management information systems** – analysis, design and implementation of e-business systems within an organisation; issues of integration of front-end and back-end systems.
7. **Human resource management** – issues of on-line recruiting, home working and ‘intrapreneurs’ working on a project by project basis replacing permanent employees.
8. **Business law and ethics** – the different legal and ethical issues that have arisen as a result of a global ‘virtual’ market. Issues such as copyright laws, privacy of customer information, legality of electronic contracts, etc.

McKinsey’s 7s Framework of E-Business

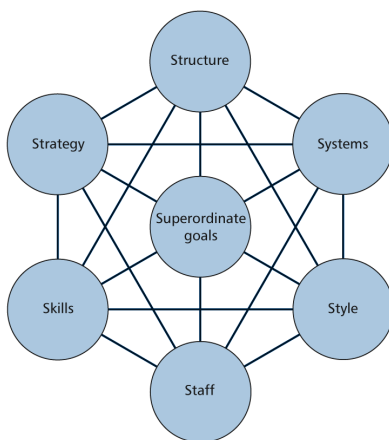


Figure 1.9 The McKinsey 7S framework

1. **Structure:** how will the e-business change be managed
2. **System :**do new operating procedure or busniess processes need to be introduced.
3. **Style:** the style of leadership adopte –

4. **Staff:** is the appropriate mix of staff available
5. **Skills** – are the correct skills available internally ?what training required .
6. **Superordinate goals** : this refer to the higher goals of the company that may be encapsulated.
7. **Strategy** :direction and scope of the company over long term

Classification of E-Commerce

TRANSACTION ORIGINATING FROM AND BEING FULFILLED BY		Business	Consumer	Government	Peer
TRANSACTION INITIATED & ACCEPTED BY	Business	B-to-B	B-to-C	B-to-G	B-to-P
	Consumer	C-to-B	C-to-C	C-to-G	C-to-P
	Government	G-to-B	G-to-C	G-to-G	G-to-P
	Peer	P-to-B	P-to-C	P-to-G	P-to-P

Business-to-Business (B-to-B) The exchange of products, services or information between business entities. According to market research studies published in early 2000, the money volume of B-to-B exceeds that of B-to-C by 10 to 1. The Gartner Group estimates B-to-B revenue worldwide will be \$7.29 trillion by 2004, a compound annual growth of about 41 per cent. Web-based B-to-B includes:

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

Business-to-consumer (B-to-C): The exchange of products, information or services between business and consumers in a retailing relationship. Some of the first examples of B-to-C e-commerce were amazon.com and dell.com in the USA and lastminute.com in the UK. In this case, the 'c' represents either consumer or customer.

Business-to-Government (B-to-G) : The exchange of information, services and products between business organisations and government agencies on-line. This may include,

- **E-procurement services**, in which businesses learn about the purchasing needs of agencies and provide services.
- **A virtual workplace** in which a business and a government agency could coordinate the work on a contracted project by collaborating on-line to coordinate on-line meetings, review plans and manage progress.
- **Rental of on-line applications** and databases designed especially for use by government agencies.

Business-to-Peer Networks (B-to-P) This would be the provision of hardware, software or other services to the peer networks. An example here would be Napster who provided the software and facilities to enable peer networking.

Consumer-to-Business (C-to-B) This is the exchange of products, information or services from individuals to business. A classic example of this would be individuals selling their services to businesses.

Consumer-to-Consumer (C-to-C) In this category consumers interact directly with other consumers. They exchange information such as:

- Expert knowledge where one person asks a question about anything and gets an e-mail reply from the community of other individuals, as in the case of the New York Times-affiliated abuzz.com website.
- Opinions about companies and products, for example epinions.com.

There is also an exchange of goods between people both with consumer auction sites such as e-bay and with more novel bartering sites such as swapitshop.com, where individuals swap goods with each other without the exchange of money.

Consumer-to-Government (C-to-G) Examples where consumers provide services to government have yet to be implemented. See Government-to-Business.

Government-to-Business (G-to-B) (Also known as e-government) The exchange of information, services and products between government agencies and business organisations. Government sites now enable the exchange between government and business of:

- Information, guidance and advice for business on international trading, sources of funding and support (ukishelp), facilities (e.g. www.dti.org.uk).
- A database of laws, regulations and government policy for industry sectors.
- On-line application and submission of official forms (such as company and value added tax).

- On-line payment facilities.

This improves accuracy, increases speed and reduces costs, so businesses are given financial incentives to use electronic-form submission and payment facilities.

Government-to-Consumer (G-to-C) (Also known as e-government). Government sites offering information, forms and facilities to conduct transactions for individuals, including paying bills and submitting official forms on-line such as tax returns.

Government-to-Government (G-to-G) (Also known as e-government). Government-to-government transactions within countries linking local governments together and also international governments, especially within the European Union, which is in the early stages of developing coordinated strategies to link up different national systems.

WHAT ARE THE BENEFITS OF E-COMMERCE?

The benefits of e-commerce can be seen to affect three major stakeholders: organisations, consumers and society.

Benefits of e-commerce to organizations

International marketplace. What used to be a single physical marketplace located in a geographical area has now become a borderless marketplace including national and international markets. By becoming e-commerce enabled, businesses now have access to people all around the world. In effect all e-commerce businesses have become virtual multinational corporations.

Operational cost savings. The cost of creating, processing, distributing, storing and retrieving paper-based information has decreased (see Intel mini-case).

Mass customisation. E-commerce has revolutionised the way consumers buy good and services. The pull-type processing allows for products and services to be customised to the customer's requirements. In the past when Ford first started making motor cars, customers could have any colour so long as it was black. Now customers can configure a car according to their specifications within minutes on-line via the www.ford.com website.

Enables reduced inventories and overheads by facilitating 'pull'-type supply chain management – this is based on collecting the customer order and then delivering through JIT (just-in-time) manufacturing. This is particularly beneficial for companies in the high technology sector, where stocks of components held could quickly become obsolete within months. For example, companies like Motorola (mobile phones), and Dell (computers) gather customer orders for a product, transmit them electronically to the manufacturing plant where they are manufactured according to the customer's specifications (like colour and features) and then sent to the customer within a few days.

Lower telecommunications cost. The Internet is much cheaper than value added networks (VANs) which were based on leasing telephone lines for the sole use of the organisation and

its authorised partners. It is also cheaper to send a fax or e-mail via the Internet than direct dialling.

Digitisation of products and processes. Particularly in the case of software and music/video products, which can be downloaded or e-mailed directly to customers via the Internet in digital or electronic format.

No more 24-hour-time constraints. Businesses can be contacted by or contact customers or suppliers at any time.

Benefits of e-commerce to consumers

24/7 access. Enables customers to shop or conduct other transactions 24 hours a day, all year round from almost any location. For example, check-ing balances, making payments, obtaining travel and other information. In one case a pop star set up web cameras in every room in his house, so that he could check the status of his home by logging onto the Internet when he was away from home on tour.

More choices. Customers not only have a whole range of products that they can choose from and customise, but also an international selection of suppliers.

Price comparisons. Customers can 'shop' around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared (for example www.moneyextra.co.uk for financial products and services).

Improved delivery processes. This can range from the immediate delivery of digitised or electronic goods such as software or audio-visual files by downloading via the Internet, to the on-line tracking of the progress of packages being delivered by mail or courier.

An environment of competition where substantial discounts can be found or value added, as different retailers vie for customers. It also allows many individual customers to aggregate their orders together into a single order presented to wholesalers or manufacturers and obtain a more competitive price (aggregate buying), for example www.letsbuyit.com.

Benefits of e-commerce to society

Enables more flexible working practices, which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful work-ing environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly.

Connects people. Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them.

Facilitates delivery of public services. For example, health services avail-able over the Internet (on-line consultation with doctors or nurses), filing taxes over the Internet through the Inland Revenue website.

WHAT ABOUT THE LIMITATIONS OF E-COMMERCE?

Limitations of e-commerce to organizations

Lack of sufficient system security, reliability, standards and communication protocols. There are numerous reports of websites and databases being hacked into, and security holes in software. For example, Microsoft has over the years issued many security notices and 'patches' for their software. Several banking and other business websites, including Barclays Bank, Powergen and even the Consumers' Association in the UK, have experienced breaches in security where 'a technical oversight' or 'a fault in its systems' led to confidential client information becoming available to all.

Rapidly evolving and changing technology, so there is always a feeling of trying to 'catch up' and not be left behind.

Under pressure to innovate and develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organisation. The ease with which business models can be copied and emulated over the Internet increase that pressure and curtail longer-term competitive advantage.

Facing increased competition from both national and international competitors often leads to price wars and subsequent unsustainable losses for the organisation.

Problems with compatibility of older and 'newer' technology.

There are problems where older business systems cannot communicate with web-based and Internet infrastructures, leading to some organisations running almost two independent systems where data cannot be shared. This often leads to having to invest in new systems or an infrastructure, which bridges the different systems. In both cases this is both financially costly as well as disruptive to the efficient running of organisations.

Limitations of e-commerce to consumers

Computing equipment is needed for individuals to participate in the new 'digital' economy, which means an initial capital cost to customers.

A basic technical knowledge is required of both computing equipment and navigation of the Internet and the World Wide Web.

Cost of access to the Internet, whether dial-up or broadband tariffs.

Cost of computing equipment. Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirements of the Internet, websites and applications.

Lack of security and privacy of personal data. There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data.

Physical contact and relationships are replaced by electronic processes. Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings.

A lack of trust because they are interacting with faceless computers.

Limitations of e-commerce to society

Breakdown in human interaction. As people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in where people are more comfortable interacting with a screen than face to face.

Social division. There is a potential danger that there will be an increase in the social divide between technical haves and have-nots – so people who do not have technical skills become unable to secure better-paid jobs and could form an underclass with potentially dangerous implications for social stability.

Reliance on telecommunications infrastructure, power and IT skills, which in developing countries nullifies the benefits when power, advanced telecommunications infrastructures and IT skills are unavailable or scarce or underdeveloped.

Wasted resources. As new technology dates quickly how do you dispose of all the old computers, keyboards, monitors, speakers and other hardware or software?

Facilitates Just-In-Time manufacturing. This could potentially cripple an economy in times of crisis as stocks are kept to a minimum and delivery patterns are based on pre-set levels of stock which last for days rather than weeks.

What is m-commerce?

M-commerce (mobile commerce) is the buying and selling of goods and services through wireless technology-i.e., handheld devices such as cellular telephones and personal digital assistants (PDAs). Japan is seen as a global leader in m-commerce.

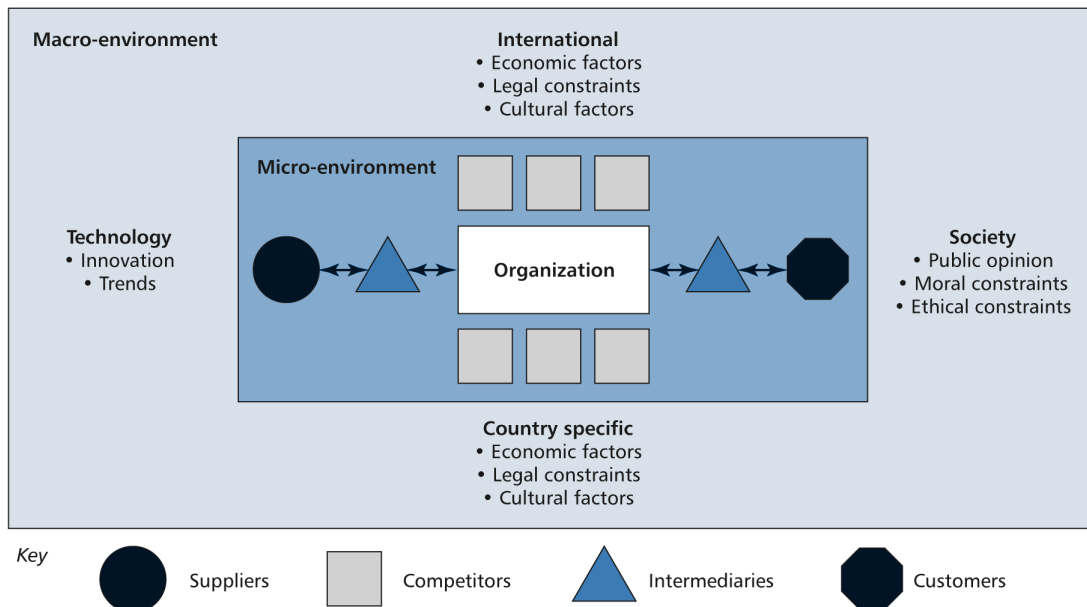
As content delivery over wireless devices becomes faster, more secure, and scalable, some believe that m-commerce will surpass wireline e-commerce as the method of choice for digital commerce transactions. This may well be true for the Asia-Pacific where there are more mobile phone users than there are Internet us-ers.

Industries affected by m-commerce include:

- **Financial services**, including mobile banking (when customers use their handheld devices to access their accounts and pay their bills), as well as bro-kerage services (in which stock quotes can be displayed and trading conducted from the same handheld device);
- **Telecommunications**, in which service changes, bill payment and account reviews can all be conducted from the same handheld device;
- **Service/retail**, as consumers are given the ability to place and pay for orders on-the-fly; and
- **Information services**, which include the delivery of entertainment, financial news, sports figures and traffic updates to a single mobile device

Unit II : E-Business Environment

The e-business environment



Figure

Figure 2.1 The environment in which e-business services are provided

Environment constraints and opportunities

A-Micro-environment

- 1- -Customers – which services are they offering via their web site that your organization could support them in?
- 2 - Competitors – need to be benchmarked in order to review the online services they are offering – do they have a competitive advantage?
- 3- Intermediaries – are new or existing intermediaries offering products or services from your competitors while you are not represented?
- 4 - Suppliers – are suppliers offering different methods of procurement to competitors that give them a competitive advantage?

B - Macro-environment

- 1 -Economic factors:These include interest rates, taxation changes, economic growth, inflation and exchange rates For example: higher interest rates may deter investment because it costs more to

borrow and a strong currency may make exporting more difficult because it may raise the price in terms of foreign currency.

2 - Social factors. Changes in social trends can impact on the demand for a firm's products and the availability and willingness of individuals to work

3-Technological factors: new technologies create new products and new processes. MP3 players, computer games.

Difference between B2B & B2C

Characteristic	B2C	B2B
Proportion of adopters with access	Low to medium	High to very high
Complexity of buying decisions	Relatively simple – individual and influencers	More complex – buying process involves users, specifiers, buyers, etc.
Channel	Relatively simple – direct or from retailer	More complex, direct or via wholesaler, agent or distributor
Purchasing characteristics	Low value, high volume or high value, low volume. May be high involvement	Similar volume/value. May be high involvement. Repeat orders (rebuys) more common

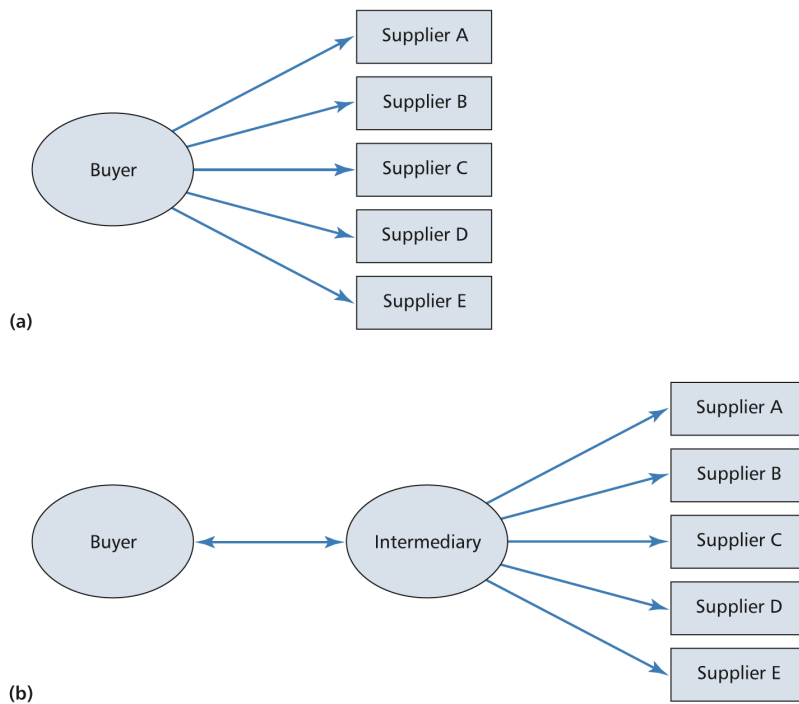
Product characteristic	Often standardized items	Standardized items or bespoke for sale
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Marketplace channel Structures

Channel structures describe the way a manufactures or selling organizing delivers products and services to its customers. The distribution channel will consist of one or more intermediaries such as wholesalers and retailer.

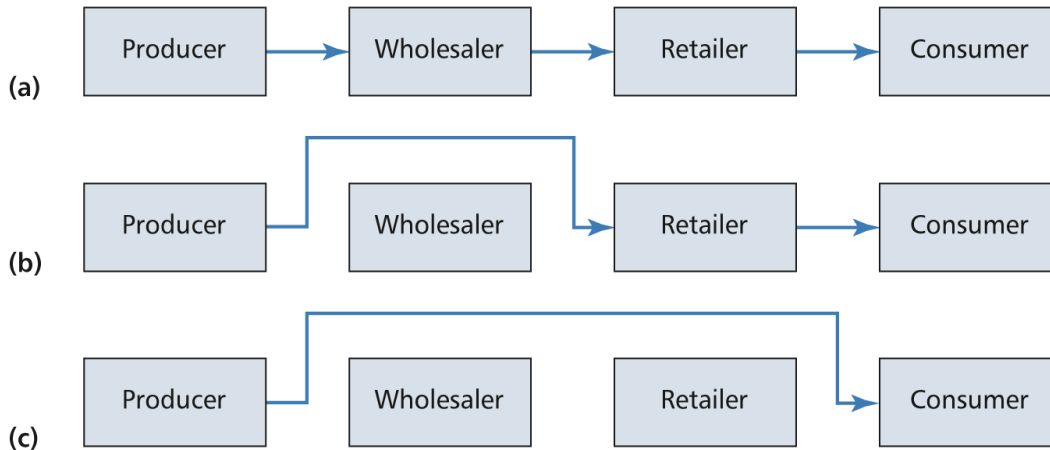
1- Reintermediation: the creation of new intermediaries between customers and suppliers providing services such as supplier search and product evaluation .

Figure 2.2 Reintermediation process: (a) original situation, (b) reintermediation contacts



2 - Disintermediation: the removal of intermediaries such as distributors or brokers that formerly linked a company to its customers .

Figure 2.3 Disintermediation of a consumer distribution channel showing (a) the original situation, (b) disintermediation omitting the wholesaler, and (c) disintermediation omitting both wholesaler and retailer



3. Countermediation : Creation of a new intermediary

Portals

Portal: a web site that acts as a gateway to information and services available on the internet by providing search engines, directories and other services such as personalized news or free email.

From an end user perspective, a portal is a web site with pages that are organized by tabs or some other form of navigation. Each page contains a nesting of sub-pages, or one or more portlets—individual windows that display anything from static HTML content to complex web services. A page can contain multiple portlets, giving users access to different information and tools in a single place. Users can also customize their view of a portal by adding their own pages, adding portlets of their choosing, and changing the Look And Feel of the interface.

Technically speaking, a portal is a container of resources and functionality that can be made available to end users. These portal views, which are called desktops in WebLogic Portal, provide the uniform resource location (URL) that users access. A portal presents diverse content and applications to users through a consistent, unified web-based interface. Portal administrators and users can customize portals, and content can be presented based on user preferences or rule-based personalization. Each portal is associated with a web application that contains all of the resources required to run portals on the web.

Portals provide the following benefits to the user:

- Aggregation – The user can go to a single place for all content and applications.
- Customization – The preferences for a user determine how the portal looks and feels.
- Personalization – The user can obtain content that is specific to their interests and needs.
- Organization – The user can arrange the content and applications to make better sense of the information.
- Integration – The user can work with multiple applications and content sources in a unified fashion.

Portals typically include the following features and benefits:

- Search – Enterprise and web-based search facilities
- Content Management – Creation, management, and delivery of content
- Content Repurposing – Including content from multiple disparate data sources
- Portals optionally include the following features and benefits:
 - Workflow – Business process management
 - Single Sign-On – Allows users to log on once for all applications within the portal

Portal

‘A gateway to information resources and services’



Types of portal

1 - Vertical portal: presents information focusing on a specific subject for a particular set of people

such as <http://www.pets.com> (pets)

<http://www.mp3.com/>(music)

<http://www.garden.com/> (gardening)

2 - Horizontal portal: provide a range of services such as Yahoo! Excite, AltaVista, and AOL.com.

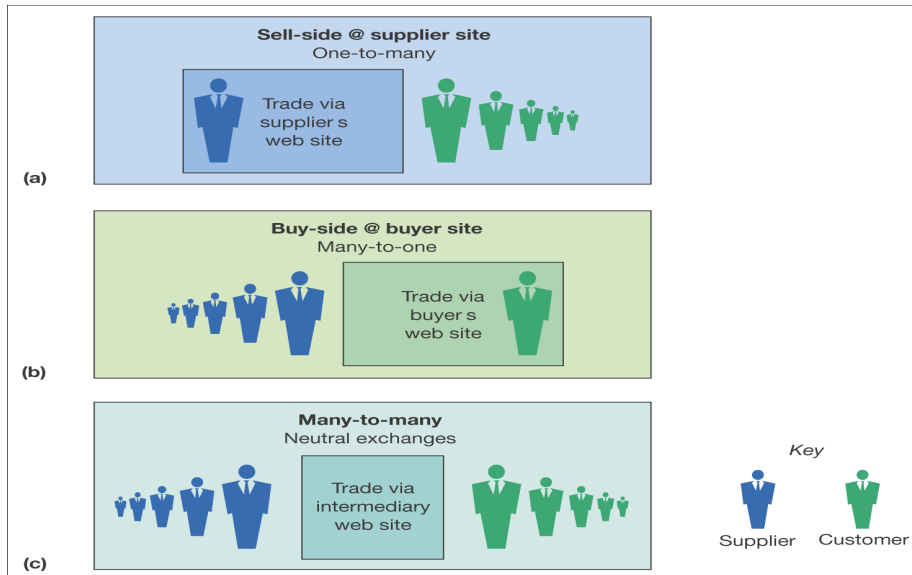


Figure 2.5 Variations in the location and scale of trading on e-commerce sites

Business model

Timmers (1999) defines a 'business model' as

An architecture for product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenue.

Business models on the web

- E-shop
- E-procurement
- E-malls
- E-auctions
- Virtual communities

- Collaboration platforms
- Third-party marketplace
- Value-chain service providers
- Information brokerage
- Trust and other services

Revenue models

Describe methods of generating income for an organization. Example: Global Composites.com

Revenue models – publisher example

1. Subscription access to content.
2. Pay-per-view access.
3. CPM on site display advertising.
4. CPC advertising on site.
5. Sponsorship of site sections, content or widgets.
6. Affiliate revenue (CPA or CPC).
7. Subscriber data access for e-mail marketing.
8. Access to customers for research purposes.

Types of Revenue Models

1. Advertising Revenue Model

Typically, fees are generated from advertisers in exchange for advertisements, which is ultimately the classic principal among the revenue models besides sales. Even if representatives of major media companies complain about earning less money with online advertising than with advertising in print or TV, the figures indicate steadily rising revenues.

The advertising revenue model is based on contacts making it one of the indirect sources of revenue. The conventional version is display-marketing - for example wallpaper, super banner, rectangle, skyscraper - which is paid according to traffic (invoice per CPC/cost-per-click or CPX/cost-per-action). The main online advertising variations are besides display-marketing, affiliate-marketing (advertising on many websites, CPX) and search-engine-marketing (CPC). Special models are e-mail-marketing and social-media-marketing. For advertisers with a lower budget for example the New York Times created a

self-booking-tool for display-ads on a CPM(Cost-per-mille)-basis. And there are still rising new opportunities.

Examples

- [Google](#) (e.g. AdWords and AdSense)
- [Facebook](#)
- [New York Times](#) (Marketing)

2. Subscription Revenue Model

Users are charged a periodic (daily, monthly or annual) fee to subscribe to a service. Many sites combine free content with premium membership, i.e. subscriber- or member-only content. Subscription fees do not depend on transactions. Subscribers use the content as long and often as they want.

Examples

- Publishers and content services, e.g. newspapers, magazines, tv channels - they provide text, audio or video content to users who subscribe for a fee to get access to the service or to download the new issue: [New York Times](#), [Spiegel Online](#), [Zattoo](#), [Netflix](#)
- Networks offer premium memberships to find business partners or former classmates, subscribers can use all services, i.e. they get any information about their account via short notifications or newsletter, receive and send e-mails, get job offers: [Xing](#), [LinkedIn](#), [Stayfriends](#)
- Internet service providers offer the connectivity (e.g. via broadband) and services around (security software for download, e-mail-services): [T-Online](#), [AOL](#)
- Special services: Companies offer security and payment services to internet service providers and online retail customers: [Paypal](#), [VeriSign](#). VeriSign's subscription fees depend in case of SSL Certificates on the level of security and the validity period which varies from one to three years.

3. Transaction Fee Revenue Model

A company receives commissions based on volume for enabling or executing transactions. The revenue is generated through transaction fees by the customer paying a fee for a transaction to the operator of a platform. The company is a market place operator providing the customer with a platform to place his transactions. During this process the customer may be presented as a buyer as well as a seller. To actively participate in this e-market, customers must register, so both parties of a transaction taking place are identified. From a business perspective, the offer is determined

by others as customers offer their goods online and are acting as sellers. The amount of the transaction fee can be both – fixed and percentage calculated.

Examples

- [eBay](#)
- [Amazon](#)

4. Sales Revenue Model

Wholesalers and retailers of goods and services sell their products online. The main benefits for the customer are the convenience, time savings, fast information etc. The prices are often more competitive. In terms of online sales there are different models such as market places as common entry points for various products from multiple vendors.

Examples

- the shops of single companies, sometimes based on web-catalogs (combines mail, online and telephone-ordering): [Otto](#)
- [e-tailers](#) operating solely over the web: [Amazon](#)
- marketplaces: [Buy.com](#), [Etsy](#)
- live shopping: [iBood](#), [guut.de](#), [woot!](#)
- shopping clubs: [brands4friends](#), [vente-privee.com](#)

5. Affiliate Revenue Model

The affiliate program is an online distribution solution which is based on the principle of commission. Merchants advertise and sell their products and services through links to partner-websites. It is a pay-for-performance model: Commissions are only paid for actual revenue or measurable success. An affiliate-link includes a code, which identifies the affiliate. That's how clicks, leads or sales are tracked. The affiliate therefore acts as the interface between merchants and customers. This model leads to a win-win situation: the merchants sell their products or services and the affiliates get their commissions. Variations include banner exchange, pay-per-click and revenue sharing programs. The affiliate model is well-suited for the web and therefore very popular.

Examples

- [Amazon](#)
- [affilinet](#)

Unit III – E-Business Infrastructure

E-business infrastructure

The architecture of hardware, software, content, and data used to deliver e-business services to employees, customers and partner

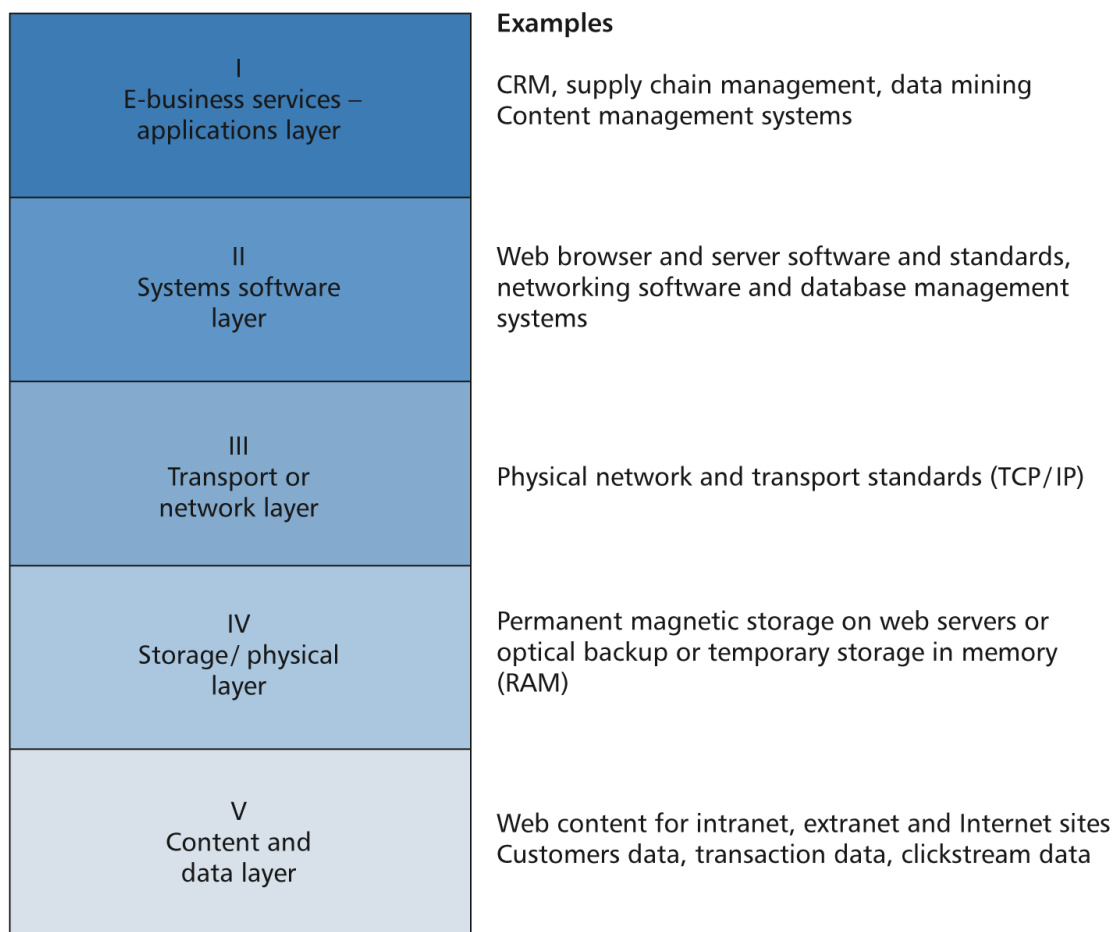


Figure 3.1: A five-layer model of e-business infrastructure

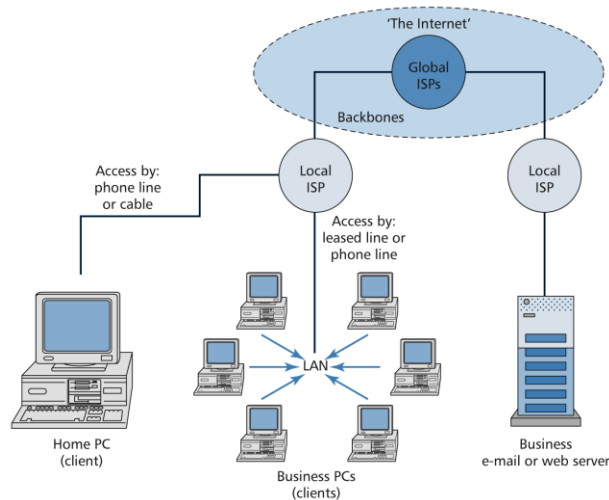
Web Hosting

A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via the World Wide Web. Web hosts are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in a data

center. Most websites are hosted on a dedicated web server at the external web hosting provider's location. The benefits of a web hosting provider include:

- **Domain Name Services** – including website name registration, website forwarding, providing multiple email accounts and domain name protection services.
- **Storage and Backup** – of the website and files including databases and email lists.
- **Server Speed and Reliability** – of the website is important as people are accessing your business website from computers around the world. It is important that a website is always accessible and remains uninterrupted by power failures and server faults.
- **Management Information** – Web hosting companies should provide access to real-time website traffic statistics which will allow your business to evaluate and monitor the number of visitors, time spent viewing and which country the visitors originate from.
- **Security** – Webhosting companies have systems and processes in place which reduce the risk of a security breach on your website (such as viruses and hackers).
- **Technical Support** – Time is money and hence you should check to ensure that your web hosting company has a dedicated technical support team to answer questions and solve technical problems via a telephone and or an email support centre.
- **Advanced Solutions** – To provide a full range of solutions including managed services across various office locations, shopping cart e-commerce technology, secure servers, content management systems, database hosting and wireless services.
- **Pricing** - Website hosting is a competitive industry and fees typically range from \$20 to \$100 per month. The difference in price relates to the amount of Megabyte Disk Space, the monthly data transfer per month, number of email addresses and whether there is e-commerce and database connectivity.

Figure 3.2 Physical and network infrastructure components of the Internet (Levels IV and III in Figure 3.1)



Internet infrastructure components: Framework for internet

- Infrastructure: hardware, software, database and telecommunication
- Services: software-based services such as search engines, digital money and security systems
- Products and services: the web sites of individual companies and marketplace

The development of the Internet

Internet: a collection of interconnected networks, all freely exchanging information

- **ARPANET:** Ancestor of the Internet, A project started by the U.S. Department of Defense (DoD) in 1969
- **Internet Protocol (IP):** communication standard enabling traffic to be routed from one network to another as needed
- **Research for a faster Internet:** Internet2 (I2); Next Generation Internet (NGI); Abilene
- **Wireless Internet**

How the Internet Works

- The Internet transmits data from one computer (called a *host*) to another
- If the receiving computer is on a network to which the first computer is directly connected, it can send the message directly

- If the receiving computer is not on a network to which the sending computer is connected, the sending computer relays the message to another computer that can forward it

LAN

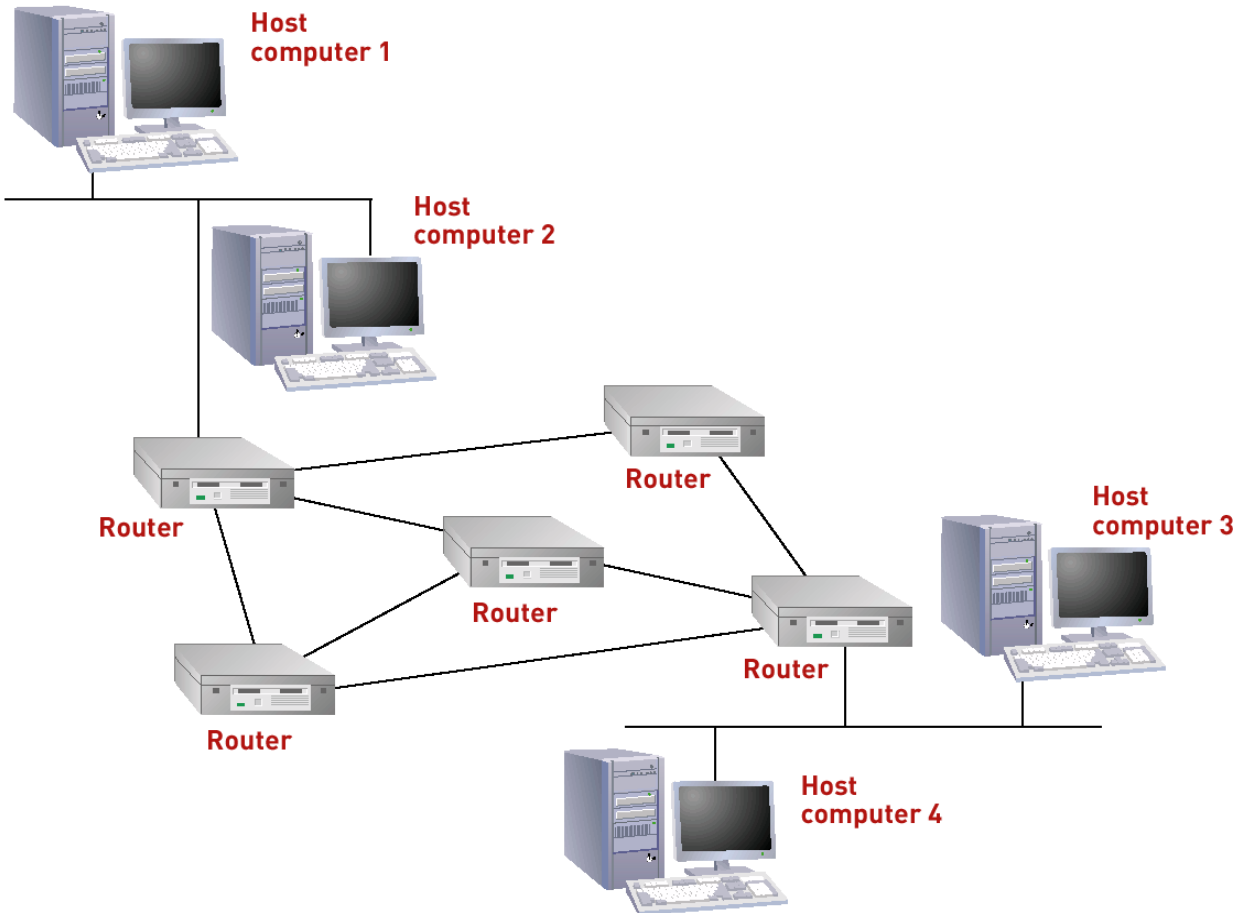


Figure 3.3: Routing Messages over the Internet

- Data is passed in chunks called *packets*
- Transmission Control Protocol (TCP): widely used transport layer protocol that is used in combination with Internet Protocol (IP) by most Internet applications
- Uniform Resource Locator (URL): an assigned address on the Internet for each computer

Accessing the Internet

- Connect via LAN server
- Connect via Serial Line Internet Protocol (SLIP)/Point-to-Point Protocol (PPP)
- Connect via an online service

- Other ways to connect (e.g., wireless application protocol, or WAP)

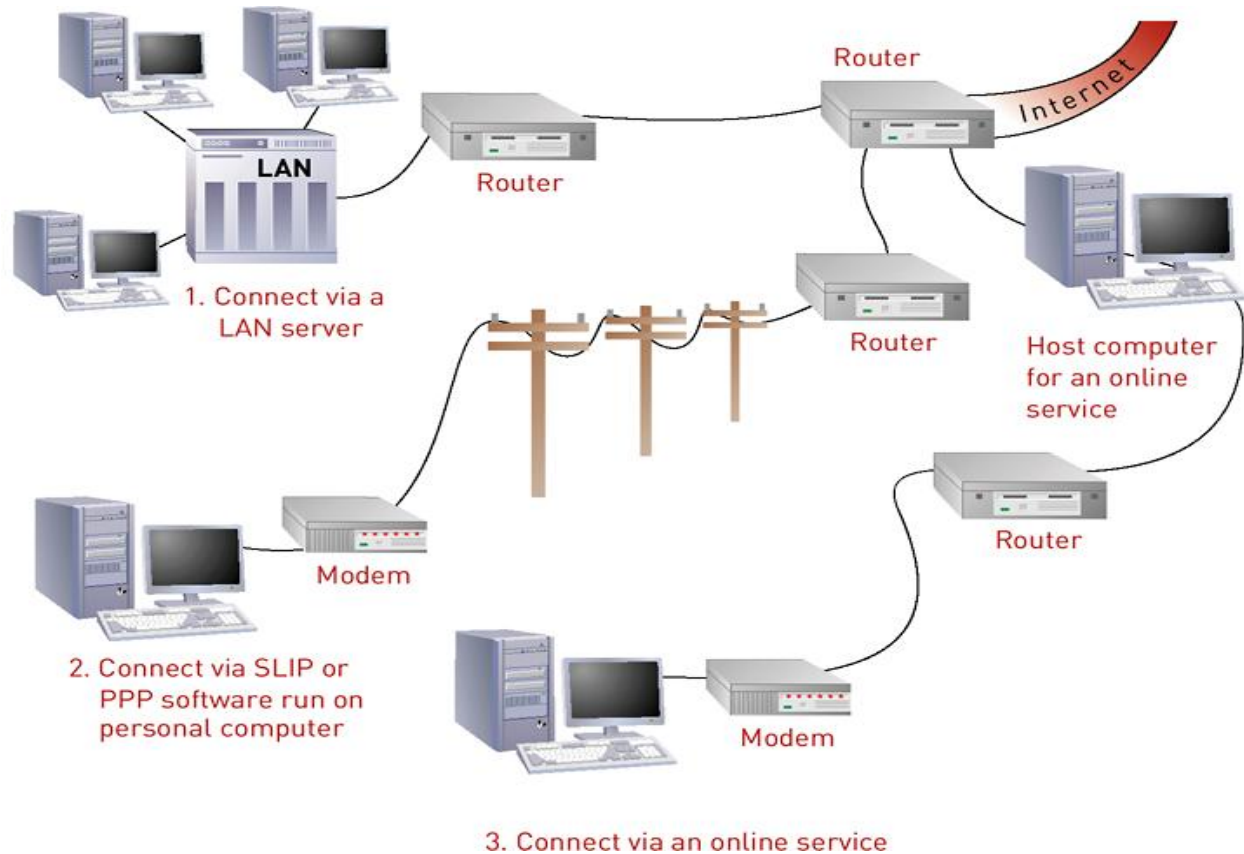


Figure 3.4: Several Ways to Access the Internet

Internet service provider (ISP):

- any company that provides individuals or organizations with Internet access
- Most charge a monthly fee
- Many ISPs and online services offer broadband Internet access through digital subscriber lines (DSLs), cable, or satellite transmission

The World Wide Web

- World Wide Web: AKA the Web, WWW, or W3
- A menu-based system that uses the client/server model
- Organizes Internet resources throughout the world into a series of menu pages, or screens, that appear on your computer
- Hypermedia: tools that connect the data on Web pages, allowing users to access topics in whatever order they wish

- Hypertext Markup Language (HTML): the standard page description language for Web pages
- HTML tags: inform browsers how to format text on a Web page, and whether images, sound, and other elements should be inserted
- Extensible Markup Language (XML): markup language for Web documents containing structured information, including words, pictures, and other elements



Figure 3.5: Sample Hypertext Markup Language

Web Browsers

- Web browser: software that creates a unique, hypermedia-based menu on a computer screen, providing a graphical interface to the Web
- The menu consists of graphics, titles, and text with hypertext links

Search Engines

- Search engine: a Web search tool
- Examples of search engines: Yahoo.com; Google.com
- Most search engines are free
- Searches can use words such as AND and OR to refine the search

- Meta-search engine: submits keywords to several individual search engines and returns the results from all search engines queried

Search Engine	Web Address
AltaVista	www.altavista.com
Ask Jeeves	www.ask.com
Google	www.google.com
HotBot	www.hotbot.lycos.com
Infoseek	http://infoseek.go.com
Northern Light	www.northernlight.com
Yahoo!	www.yahoo.com

Table3.1: Popular Search Engines

Web Programming Languages

- Java
 - Object-oriented programming language from Sun Microsystems based on C++
 - Allows small programs (applets) to be embedded within an HTML document
- Other programming languages used to develop Web sites:
 - JavaScript
 - VBScript
 - ActiveX
 - Hypertext Preprocessor (PHP)

Business Uses of the Web

- E-mail

- Linking buyers and sellers
- Tool for marketing, sales, and customer support
- Push technology: automatic transmission of information over the Internet rather than making users search for it with their browsers

Internet and Web Applications

- E-mail and instant messaging
- Instant messaging: a method that allows two or more individuals to communicate online using the Internet
- Internet cell phones and handheld computers
- Career information and job searching
- Telnet and FTP
 - Telnet: a terminal emulation protocol that enables users to log on to other computers on the Internet to gain access to public files
 - File Transfer Protocol (FTP): a protocol that describes a file transfer process between a host and a remote computer and allows users to copy files from one computer to another
- Web log (blog): a Web site that people can create and use to write about their observations, experiences, and feelings on a wide range of topics
- Usenet and newsgroups
 - Usenet: a system closely allied with the Internet that uses e-mail to provide a centralized news service; a protocol that describes how groups of messages can be stored on and sent between computers
 - Newsgroups: online discussion groups that focus on specific topics
- Chat room: a facility that enables two or more people to engage in interactive “conversations” over the Internet
- Internet phone and videoconferencing services
- Content streaming: a method for transferring multimedia files over the Internet so that the data stream of voice and pictures plays more or less continuously without a break, or very few of them; enables users to browse large files in real time
- Shopping on the Web

- Web auctions
- Music, radio, and video on the Internet
- Office on the Web
- Internet sites in three dimensions
- Free software and services

Service	Description
E-mail	Enables you to send text, binary files, sound, and images to others.
Career information and job searches	Enables you to get up-to-date information on careers and actual jobs.
Telnet	Enables you to log on to another computer and access its public files. Users can log on to a work computer from an off-site location.
FTP	Enables you to copy a file from another computer to your computer.
Web logs (blogs)	Allows people to create and use a Web site to write about their observations, experiences, and feelings on a wide range of topics.
Usenet and newsgroups	Allows online discussion groups that focus on a particular topic.
Chat rooms	Enables two or more people to have online text conversations in real time.
Internet phone	Enables you to communicate with others around the world by linking Internet and traditional phone service.

Table 3.2: Summary of Internet and Web Applications

Intranet

- a. Internal corporate network built using Internet and World Wide Web standards and products
- b. Slashes the need for paper
- c. Provides employees with an easy and intuitive approach to access information that was previously difficult to obtain

Uses of Intranet

- Used for internal marketing communication
- Staff phone directories
- Staff procedure
- Information such as product specification, discount prices, stocking levels and factory schedules.
- Training course

Extranet: a network based on Web technologies that links selected resources of a company's intranet with its customers, suppliers, or other business partners.

- Extending an intranet beyond a company to customers, suppliers and collaborators.
- Used extensively to support supply chain management as resources are ordered from supplies and transformed into products and services delivered to customers

Virtual private network (VPN): a secure connection between two points across the Internet

Tunneling: the process by which VPNs transfer information by encapsulating traffic in IP packets over the Internet.

Type	Users	Need for User ID and Password
Internet	Anyone	No
Intranet	Employees and managers	Yes
Extranet	Business partners	Yes

Table 3.4: Summary of Internet, Intranet, and Extranet Users

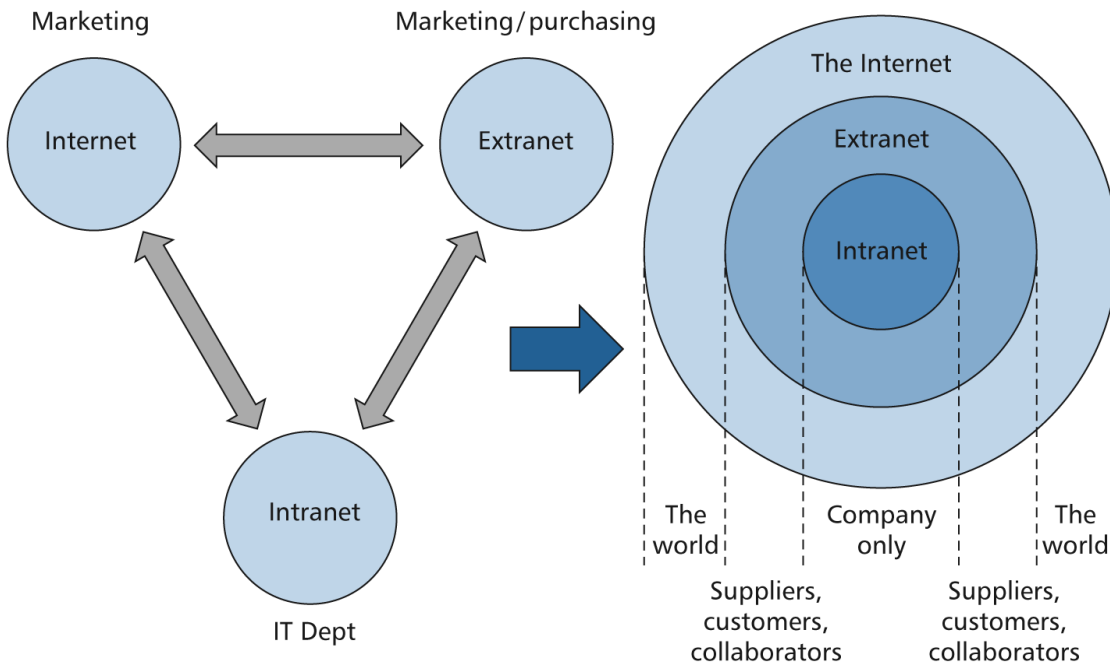


Figure 3.4 The relationship between intranets, extranets and the Internet

Intranet is used to support sell-side e-commerce from within the marketing function.

The advantages

- Reduced product lifecycle- as information on the product development and marketing campaign is efficient we can get products to market faster
- Reduce cost: higher productivity and saving hard copy.
- Better customer service: responsive and personalized support with staff accessing customer over the web.
- Distribution of information: remote offices.

URLs and domain names

- URL a web address used to locate a web page on the web server
- Web addresses are structured in a standard way as follows
- `http://www.domain-name.extension/filename.html`

Domain	Affiliations
--------	--------------

arts	cultural and entertainment activities
com	business organizations
edu	educational sites
firm	businesses and firms
gov	government sites
info	information service providers
mil	military sites
nom	individuals
net	networking organizations
org	organizations
rec	recreational activities
store	businesses offering goods for purchase
web	entities related to World Wide Web activities
net	networking organizations

Controlling employee access to the Internet

- Consult staff for views
- Prepare cost/benefit
- Prepare plan and communicate to staff
- Prioritize or limit staff access(e.g. One per group)

Managing e-Business Infrastructure

Management of e-Business application infrastructure is concern in delivering the right applications to all users of e-business services.

Differing use of applications at different levels in a company

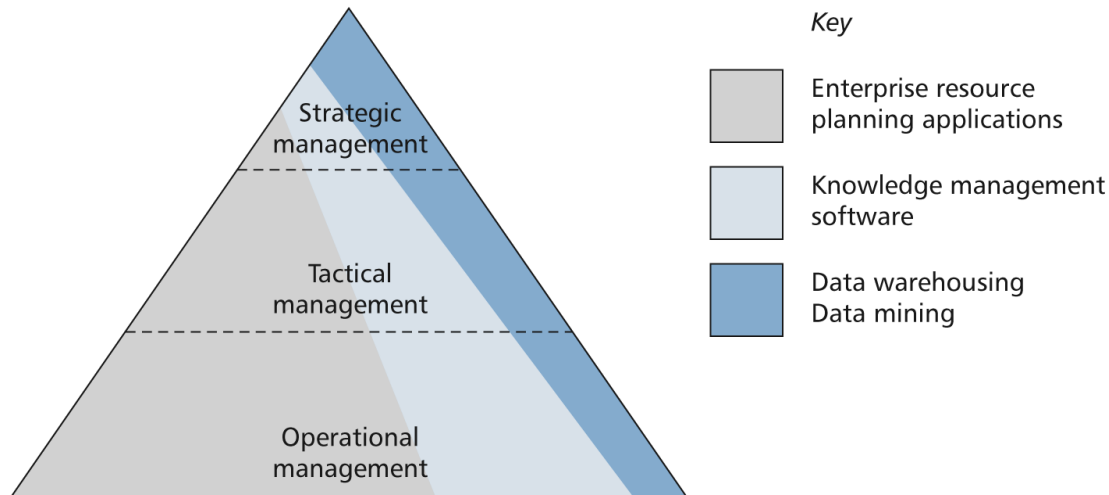


Figure 3.16 Differing use of applications at levels of management within companies

Application Server Provider

An application service provider (ASP) is a business that provides computer-based services to customers over a network. Software offered using an ASP model is also sometimes called on-demand software or software as a service (SaaS). The most limited sense of this business is that of providing access to a particular application program (such as customer relationship management) using a standard protocol such as HTTP.

The need for ASPs has evolved from the increasing costs of specialized software that have far exceeded the price range of small to medium sized businesses. As well, the growing complexities of software have led to huge costs in distributing the software to end-users. Through ASPs, the complexities and costs of such software can be cut down. In addition, the issues of upgrading have been eliminated from the end-firm by placing the onus on the ASP to maintain up-to-date services, 24 x 7 technical support, physical and electronic security and in-built support for business continuity and flexible working.

The importance of this marketplace is reflected by its size. As of early 2003, estimates of the United States market range from 1.5 to 4 billion dollars. Clients for ASP services include businesses, government organizations, non-profits, and membership organizations.

Advantages

- Short time to deploy new applications

- No in-house staff or capital costs
- Predictable cost

Disadvantages

- Performance
- Security outages
- Security fears
- Transfer of data and ownership of applications if the ASP relationship fails

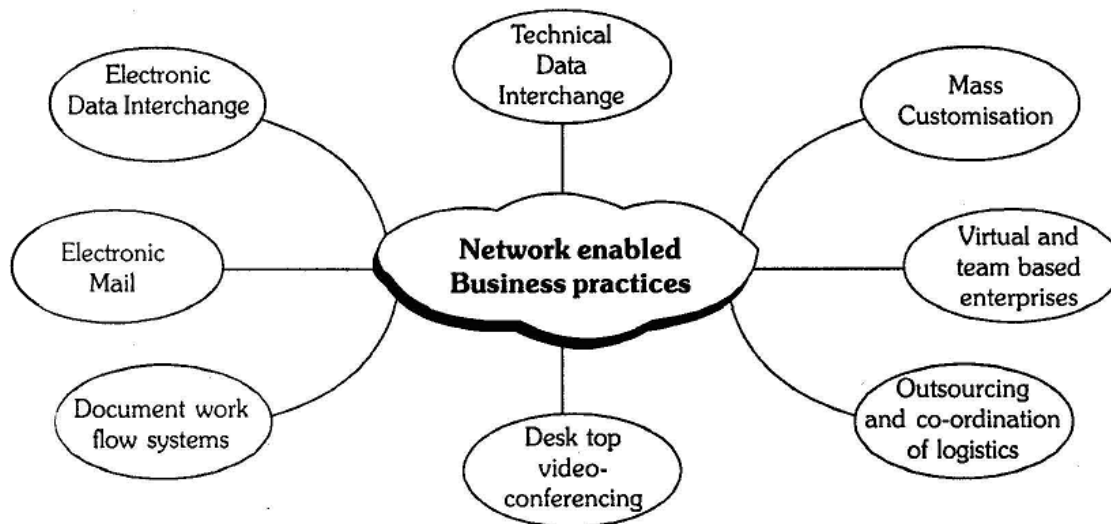
Electronic data interchange (EDI)

Electronic data interchange (EDI): the exchange of documents in standardized electronic form, between organizations, in an automated manner, directly from a computer application in one organization to an application in another.

Definition of EDI

EDI is the controlled transfer of data between business and organisations via established security standards.

EDI benefits are many. The major benefit is cost reduction by eliminating paper document handling and with faster electronic document transmission.



The benefits of using EDI is to streamline business processes

- Faster fulfillment of orders, less time in placing and receiving orders
- Fewer errors in data entry and less time spent by the buyer and supplier

- Reduce cost resulting from reduced staff time and material saving and improve inventory control
- Compliance with customer needs

Limitations of EDI

Though there are accepted benefits, EDI do not find wide spread acceptance because of the following

- (i) **High costs** - Applications are costing to develop and operate. Specially new entrants find this more difficult to have EDI.
- (ii) **Limited accessibility** - It does not allow consumers to communicate or transact with vendors in an easy way. A subscriber must subscribe to an online service called VAN (value added network)
- (iii) **Rigid requirements** - Needs highly structured protocols, previously established arrangements, and unique proprietary bilateral information exchanges.
- (iv) EDI applications automate any certain portion of the transactions.
- (v) Applications are narrow in scope.

Disadvantages of EDI

- Since EDI is a structured way of working, companies usually change operating procedures.
- Responsibilities may have to be changed during the introduction of EDI system. Unless this system and the links with other systems are managed well, it is not possible for the data processing department to become involved in production and purchasing decisions.
- Less transparent than paper-based systems.
- Certain EDI systems are highly flexible, others are very simple to implement.
- Users have developed systems to take advantage of the FAX machine which may avoid portal delays. Acknowledgment could be received through FAX.
- How secure is the operation is one of the questions. Are there standards for the type of operation we envisage, what happens when telephone lines or computers fail? How can the backup system work to replace?

Unit IV: E-Business Applications and Security Issues

Introduction

Various applications of e-business are continually affecting trends and prospects for business over the Internet, including E-SCM, e-procurement, e-banking, e-tailing and online publishing/online retailing.

What are the existing practices in developing countries with respect to buy-ing and paying online?

Supply chain management (SCM)

The coordination of all supply activities of an organization from its suppliers and partners to its customers

1. Upstream supply chain Transactions between an organization and its suppliers and intermediaries, equivalent to buy-side e-commerce
2. Downstream supply chain Transactions between an organization and its customers and intermediaries, equivalent to sell-side e-commerce

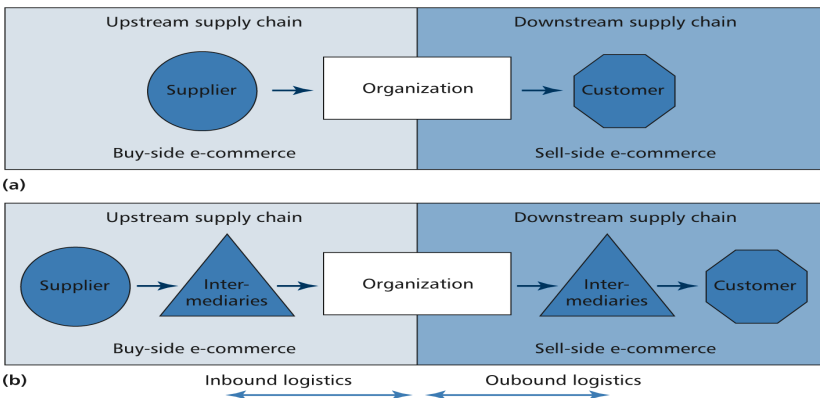
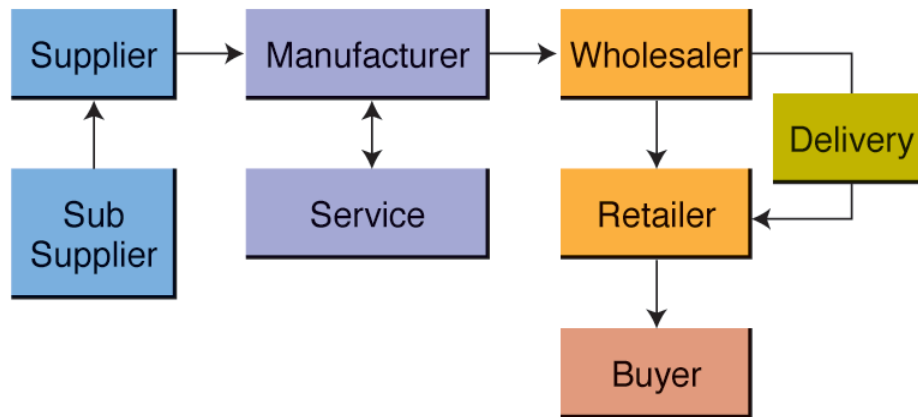


Figure 4.1 Members of the supply chain: (a) simplified view, (b) including intermediaries

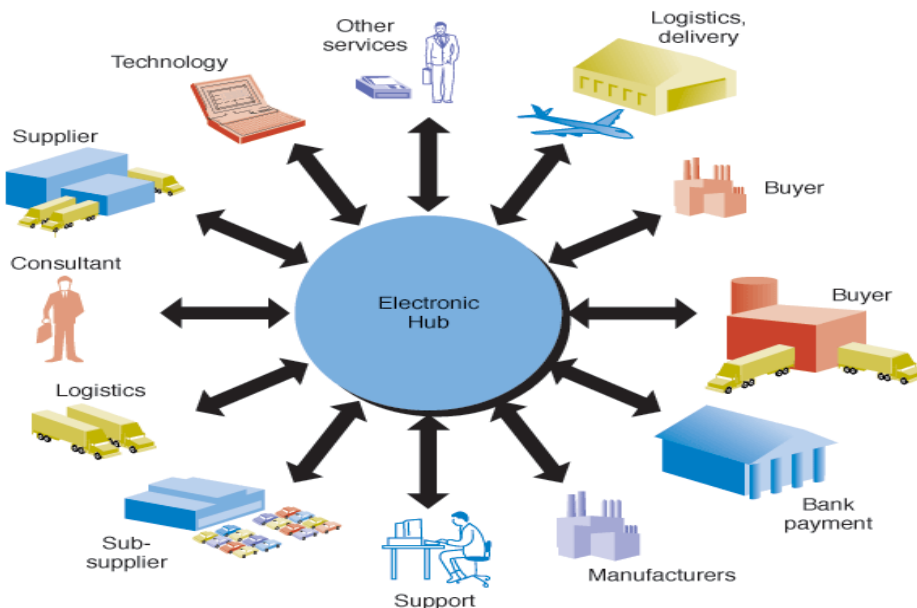
Changes in the supply chain

Exhibit 2.12a Changes in the Supply Chain



a. Traditional Intermediaries

Exhibit 2.12b Changes in the Supply Chain



b. Hub-Based Chain

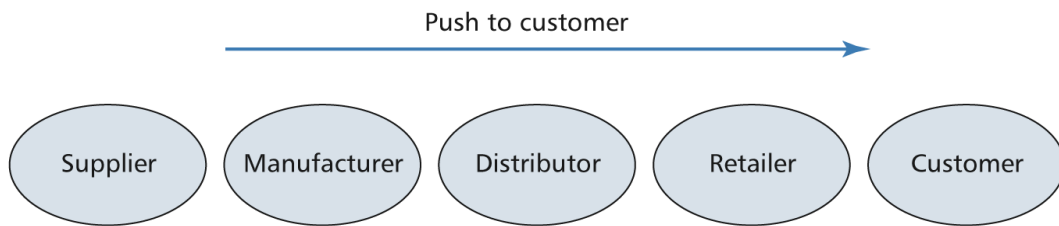
Figure 4.2 Changes in Supply chain

Logistics

'Logistics is the time-related positioning of resource, or the strategic management of the total supply-chain. The supply-chain is a sequence of events intended to satisfy a customer. It can include procurement, manufacture, distribution, and waste disposal, together with associated transport, storage and information technology'

- Logistics refer to specifically to the management of outbound logistics or inbound and outbound logistics
- **Inbound logistics:** the management of material resources entering an organization from its suppliers and other partners.
- **Outbound logistics:** the management of material resources supplied from an organization to its customers and intermediaries such as retailers and distributors

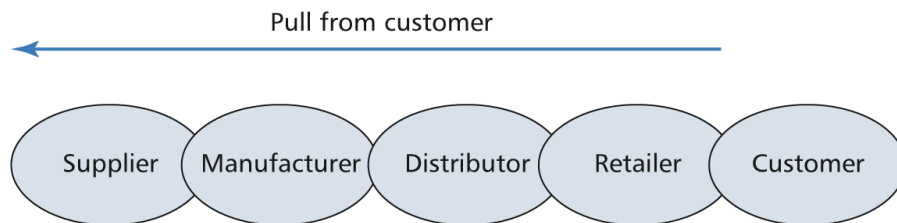
Push and pull approaches to supply chain management



Typical aim: Optimize the production process for cost and efficiency.
 Typical characteristics: Manufacturer-led new product development, poor data integration through limited use of technology, long cycle and response times, and high inventory levels.
 Use of IS: Independent data management by supply chain members. Limited use of EDI.

(a)

Figure 4.3 Push and pull approaches to supply chain management



Typical aim: Enhance product and service quality.
 Typical characteristics: Market research driven, technology used to achieve research and data integration, short cycle and response times, low inventory levels.
 Use of IS: Integrated internal systems, information sharing between supply chain members. Extensive use of EDI and e-commerce, often through B2B exchanges and intermediaries.

(b)

Figure 4.3 Push and pull approaches to supply chain management

What is the value chain?

Value Chain a model that considers how supply chain activities can add value to products and services delivered to the customers. The value chain is a model that describes different value-adding activities that connect a company's supply side with its demand side. Internal value chain within the boundaries of an organization. External value chain where activities are performed by partners.

Virtual organization: an organization which uses information and communication technology to allow it to operate without clearly defined the physical boundaries between different functions. It provides customized services by outsourcing production and other functions to third party.

Warner – VO characteristics

- Lack of physical structure: virtual organizations have little or no physical existence
- Reliance on knowledge: the lack of physical facilities and contacts means that knowledge is the key driving force of the virtual organization
- Use of communications technologies: it follows that virtual organizations tend to rely on information technology
- Mobile work: the reliance on communications technologies means that the traditional office or plant is no longer the only site where work is carried out. Increasingly, the office is wherever the worker is
- Boundaryless and inclusive: virtual companies tend to have fuzzy boundaries
- Flexible and responsive: virtual organizations can be pulled together quickly from disparate elements, used to achieve a certain business goal and then dismantled again

Options for restructuring the supply chain

As part of strategy definition for e-business, managers will consider how the structure of the supply chain can be modified .Supply chain management options are viewed as a range between internal control of the supply chain elements and external control of supply chain elements through outsourcing. The two end elements of the continuum are usually referred to as vertical integration and virtual integration.

Benefits of applying IS to SCM (B2B Company)

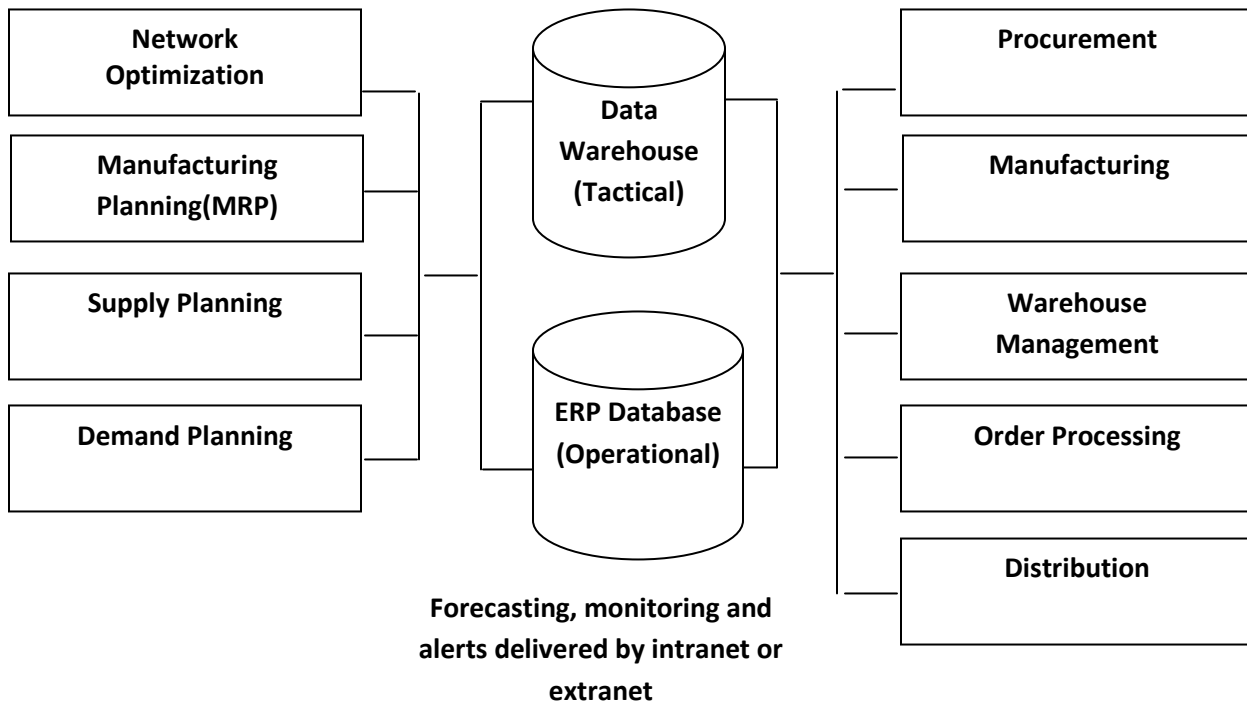
- Increased efficiency of individual processes

- Benefit: reduced cycle time and cost per order
- Reduced complexity of the supply chain
- Benefit: reduced cost of channel distribution and sale by selling
- Improved data integration between elements of the supply chain
- Benefit: a B2B company can share information with suppliers on their demand for its products to optimize the supply process
- Reduced cost through outsourcing
- Benefits: lower costs through price competition and reduced spend on manufacturing capacity and holding capacity
- Innovation
- Benefit: by offering new products or new servicing products to customer. Benefit: Better customer responsiveness

Typical IS infrastructure for SCM

Supply Chain planning System

Supply Chain execution System

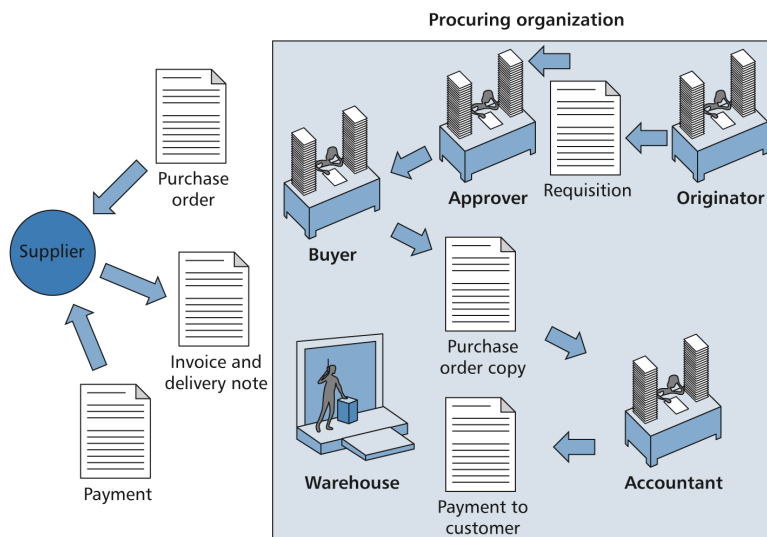


E-procurement

Table 4.1 highlights the paper-based process. It can be seen that it involves these stages:

1. The end-user of the item selects an item by conducting a search and then filling in a paper requisition form.
2. The form is sent to a buyer in the purchasing department (often after authorization by a manager, which introduces further delay).
3. The buyer then fills out an order form.
4. The form is dispatched to the supplier.
5. The item is delivered and a delivery note is reconciled with the order form.
6. Invoicing from supplier occurs.
7. Payment from buyer occurs.

Figure 4.2 Key procurement activities within an organization



What is e-procurement?

Procurement refers to all activities involved with obtaining items from a supplier this includes purchasing, but also inbound logistics such as transportation, goods-in and warehousing before the item is used.

Summary of e-procurement drivers

- Direct cost reductions are achieved through efficiencies in the process
- Process efficiencies result in less staff time spent in searching and ordering products and reconciling deliveries with invoices.
- Savings also occur due to automated validation of pre-approved spending budgets for individuals or departments, leading to fewer people processing each order, and in less time.
- Reduce the cost of physical materials such as specially printed order forms and invoices that are important to the process
- The cycle time between order and use of supplies can be reduced
- Enable greater flexibility in ordering goods from different suppliers according to best value. This is particularly true for electronic B2B marketplaces.
- E-procurement remove administrative tasks such as placing orders and reconciling deliveries and invoices with purchase orders, buyers can spend more time on value-adding activities

Risks and impacts of e-procurement

Security concerns and lack of faith in trading partners are the most significant factors holding back e-procurement. The threat of redundancy or redeployment of staff is likely to lead to resistance to the introduction of the system. There is a risk that the return on investment from introducing e-procurement may be lower than that forecast and the introduction of the e-procurement system may not pay for itself. The biggest barrier to automation of e-procurement is integration with existing financial systems

Implementing e-procurement

To introduce e-procurement the IS manager and procurement team must work together to find an IS solution that links together the different people and tasks of procurement, a Figure 4.3 shows how different types of information system cover different parts of the procurement cycle.

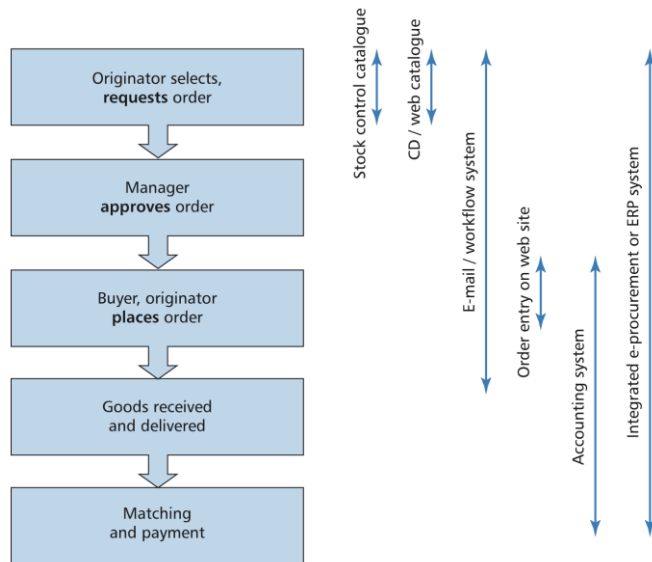


Figure 4.3 Use of different information systems for different aspects of the fulfilment cycle

E-Banking

A more developed and mature e-banking environment plays an important role in e-commerce by encouraging a shift from traditional modes of payment (i.e., cash, checks or any form of paper-based legal tender) to electronic alternatives (such as e-payment systems), thereby closing the e-commerce loop.

What are the existing practices in developing countries with respect to buy-ing and paying online?

In most developing countries, the payment schemes available for online transactions are the following:

A. Traditional Payment Methods

- **Cash-on-delivery.** Many online transactions only involve submitting purchase orders online. Payment is by cash upon the delivery of the physical goods.
- **Bank payments.** After ordering goods online, payment is made by depositing cash into the bank account of the company from which the goods were ordered. Delivery is likewise done the conventional way.

B. Electronic Payment Methods

- **Innovations affecting consumers,** include credit and debit cards, automated teller machines (ATMs), stored value cards, and e-banking.
- **Innovations enabling online commerce** are e-cash, e-checks, smart cards, and encrypted credit cards. These payment methods are not too popular in developing countries. They are employed by a few large companies in specific secured channels on a transaction basis.
- **Innovations affecting companies** pertain to payment mechanisms that banks provide their clients, including inter-bank transfers through automated clearing houses allowing payment by direct deposit.

What is an electronic payment system? Why is it important?

An electronic payment system (EPS) is a system of financial exchange between buyers and sellers in the online environment that is facilitated by a digital financial instrument (such as encrypted credit card numbers, electronic checks, or digital cash) backed by a bank, an intermediary, or by legal tender.

EPS plays an important role in e-commerce because it closes the e-commerce loop. In developing countries, the underdeveloped electronic payments system is a serious impediment to the growth of e-commerce. In these countries, entrepreneurs are not able to accept credit card payments over the Internet due to legal and business concerns. The primary issue is transaction security.

The absence or inadequacy of legal infrastructures governing the operation of e-payments is also a concern. Hence, banks with e-banking operations employ service agreements between themselves and their clients.

What is e-banking?

E-banking includes familiar and relatively mature electronically-based products in developing markets, such as telephone banking, credit cards, ATMs, and direct deposit. It also includes electronic bill payments and products mostly in the developing stage, including stored-value cards (e.g., smart cards/smart money) and Internet-based stored value products.

What is e-tailing?

E-tailing (or electronic retailing) is the selling of retail goods on the Internet. It is the most common form of business-to-consumer (B2C) transaction.

What is online publishing? What are its most common applications?

Online publishing is the process of using computer and specific types of software to combine text and graphics to produce Web-based documents such as newsletters, online magazines and databases, brochures and other promotional materials, books, and the like, with the Internet as a medium for publication.

What are the benefits and advantages of online publishing to business?

Among the benefits of using online media are low-cost universal access, the independence of time and place, and ease of distribution. These are the reasons why the Internet is regarded as an effective marketing outreach medium and is often used to enhance information service.

Privacy & Security

Cryptography

- The process of converting a message into a secret code and changing the encoded message back to regular text

Encryption

- The original conversion of a message into a secret code

❑ Digital Signature

- An encryption technique used for online financial transactions

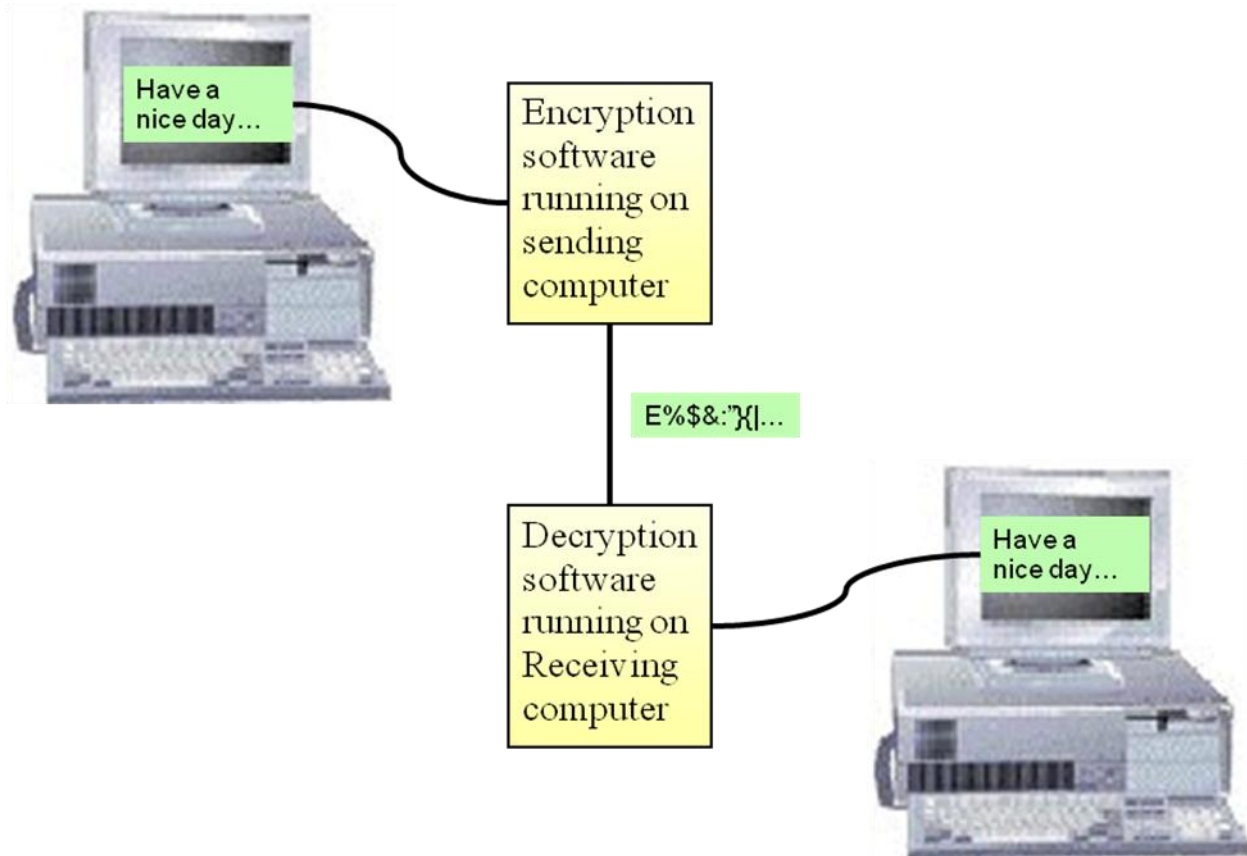


Figure 4.6 Cryptography

Firewalls

A method of preventing unauthorized access between a company's computers and the Internet (looks at the header of a packet). A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

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