Information Technology and E-Commerce
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<td>EC</td>
<td>Electronic Commerce</td>
</tr>
<tr>
<td>VAN</td>
<td>Value Added Network</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>B2B</td>
<td>Business to Business</td>
</tr>
<tr>
<td>C-Commerce</td>
<td>Collaborative Commerce</td>
</tr>
<tr>
<td>B2C</td>
<td>Business to Consumers</td>
</tr>
<tr>
<td>C2B</td>
<td>Consumers to Business</td>
</tr>
<tr>
<td>C2C</td>
<td>Consumer to Consumer</td>
</tr>
<tr>
<td>B2E</td>
<td>Business to its Employees</td>
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<tr>
<td>G2C</td>
<td>Government to Citizens</td>
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<tr>
<td>M-commerce</td>
<td>Mobile Commerce</td>
</tr>
<tr>
<td>MRO</td>
<td>Maintenance, Replacement and Operations</td>
</tr>
<tr>
<td>SFA</td>
<td>Sales Force Automation</td>
</tr>
<tr>
<td>SBU</td>
<td>Strategic Business Units</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
</tr>
<tr>
<td>PRM</td>
<td>Professional Risk Manager</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>G2B</td>
<td>Government to Business</td>
</tr>
<tr>
<td>G2G</td>
<td>Government to Government</td>
</tr>
<tr>
<td>EBT</td>
<td>Electronic Benefits Transfer</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>FTC</td>
<td>Federal Trade Commission</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
</tr>
<tr>
<td>BPR</td>
<td>Business Process Reengineering</td>
</tr>
<tr>
<td>CDSS</td>
<td>Consumer Decision Support System</td>
</tr>
<tr>
<td>CAMS</td>
<td>Contract and Management Services</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small to Medium Enterprises</td>
</tr>
<tr>
<td>MTA</td>
<td>Metropolitan Transportation Authority</td>
</tr>
</tbody>
</table>
Chapter I

Overview of E-Business and E-Commerce

Aim

The aim of this chapter is to:

• explicate definition of e-commerce
• explain types of e-commerce transactions
• explore e-commerce concepts

Objective

The objective of this chapter is to:

• enlist EC business models
• explicate benefits of e-commerce
• define scope of e-commerce

Learning outcome

At the end of this chapter, you will be able to:

• describe electronic commerce
• enlist the benefits of EC
• understand the types of EC
1.1 Definition and Concepts
The following elaborate the concepts of electronic commerce.

1.1.1 Electronic Commerce
Electronic Commerce (EC or e-commerce) describes the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the Internet. Some people view the term commerce as describing only transactions conducted between business partners. When this definition of commerce is used, some people find the term electronic commerce to be fairly narrow. Thus, many use the term e-business instead-business refers to a broader definition of EC, not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, conducting e-learning and conducting electronic transactions within an organisation. Others view e-business as the “other than buying and selling activities” on the internet, such as collaboration and intrabusiness activities.

1.1.2 Pure Versus Partial Electronic Commerce
Electronic commerce can take several forms depending on the degree of digitisation (the transformation from physical to digital) involved. The degree of digitisation can relate to (1) the product (service) sold, (2) the process, or (3) the delivery agent (or intermediary). Choi et al (1997) created a framework that explains the possible configurations of these three dimensions. A product can be physical or digital, the process can be physical or digital, and the delivery agent can be physical or digital. In traditional commerce all three dimensions are physical, and in pure EC all dimensions are digital. All other combinations include a mix of digital and physical dimensions. If there is at least one digital dimension, we consider the situation electronic commerce but only partial EC. For example, buying a shirt at Wal-Mart online or a book from amazon.com is partial EC, because the merchandise is physically delivered by FedEx. However, buying an e-book from Amazon.com or a software product from Buy.com is pure EC, because the product, its delivery, payment, and transfer agent are all done online.

1.1.3 Electronic Commerce Organisations
Pure physical organisations (corporations) are referred to as brick and mortar (or old-economy) organisations, whereas companies which are engaged only in EC, are considered virtual (or pure-play) organisations. Click and mortar (or click and brick) organisations are those that conduct some e-commerce activities, yet their primary business is done in the physical world. Gradually, many brick and mortar companies are changing to click and mortar ones (e.g., Wal-Mart Online).

1.1.4 Internet Versus Non-Internet EC
Most e-commerce is done over the internet. But EC can also be conducted on private networks, such as value-added networks (VANs, networks that add communication services to existing common carriers), on local area networks (LANs), or even on a single computerised machine. For example, buying food from a vending machine and paying with a smart card or a cell phone can be viewed as EC activity.

1.2 Types of E-Commerce Transactions
E-commerce transactions can be done between various other parties, as follows:

1.2.1 Business-to-Business (B2B)
In B2B transactions, both the sellers and the buyers are business organisations. The vast majority of EC volume is of this type.

1.2.2 Collaborative Commerce (c-commerce)
In c-commerce, business partners collaborate electronically. Such collaboration frequently occurs between and among business partners along the supply chain.

1.2.3 Business-to-Consumers (B2C)
In B2C, the sellers are organisations, and the buyers are individuals.
1.2.4 Consumers-to-Business (C2B)
In C2B, consumers make known a particular need for a product or service, and suppliers compete to provide the product or service to consumers. An example is priceline.com, where the customer names a product and the desired price, and Priceline tries to find a supplier the stated need.

1.2.5 Consumer-to-Consumer (C2C)
In C2C, an individual sells products or services to other individuals. (You will also see the term C2C used as “customer –to-customer”. The terms interchangeable, and both will be used in this book to describe individuals’ sells products and services to each other).

1.2.6 Intrabusiness (Intraorganisational) Commerce
In this case an organisation uses EC internally to improve its operations. A special case of this is known as B2E (business to its employees) EC, which was illustrated in the opening case.

1.2.7 Government-to-Citizens(G2C) and to others
In this case the government provides services to its citizens via EC technologies. Governments can do business with other governments as well as with businesses (G2B).

1.2.8 Mobile Commerce(M-Commerce)
When e-commerce is done in a wireless environment, such as using cell phones to access the internet, we call it m-commerce.

1.3 EC Business Models
Each of the above types of EC is executed in one or more business models, the method by which a company generates revenue to sustain itself. For example, in B2B one can sell from catalogs, or in auctions. The major business models of EC are summarised in table 1.1. (Note that this is an expanded version of the list of five representative models introduced in A Closer Look).

<table>
<thead>
<tr>
<th>EC Model</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Online direct marketing</td>
<td>Manufacturers or retailers sell directly to customers. Very efficient for digital products and services. Can allow for customisation.</td>
</tr>
<tr>
<td>Electronic Tendering</td>
<td>Businesses conduct online tendering, requesting quotes from suppliers. Use B2B reverse auctions mechanism.</td>
</tr>
<tr>
<td>Systems</td>
<td></td>
</tr>
<tr>
<td>Name-your-own-price</td>
<td>Customers decide how much they are willing to pay. An intermediary (e.g. Priceline.com) tries to match a provider.</td>
</tr>
<tr>
<td>Find-the-best-price</td>
<td>Customers specify a need. An intermediary (e.g. Hotwire.com) compares providers and shows the lowest price. Customer must accept the offer in a short time or may lose the deal.</td>
</tr>
<tr>
<td>Affiliate marketing</td>
<td>Vendors ask partners to place logos (or banners) on partner’s site. If customers click, come to vendors, and buy, vendors pay commission to partners.</td>
</tr>
<tr>
<td>Viral marketing</td>
<td>Spread your brand on the Net by word-of-mouth. Receivers will send your information to their friends. (Be on the watch for Viruses)</td>
</tr>
<tr>
<td>Group Purchasing (e-co-ops)</td>
<td>Aggregating the demands of small buyers to get a large volume. Then conduct tendering, or negotiate a low price.</td>
</tr>
<tr>
<td>Business Model</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Online Auctions</td>
<td>Placing auctions of various types on the internet. Very popular in C2C, but getting grounds in other types of EC</td>
</tr>
<tr>
<td>Product Customisation</td>
<td>Using the Internet to self-Configure products or services, price them, and then fulfill them quickly (build-to-order).</td>
</tr>
<tr>
<td>Electronic marketplaces and exchanges</td>
<td>Create virtual marketplaces (private or public) where transactions can be conducted in an efficient way (more information to buyers and sellers, less transaction cost).</td>
</tr>
<tr>
<td>Value – chain integrators</td>
<td>Aggregate information and package it for customers, vendors, or others in the supply chain.</td>
</tr>
<tr>
<td>Value-chain service providers</td>
<td>Provide specialised services in supply chain operations such as providing logistics or payment services.</td>
</tr>
<tr>
<td>Information brokers</td>
<td>Provide services related to EC information such as trust, content, matching buyers and sellers, evaluating vendors and products.</td>
</tr>
<tr>
<td>Battering online</td>
<td>Exchanging surplus products and/or services with the process administered completely online by an intermediary. Company receives “points” for its contribution, and the points can be used to purchase other needed items.</td>
</tr>
<tr>
<td>Deep discounters</td>
<td>Gain market share via deep discounts (e.g. Half.com). For customers who consider only price in their purchasing decisions.</td>
</tr>
<tr>
<td>Membership</td>
<td>Only members can use the services provided, including access to certain information, conducting trades, etc. (e.g. Egreetings.com)</td>
</tr>
<tr>
<td>Supply-chain Improvers</td>
<td>Restructure supply chains to hubs, or other configuration. Increase collaboration; reduce delays, and smooth supply-chain flows.</td>
</tr>
</tbody>
</table>

Table 1.1 E-Commerce business models

1.4 Brief History and Scope of EC

E-Commerce applications began in the early 1970s with such innovations as electronic transfer of funds. However, the applications were limited to large corporations and a few daring small businesses. Then came electronic data interchange (EDI), which automated routine transaction processing and extended EC to all industries.

Since the commercialisation of the internet and the introduction of the web in the early 1990s, EC activities when hundreds of dot-com companies went out of business. The shakeout lasted about three years. Since 2003, EC continues its steady progress. Today, most medium and large organisations and many small ones are practicing some EC.

1.4.1 The Scope of EC

The field of e-commerce is broadband we use Fig.1.1 to describe it. As can be seen in the figure, some of which were illustrated in the opening case about Hi-Life Corp; others will be shown throughout the book.

To execute these applications, companies need the right information, infrastructure, and support services. Fig.1.1 shows that the EC applications are supported by infrastructure and by five support areas (shown as supporting pillars)

- People: Sellers, buyers, intermediaries, information systems specialists and other employees and any other participants.
- Public policy: Legal and other policy and regulating issues, such as privacy protection and taxation that are determined by the government.
• Marketing and advertising: Like any other business, EC usually requires the support of marketing and advertising. This is especially important in B2C online transactions where the buyers and sellers usually do not know each other.
• Support Services: Many services are needed to support EC. These range from payments to order delivery and content creation.
• Business partnerships: Joint ventures, e-marketplaces, and business partnerships of various sorts are common in EC. These occur frequently throughout the supply chain (i.e., the interactions between a company and its suppliers, customers, and other partners).

The supporting infrastructure includes hardware, software, and networks, ranging from browsers to multimedia. All of these EC components require good management practices. This means that companies need to plan, organise, motivate, devise strategy, and reengineer process as needed.

### 1.5 Benefits and Limitations/ Failures of E-Commerce

Few innovations in human history encompass as many benefits to organisations, individuals, and society as does e-commerce. These benefits have just begun to materialise, but they will increase significantly as EC expands. Counterbalancing its many benefits, EC has some limitations, both technological and non-technological, which have slowed its growth and acceptance. Some have been contributing factors in the failures of many EC projects and dor-cum companies in recent years. As time passes, the limitations, especially the technical ones, will lessen or be overcome. In addition, appropriate planning can minimise the negative impact of some of them.

Despite its limitations and failures, commerce has made very rapid progress. Also, various B2B activities, e-auctions, e-government, e-learning, and some B2C activities are ballooning. As experience accumulates and technology improves, the ratio of EC benefits to cost will increase, resulting in an even greater rate of EC adoption.

### 1.6 Applications of Electronic Commerce

Following are the applications of e-commerce:
• Direct marketing
• Stocks, jobs
• Online banking
• Procurement and purchasing
• Malls
• Procurement
• Auctions
• Travel
• Online publishing
• Customer services
• Intrabusiness transactions
1.6.1 Types of Infrastructure
Following are the types of infrastructure.

1.6.1.1 Common Business Services Infrastructure
Common business service infrastructure include:
- Security smart cards or authentication
- Electronic payments
- Directories or catalogs

1.6.1.2 Messaging and Information Distribution Infrastructure
Messaging and information distribution infrastructure includes:
- EDI
- E-mail
- Hypertext transfer protocol
- Chat rooms.
1.6.1.3 Multimedia Content and Network Publishing Infrastructure
Multimedia content and Network publishing infrastructure include:
• HTML
• JAVA
• World Wide Web
• VRML

1.6.1.4 Network Infrastructure
Network infrastructure include:
• Telecom
• Cable TV
• Wireless
• Intranet
• Extranet
• Cell phones

1.6.1.5 Interfacing Infrastructure
Interfacing Infrastructure include
• The databases logistics
• Customers,
• Applications.

1.7 Benefits of E-Commerce
Following are the benefits of e-commerce.

1.7.1 To Organisations
• Expand a company’s marketplace to national and international markets. With minimal capital outlay, a company can quickly locate more customers, the best suppliers, and the most suitable business partners worldwide.
• Enables companies to procure material and services from other companies, rapidly and at less cost.
• Shortens or even eliminates marketing distribution channels, making products cheaper and vendors’ profits higher.
• Decreases (by as much as 90 percent) the cost of creating, processing, distributing, storing and retrieving information by digitising the process.
• Allows lower inventories by facilitating “pull”-type supply chain management. This allows product customisation and reduces inventory costs.
• Lowers telecommunications costs because the internet is much cheaper then value-added networks (VANs).
• Helps some small business compete against large companies.
• Enable a specialised niche market.

1.7.2 To Customers
• Frequently provides less expensive products and services by allowing consumers to conduct quick online searches and comparisons.
• Gives consumers more choices in selecting products and vendors
• Enables customers to shop or make other transactions 24 hours a day, from almost any location.
• Delivers relevant and detailed information in seconds.
• Enables consumers to get customise products, from PCs to cars, at competitive prices.
• Makes it possible for people to work and study at home.
• Makes it possible for electronic auctions that benefit buyers and sellers
• Allows consumers to interact in electronic communities and to exchange ideas and compare experiences.

1.7.3 To Society
• Enables individuals to work at home and to do less travelling, resulting in less road traffic and lower air pollution.
• Allows some merchandise to be sold at lower prices, thereby increasing people's standard of living.
• Enables people in developing countries and rural areas to enjoy products and services that are otherwise are not available. This includes opportunities to learn professions and earn college degrees, or to receive better medical care.
• Facilitates delivery of public services, such as government entitlements, reducing the cost of distribution and chance of fraud, and increasing the quality of social services, police work, health care and education.

1.8 Limitations of E-Commerce
Following are the limitations of E-commerce.

1.8.1 Technological Limitations
• Lack of universally accepted standards for quality, security and reliability
• Insufficient telecommunications bandwidth.
• Still-evolving software development tools.
• Difficulties in integrating the internet and EC applications and software with some existing (especially legacy) applications and databases.
• Need for special Web servers in addition to the network servers.
• Expensive and/or inconvenient internet accessibility for many would be users.

1.8.2 Non-technological Limitations
• Unresolved legal issues
• Lack of national and international government regulations and industry standards.
• Lack of mature methodologies for measuring benefits of and justifying EC.
• Many sellers and buyers waiting for EC to stabilise before they take part.
• Customer resistance to changing from a real to a virtual store. People do not yet sufficiently trust paperless, faceless transactions.
• Perception that EC is expensive and unsecured.
• An insufficient number (critical mass) of sellers and buyers exists for profitable EC operations.

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 book 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. According to the editor-in-chief of International Journal of Electronic Commerce, Vladimir Zwass, ‘Electronic commerce is sharing business
information, maintaining business relationships and conducting business transactions by means of telecommunications networks’. He maintains that in its purest form, electronic commerce has existed for over 40 years, originating from the electronic transmission of messages during the Berlin airlift in 1948. From this, electronic data interchange (EDI) was the next stage of e-commerce development.

In the 1960s a cooperative effort between industry groups produced a first attempt at common electronic data formats. The formats, however, were only for purchasing, transportation and finance data, and were used primarily for intra-industry transactions. It was not until the late 1970s that work began for national Electronic Data Interchange (EDI) standards, which developed well into the early 1990s. EDI is the electronic transfer of a standardised business transaction between a sender and receiver computer, over some kind of private network or value added network (VAN). Both sides would have to have the same application software and the data would be exchanged in an extremely rigorous format. In sectors such as retail, automotive, defence and heavy manufacturing, EDI was developed to integrate information across larger parts of an organisation’s value chain from design to maintenance so that manufacturers could share information with designers, maintenance and other partners and stakeholders.

Before the widespread uptake and commercial use of the Internet, the EDI system was very expensive to run mainly because of the high cost of the private networks. Thus, uptake was limited largely to cash-rich multinational corporations using their financial strength to pressure and persuade (with subsidies) smaller suppliers to implement EDI systems, often at a very high cost. By 1996 no more than 50,000 companies in Europe and 44,000 in the USA were using EDI, representing less than 1 per cent of the total number of companies in each of the respective continents. According to Zwass, electronic commerce has been re-defined by the dynamics of the Internet and traditional e-commerce is rapidly moving to the Internet. 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:

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), ecommerce and even Web-commerce have been suggested but are now very rarely used. Other terms that are used for on-line retail selling include e-tailing, virtual-stores or cyber stores. A collection of these virtual stores is sometimes gathered into a ‘virtual mall’ or ‘cybermall’.

As with e-commerce, e-business (electronic business) also has a number of different definitions and is used in a number of different contexts. One of the first to use the term was IBM, in October 1997, when it launched a campaign built around e-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 organisation. In practice, e-commerce and e-business are often used interchangeably.
1.9 E-Commerce, E-Business, its E-Cares?

Some analysts and on-line business people have decided that e-business is infinitely superior as a moniker to e-commerce. That’s misleading and distracts us from the business goals at hand. The effort to separate the E-commerce and E-business concepts appears to have been driven by marketing motives and is dreadfully thin in substance. Here’s the important thing: E-commerce, E-business or whatever else you may want to call it is a means to an end. The different names, definitions and words referred to in the previous sections are merely a sample of the glossary that has originated from marketing departments to sell a concept, the media to describe a sensational ‘new’ phenomenon, consultants to justify their fees and recommendations, and business to validate and implement the new technology. In fact there is no one definitive meaning of e-commerce or e-business that is universally established. The different terms are used to illustrate different perspectives and emphases of different people in different organisations and business sectors. Some argue that it makes little sense to have a restrictive definition for the term e-commerce since it is unlikely that there will be agreement on a single unique definition. ‘Attempting to define E-commerce or E-business is guaranteed to generate Byzantine debates with meaningless origins. It reminds me of trying to answer the following question: “If one synchronised swimmer drowns, would the others follow?” Because of this trend, it is necessary when undertaking any electronic commerce, electronic business or any other e-related project or assignment, to clearly define any term in the context and environment in which it is being used.

1.10 An E-Distinction

For the purpose of clarity, the distinction between e-commerce and ebusiness 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 organisation 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 1.2 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.
1.11 What are the Key Drivers?

It is important to identify the key drivers of e-commerce to allow a comparison between different countries. It is often claimed that e-commerce is more advanced in the USA than in Europe. These key drivers can be measured by a number of criteria that can highlight the stages of advancement of e-commerce in each of the respective countries. The criteria that can determine the level of advancement of e-commerce can be categorised as:

- **Technological factors** – The degree of advancement of the telecommunications infrastructure which provides access to the new technology for business and consumers.
- **Political factors** – including the role of government in creating government legislation, initiatives and funding to support the use and development of e-commerce and information technology.
- **Social factors** – incorporating the level and advancement in IT education and training which will enable both potential buyers and the workforce to understand and use the new technology.
- **Economic factors** – including the general wealth and commercial health of the nation and the elements that contribute to it. Since a distinction has been made in this book between e-commerce and e-business for consistency, the key drivers of e-business are also identified. These are mainly at the level of the firm and are influenced by the macro-environment and e-commerce, which include:
  - Organisational culture – attitudes to research and development (R&D); its willingness to innovate and use technology to achieve objectives.
  - Commercial benefits – in terms of cost savings and improved efficiency that impact the financial performance of the firm.
  - Skilled and committed workforce – that understands, is willing and able to implement new technologies and processes.
  - Requirements of customers and suppliers – in terms of product and service demand and supply.
  - Competition – ensuring the organisation stays ahead of or at least keeps up with competitors and industry leaders.
**Fig. 1.3 Key drivers of e-business**

(Source: http://www.sagepub.com/upm-data/9598_019964Ch1.pdf)
Summary

- Electronic Commerce (EC or e-commerce) describes the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the Internet.
- Pure physical organisations are referred to as brick and mortar organisations, whereas companies which are engaged only in EC, are considered virtual organisations.
- The supporting infrastructure includes hardware, software, and networks, ranging from browsers to multimedia.
- In B2b transactions, both the sellers and the buyers are business organisations.
- In e-commerce, business partners collaborate electronically.
- In C2C, an individual sells products or services to other individuals.
- Vendors ask partners to place logos (or banners) on partner’s site. If customers click, come to vendors, and buy, vendors pay commission to partners.
- Create virtual marketplaces (private or public) where transactions can be conducted in an efficient way.
- “Expand a company’s marketplace to national and international markets. With minimal capital outlay, a company can quickly locate more customers, the best suppliers, and the most suitable business partners worldwide” is one of the benefits of E-Commerce.

References


Recommended Reading

**Self Assessment**

1. _______ describes the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the Internet.
   a. Electronic tendering
   b. Electronic commerce
   c. Mobile commerce
   d. E-Business

2. Electronic commerce can take several forms depending on the degree of ______ involved.
   a. digitisation
   b. dimension
   c. services
   d. revenue

3. Pure physical organisations are referred to as ______ organisations.
   a. new economy
   b. reverse auction
   c. brick and mortar
   d. click and mortar

4. Which is not one of the applications of Electronic Commerce?
   a. direct marketing
   b. online banking
   c. privacy issues
   d. procurement

5. In ______ transactions, both the sellers and the buyers are business organisations.
   a. B2C
   b. C-Commerce
   c. C2B
   d. B2B

6. In ____, consumers make known a particular need for a product or service, and suppliers compete to provide the product or service to consumers.
   a. B2C
   b. C-commerce
   c. C2B
   d. B2B

7. ______ ask partners to place logos or banners on partner’s site.
   a. Customers
   b. Vendors
   c. Manufacturers
   d. Retailers
8. In online direct marketing, _____ or retailers sell directly to customers.
   a. manufacturers
   b. customers
   c. consumers
   d. vendors

9. Which one of the following is not one of the types of Infrastructure?
   a. Network Infrastructure
   b. Interfacing Infrastructure
   c. Intra network Infrastructure
   d. Common business services Infrastructure

10. In ____, an individual sells products or services to other individuals.
    a. B2B
    b. B2C
    c. C2C
    d. C2B
Chapter II
E-Commerce Mechanisms: Electronic Auctions and Bartering

Aim
The aim of this chapter is to:
- explore electronic auctions
- explain bartering
- explicate types of auctions

Objective
The objective of this chapter is to:
- define e-commerce mechanism
- explicate electronic bartering
- enlist the forward auctions

Learning outcome
At the end of this chapter, you will be able to:
- understand electronic auctions
- describe the types of auctions
- enlist electronic bartering
2.1 Introduction
The major mechanism for buying and selling on the internet is the electronic catalog. However, in order to better understand how e-commerce works, let’s first look at two common mechanisms used in its implementation: electronic auctions and bartering online.

2.2 Electronic Auctions (E-Auctions)
An auction is a market mechanism by which sellers place offers and buyer make sequential bids. The primary characteristic of auctions, whether off-line or online, is that prices are determined dynamically by competitive bid. Auctions have been an established method of commerce for generations, and they are well-suited to deal with products and services for which conventional marketing channels are ineffective or inefficient. Auctions can expedite the disposal of items that need liquidation or a quick sale. The internet provides an efficient infrastructure for executing auctions at lower administrative cost and with many more involved sellers and buyers. Individual consumers and corporations alike can participate in this rapidly growing form of e-commerce. There are several types of auctions, each with its motives and procedures. Auctions are divided here into two major types: forward auctions and reverse auctions.

2.2.1 Forward Auctions
Forward auctions are auctions that sellers use as a selling channel to many potential buyers. Usually, items are placed at sites for auction, and buyers will bid continuously for the items. The highest bidder wins the items. Seller and buyers can be individuals or businesses. The popular auction site eBay.com is a forward auction. According to Gallaugher (2002) there are two types of forward e-auctions. One is for liquidations; the other one is to increase marketing efficiency, as defined in the figure 2.1.

Liquidation Auctions:
Seek first to maximize existing channels and reduce inventory before using auction
Seek lowest price on widely available goods and services
disincentives to use auction shrink supply over time

Market Efficiency Auctions:
Prefer market format that maximizes visibility with potential buyers
Seek access to unique/rare products or services
incentives to use auction increase supply over time

Fig. 2.1 Types of forward auctions
(Source: http://www.mywbut.com)

2.2.2 Reverse Auctions
In reverse auctions, there is one buyer, usually an organisation that wants to buy a product or a service. Suppliers are invited to submit bids. Online bidding is much faster than conventional bidding, and it usually attracts many more bidders. The reverse auction is the most common auction model for large purchases (in terms of either quantities or price). Governments and large corporations frequently mandate this approach, which may provide considerable savings.
Auctions are used in B2C, B2B, C2B, e-government, and C2C commerce, and they are becoming popular in many countries. Electronic auctions started in the 1980s on private networks, but their use was limited. The Internet opens many new opportunities for e-auctions. As we have discussed, auctions can be conducted from the seller’s site, the buyer’s site, or from a third-party site. eBay, the most known third-party site, offers hundreds of thousands of different items in several types of auctions. Over 300 other major companies, including Amazon.com and DellAuction.com, offer online auctions as well.

2.2.3 Bartering
Related to auctions is electronic bartering, the exchange of goods or services without a monetary transaction. In addition to the individual-to-individual bartering ads that appear in some newsgroups, bulletin boards, and chat rooms, there are several intermediaries that arrange for corporate e-bartering (e.g., barterbrokers.com). These intermediaries try to match online partners to barter.

2.3 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 previous 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: 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 (see Fig. 2.3) Key drivers of e-business the advances in telephone and television technology and finally developed into e-marketing spawning ‘eCRM’ (customer relationship management) data mining and the like by creating new channels for direct sales and promotion 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 ‘webbased’ technology. 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. 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.
Production and operations management – the impact of on-line processing has led to reduced cycle times. It takes seconds to deliver digitised products and services electronically; similarly the time for processing orders can be reduced by more than 90 per cent from days to minutes. Production systems are integrated with finance marketing and other functional systems as well as with business partners and customers.

Example of Impact of Electronic Commerce
Intel launched their on-line business in summer 1998 when their sales shot from zero to $1 billion per month in the first month of operation. The reason for this is that they totally reengineered their processes to include small and medium-sized businesses. Previously only Intel’s larger customers were connected to them by expensive EDI networks, leaving the small and medium-sized companies sending faxes or phoning in orders or requirements. Intel concentrated on procurement and customer support for a range of their products (including computer chips and microprocessors), developing an extranet (which is the linking of a number of intranets using Internet technology with added security creating virtually private networks). By using the extranet, authorised small and medium-sized business partners could place orders, track the orders and look at product documentation on the site. The savings for Intel and their customers were large – they eliminated 45,000 faxes in a quarter to Taiwan alone – saving on time, telephone charges and fax paper. Eleven of the larger Intel companies were connected to another system which let Intel link to customer plants across the Internet to track part consumption. Production and operations management (manufacturing) – moving from mass production to demand-driven, mass customisation customer pull rather than the manufacturer push of the past.

Web-based Enterprise Resource Planning systems (ERP) can also be used to forward orders directly to designers and or production floor within seconds, thus cutting production cycle times by up to 50 per cent, especially when manufacturing plants, engineers and designers are located in different countries. In sub-assembler companies, where a product is assembled from a number of different components sourced from a number of manufacturers,
communication, collaboration and coordination are critical – so electronic bidding can yield cheaper components and having flexible and adaptable procurement systems allows fast changes at a minimum cost so inventories can be minimised and money saved. Management information systems – analysis, design and implementation of e-business systems within an organisation; issues of integration of front-end and back-end systems. Human resource management – issues of on-line recruiting, home working and ‘intrapreneurs’ working on a project by project basis replacing permanent employees. 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.

2.4 What are the Benefits of E-Commerce?

The previous sections have included discussions about what e-commerce is and its impact, but what are the benefits of e-commerce? What does it offer and why do it? The benefits of e-commerce can be seen to affect three major stakeholders: organisations, consumers and society.

2.4.1 Benefits of E-Commerce to Organisations

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 goods 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.

2.4.2 Benefits of E-Commerce to Consumers

24/7 access. Enables customers to shop or conduct other transactions hours a day, all year round from almost any location. For example, checking balances, making payments, obtaining travel and other information. In one case a pop star set up web cameras in every room in his house, so that he could check the status of his home by logging onto the Internet when he was away from home on tour. More choices. Customers not only have a whole range of products that they can choose from and 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).
Information Technology and E-Commerce

2.4.3 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 working environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly. Connects people. Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them. Facilitates delivery of public services. For example, health services available over the Internet (on-line consultation with doctors or nurses), filing taxes over the Internet through the Inland Revenue website.

2.5 What about the Limitations of E-Commerce?

There was much hype surrounding the Internet and e-commerce over the last few years of the twentieth century. Much of it promoted the Internet and e-commerce as the panacea for all ills, which raises the question, are there any limitations of e-commerce and the Internet? Isaac Newton’s 3rd Law of Motion, ‘For every action there is an equal and opposite reaction’ suggests that for all the benefits there are limitations to e-commerce. These again will be dealt with according to the three major stakeholders – organisations, consumers and society.

2.5.1 Limitations of E-Commerce to Organisations

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.

2.5.2 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 requirement of the Internet, websites and applications. Lack of security and privacy of personal data. There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data. Physical contact and relationships are replaced by electronic processes. Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings. A lack of trust because they are interacting with faceless computers.

2.5.3 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

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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.

2.6 Classifying E-Commerce

Why classify e-commerce? What does it tell us? Why is there more than one way of classifying e-commerce? Earlier in the chapter, it was pointed out that there is no one definition of e-commerce or e-business. Different associations of the terms come from people with different perspectives and it is similar with frameworks for classifying e-commerce and e-business. Academics have already drawn up a number of frameworks for classifying e-commerce but each one tends to explain it from a particular perspective.

2.6.1 A macro-environmental perspective

This framework, first developed by Kalakota and Whinston, Professors of Information Systems and prolific authors on the subject, takes a holistic view and identifies the different components of business and technology that make up e-commerce. Using the analogy of the architecture of a building illustrated in Figure 2.2, they explain how the different components fit and interact together, emphasising the relative importance of each component.

![Figure 2.2 A framework for electronic commerce](http://www.mywbut.com)
The technological foundations of e-commerce are largely hidden, but they are the base on which electronic commerce is built. Kalakota and Whinston use the analogy of a traditional transportation company to describe the complexity of the network and how the different components that make up the technology infrastructure are interlinked. The network infrastructure is like the network of roads that are interconnected and are of different widths, lengths and quality – for example, the Internet, local area networks, intranets. Network infrastructures also take different forms such as telephone wires, cables, wireless technology (such as satellite or cellular technology). The publishing infrastructure (including the World Wide Web, Web servers) can be seen as the infrastructure of vehicles and warehouses, which store and transport electronic data and multimedia content along the network. Multimedia content is created using myriad tools such as HTML and JAVA.

This content can be very different with varying degrees of complexity similar to different vehicles travelling on the roads. For example, text only, or more complex is an application, such as a computer game, containing audio, video, graphics and a programme. Messaging and information distribution infrastructure are the engines and fuel, which transport the data around the network. Once the multimedia content is created, there has to be a means of sending and retrieving this information, for example by EDI, e-mail, Hyper Text Transfer Protocol. Once content and data can be created, displayed and transmitted, supporting business services are necessary for facilitating the buying, selling and other transactions safely and reliably. For example, smart cards, authentication, electronic payment, directories/catalogues.

The next components which facilitate and enable e-commerce and which are built on the foundations of technology are: Public policy, regulations and laws that govern issues such as universal access, privacy, electronic contracts and the terms and conditions that govern e-commerce. Universal agreement of technical standards dictate the format in which electronic data is transferred over networks and is received across user interfaces, and the format in which it is stored. This is necessary so that data can travel seamlessly across different networks, where information and data can be accessed by a whole range of hardware and software such as computers, palmtops, and different kinds of browsers and document readers. The interaction of people and organisations to manage and coordinate the applications, infrastructures and businesses are all necessary to make e-commerce work. All these elements interact together to produce the most visible manifestation of e-commerce. These applications include on-line banking and financial trading; recruitment; procurement and purchasing; marketing and advertising; auctions; shopping are just a few examples. This is a particularly useful framework for managers to understand the importance of technology and business, both within the organisation and external to it, in the planning and development of any e-commerce or e-business solution.

### 2.7 Identifying Transacting Partners

Another method for classifying e-commerce is by identifying the partners directly involved in the transaction. An informal version of this framework is being loosely applied in the use of the terms business-to-business (B-to-B), business-to-consumer (B-to-C) and consumer-to-consumer (C-to-C). But what exactly does this mean? The framework that is summarised in Figure 1.5 identifies a range of relationships based on the party that initiates the transaction and the party that accepts the transaction. The party originating the e-commerce transaction also includes the facilities for initiating and fulfilling it. For example in the case of B-to-C, a business sets up a website that invites and enables consumers to buy their products and then fulfils the purchase. But the Figure 2.5 Classification of e-commerce by transaction partners consumer actually initiates the transaction by requesting and then accepting the purchase. So there are a number of exchanges that take place between the parties before the transaction is completed and fulfilled. Each of the categories identified in Figure 1.4 are described as:

#### 2.7.1 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 online).
E-procurement (also known as industry portals) where a purchasing agent can shop for supplies from vendors, request proposals, and, in some cases, bid to make a purchase at a desired price. For example the autoparts wholesaler (reliableautomotive.com); and the chemical B-to-B exchange (chemconnect.com). Information sites provide information about a particular industry for its companies and their employees. These include specialised search sites and trade and industry standards organisation sites. E.g. newmarket makers.com is a leading portal for B-to-B news. Many B-to-B sites may also fall into none or more than one of these groups.

### 2.7.2 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.

### 2.7.3 Business-to-Government (B-to-G)

The exchange of information, services and products between business organisations and government agencies online. 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.

### 2.8 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.

<table>
<thead>
<tr>
<th>TRANSACTION INITIATED AND ACCEPTED BY</th>
<th>Business</th>
<th>Consumer</th>
<th>Government</th>
<th>Peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>B to B</td>
<td>B to C</td>
<td>B to G</td>
<td>B to P</td>
</tr>
<tr>
<td>Consumer</td>
<td>C to B</td>
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<td>Peer</td>
<td>P to B</td>
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<td>P to G</td>
<td>P to P</td>
</tr>
</tbody>
</table>

**Fig. 2.3 Classification of E-Commerce by transaction partners**
(Source:http://www.mywbut.com)

### 2.9 Ecommerce and Ebusiness Developments: Global Perspectives

Despite the burst in the dot.com bubble that took place in early 2000s, as a result of unrealistic expectations and unproven business models, eCommerce is growing fast. In most developed economies there is a shift from off-line expenditure, banking and shopping to online, especially for goods and services, where information is critical and where the actual delivery of products is manageable. Consumer electronics, PCs and entertainment products (books, videos and DVDs and music) are the largest retail categories, whilst travel products and airline tickets grow at a fast pace. Jupiter forecasts that online retail spending in the USA will grow by 28% in 2003 to USD52 billion. By 2007, online retail spending will reach USD105 billion and account for 5% of all US retail spending, whilst the Internet will influence 34% of all US retail spending. Jupiter estimates that online retail will increase at an average annual growth rate of 21% between 2002 and 2007. In Europe, although the growth of the Internet population has reached its plateau level, online shoppers have rapidly increased from 36 million in 2001 to 52 million by the end of 2002. The eCommerce investments that innovative retailers have made are beginning to pay–off, as Internet users gain the confidence to start shopping online. The United Kingdom is the more mature market in terms of shopping online,
followed by Germany (Jupiter, 2003). The Internet provides unprecedented opportunities for innovative SMEs as it provides adequate tools to communicate and interact globally. In particular, SMEs that concentrate on services, such as consultants, editors, graphics designers, accountants, programmers etc are liberated to access the global marketplace regardless of their location. This has driven many companies to use the Internet to establish business-to-business transactions. However, the Internet also brings challenges for SMEs. Research demonstrates that initial investment, operational costs, communication standards, connectivity, and accessibility have a positive influence on the adoption decision. However, data-security concerns, network reliability, and bandwidth have a negative influence (Soliman, 2003). Saban (2001) proposes that strategically prepared companies and regions are in a better position to maximise their eCommerce investments than companies who are just tactically prepared.

2.10 Greek Economy Transformation and Modernisation
The post-second-world-war decline of the Greek economy is attributed to a systematic fall in investment, deterioration and inadequacy of infrastructure, low productivity and lack of technological adoption, which was generated by the lack of skills and training (Konsolas, 2002). The seven years of the dictatorship (1967-1974), which ended with the Turkish invasion to Cyprus, in combination with the international energy crisis and the increasing openness of the European and world competition in the 1980s, challenged the Greek economy’s competitiveness and raised inflation, unemployment and low growth rates (Christodoulakis and Kalyvitis, 2001). However, since the early 1990s Greece has been going through a major transformation that affected its economy, politics and government due to several reasons, including: European Union membership and investment, political stability, internationalisation and gradual rationalisation of both the public and private sectors contributed towards this development (Economist, 2002; Papademos, 2002).

Regional development and Community Support Framework funds by the European Union enabled the Greek government to invest in major infrastructure. In addition, a number of major public works were initiated for the Athens 2004 Olympic Games. These major investments, in combination with joining the European Economic and Monetary Union (EMU) in January 2001 and adopting the euro forced the Greek economy, Government and politics, to converge with other European countries (Business Intelligence Report 2001; Dalamagas, 2000). The GDP rate of growth exceeded 4% in both 2000 and 2001, well above the European average. The growth rates of the Greek economy owe their rapid increase to falling interest rates and increases in private sector financing (Ministry of Economics, 2002). Greece is a country without heavy industry. Hence, it concentrates its efforts to the production and export of special products of industry, agriculture, tourism and services. The industry continues its modernisation, especially in some sectors such as cement, aluminium products, textile, food-beverages, construction as well as tourism and hospitality. A number of sources of competitive advantage can be identified and exploited further for the development of the economy (Konsolas, 2002). Until recently the Greek private sector has almost exclusively been characterised by SMEs and mainly micro enterprises.

The opening up of the borders with the European Union however has introduced larger organisations investing in Greek enterprises or going through mergers and acquisitions (Spanos et al, 2001; Makridakis, et al, 1997). Nevertheless the vast majority of the local enterprises are small and family owned. Voudouris et al, (2000) have identified that successful Greek SMEs take advantage of a number of success factors, including: intense specialisation in narrowly defined market segments; commitment to customer service; innovative culture and adaptation to new technologies; strong leadership and a healthy organisational climate.

2.11 Greece, E-Business, E-Commerce and the Information Society
Technology adoption in Greece has always been problematic in both private and public organisations (Cohen, 2001; Vlahos et al 1995; Tatsiopoulos, et al, 2002). The Internet utilisation in Greece is limited, particularly by micro and smaller enterprises. Medium and larger organisations inevitably use more technological solutions for their operations and have adopted the Internet widely. A number of Greek portals have also emerged recently, including: in.gr, yahoo.gr, otenet.gr and flash.gr focusing on news and telecommunication products. Many large Greek businesses (more than 500 employees) have already adopted eCommerce and demonstrated that: An average of 38% of large companies use electronic commerce practices; 12.5% integrated to their business and the rest 25.5% are opportunistic.47% of the companies are planning to adopt electronic commerce, while 33% of those are planning to do so within the
next year. Some sectors in the Greek market are more advanced than others. Naturally the IT sector uses integrated eCommerce practices by 22% (against 12.5% of the average) and 58% in total (integrated and opportunistic use). Retailing, financial, mass media, mobile telephony are preparing for integrating their services fully and maximising their electronic commerce adoption. (Papazafeiropoulou et al, 2001) The public sector utilisation of the Internet is in its infancy though. Apart from the TAXIS systems, which gives taxpayers the possibility to submit their VAT declarations and to pay their debts electronically, there are little other established eGovernment initiatives. A number of emerging projects are supported by the European Union.

Gradually all the official organisations will develop a web site, including the Prime Minister (www.primeminister.gr) with links to all ministries and public organisations. In 2002, the government published an Information Society White Paper and developed a comprehensive programme to penetrate all levels of government. This programme aims to use ICTs as a tool for an open and effective government and for supporting competitiveness (Papazafeiropoulou et al, 2002). It also aims to use ICTs to improve quality of life for citizens, to enhance health, transport and environmental services, and to promote the Greek cultural heritage language. The government also follows the eEurope initiatives and participates in European Union projects for the digitisation of the public sector (Information Society, 2002). The theoretical context of diffusion of innovation, as introduced by Rogers (1995, 1976) can also be observed at the macro/national level in Greece. The vast majority of the players are either at the Laggard or Late Majority adoption stages. Only few innovative players are on early adoption stage. Greece as a whole therefore is a late adopter and ideally should learn from mistakes by other nations and take advantage to advance faster. Failure to do will have major implications for its collective competitiveness.

2.12 Internet Penetration and E-Commerce: Consumption/Demand Side

The dynamic nature of the Internet prevents research organisations from illustrating accurate statistics. It is more important therefore to observe trends and relationships in these figures, rather than absolute numbers. The Internet revolutionises consumer choice and service-delivery processes. Increasingly customers have become more sophisticated and discerning, experiencing high levels of service. Consumers in developed countries increasingly rely heavily on electronic media to obtain information about products and services, and to communicate their needs and wishes to suppliers rapidly. They become demanding, requesting high quality products as well as value for money and time. The level of online penetration in Greece and globally determine the level of eCommerce, as it is consumer demand that motivates organisations to develop their online presence and to instigate online transactions. Global indicators illustrate the level of potential international demand for exports and the key markets. Greek indicators can demonstrate the diffusion of ICTs in society and therefore the ability of consumers, employees and organisations to appreciate the potential of technology.

2.13 Worldwide Internet Penetration

There has been a plethora of statistics estimating how many people are online throughout the world. However, most of these statistics are rough estimates at best. Nua.com is an authoritative online source for information on Internet demographics and trends. On September 2002 they estimated that the total number of people online was 605 million people. According to a survey conducted by the Meta Group, the highest Internet ‘maturity’ level and the highest eCommerce development potential is found in the countries with mature economies, such as United-States, Canada, the Netherlands, Finland, Iceland, Sweden, Denmark, Ireland, New Zealand and Australia (Carlton, 2001). The Meta group based its different criteria on the number of online financial transactions that were generated, the education level of the populations concerned and also the technological sophistication of said countries. The survey made a clear distinction between northern and southern European countries, indicating that counties such as Great Britain, Ireland and Germany have an Internet potential that proves much higher than countries such as Spain, Portugal or Greece (Carlton, 2001). This is due to their higher levels of technological sophistication as well as to computer ownership and Internet connections.
Summary

- The major mechanism for buying and selling on the internet is the electronic catalog.
- An auction is a market mechanism by which sellers place offers and buyer make sequential bids.
- Auctions can expedite the disposal of items that need liquidation or a quick sale.
- The internet provides an efficient infrastructure for executing auctions at lower administrative cost and with many more involved sellers and buyers.
- Auctions are divided here into two major types: forward auctions and reverse auctions.
  - Forward auctions are auctions that sellers use as a selling channel to many potential buyers.
  - In reverse auctions, there is one buyer, usually an organisation that wants to buy a product or a service.
- The Internet opens many new opportunities for e-auctions.
- Related to auctions is electronic bartering, the exchange of goods or services without a monetary transaction.
- According to a survey conducted by the Meta Group, the highest Internet ‘maturity’ level and the highest eCommerce development potential is found in the countries with mature economies, such as United-States, Canada, the Netherlands, Finland, Iceland, Sweden, Denmark, Ireland, New Zealand and Australia (Carlton, 2001).
- The Meta group based its different criteria on the number of online financial transactions that were generated, the education level of the populations concerned and also the technological sophistication of said countries.
- A number of emerging projects are supported by the European Union.
- Gradually all the official organisations will develop a web site, including the Prime Minister (www.prime minister.gr) with links to all ministries and public organisations.
- In 2002, the government published an Information Society White Paper and developed a comprehensive programme to penetrate all levels of government.
- This programme aims to use ICTs as a tool for an open and effective government and for supporting competitiveness (Papazafeiropoulou et al, 2002).
- It also aims to use ICTs to improve quality of life for citizens, to enhance health, transport and environmental services, and to promote the Greek cultural heritage language.

References

Recommended Reading

Self Assessment

1. The major mechanism for buying and selling on the internet is the electronic _______.
   a. catalog
   b. commerce
   c. bartering
   d. auction

2. __________ is a market mechanism by which sellers place offers and buyer make sequential bids.
   a. Bartering
   b. Auction
   c. Commerce
   d. Catalog

3. _______ can expedite the disposal of items that need liquidation or a quick sale.
   a. Bartering
   b. Commerce
   c. Catalog
   d. Auction

4. _______ auctions are auctions that sellers use as a selling channel to many potential buyers.
   a. Bartering
   b. Commerce
   c. Forward
   d. Reverse

5. There are _____ types of forward e-auctions.
   a. three
   b. four
   c. two
   d. five

6. In _______ auctions, there is one buyer, usually an organisation that wants to buy a product or a service.
   a. Bartering
   b. Commerce
   c. Forward
   d. Reverse

7. Electronic auctions started in the _____s on private networks, but their use was limited.
   a. 1980
   b. 1990
   c. 2000
   d. 2010
8. The __________ opens many new opportunities for e-auctions.
   a. extranet
   b. intranet
   c. internet
   d. network

9. Related to _______ is electronic bartering, the exchange of goods or services without a monetary transaction.
   a. commerce
   b. B2B
   c. auctions
   d. retailing

10. There are several intermediaries that arrange for corporate ____________.
    a. e-commerce
    b. e-bartering
    c. e-marketing
    d. e-tendering
Chapter III
Business to Consumer Applications

Aim
The aim of this chapter is to:
- explain electronic retailing
- elucidate e-tailing essentials
- explore issues in e-tailing

Objective
The objective of this chapter is to:
- define services industries online
- explicate retailing in storefronts and malls
- enlist online job market

Learning outcome
At the end of this chapter, you will be able to:
- describe applications of b2c
- understand e-tailing
- recognise cyber banking(applications)
3.1 Introduction

Forrester Research Institute, the Gartner Group, and others predict that online B2C will be in the range of $300 to $800 billion in the year 2004, up from $515 million in 1996. For 2004 the total of B2C and B2B is estimated to be in the range of $3.5 billion to $8 billion (depending on the estimator and their definitions of what they measure). Here we will look at some of the major categories of B2C applications.

3.2 Electronic Retailing: Storefronts and Malls

For generations home shopping from catalogs has flourished, and television shopping channels have been attracting millions of shoppers for more than two decades. However, these methods have drawbacks. The drawbacks are listed below:

- Both methods can be expensive
- Paper catalogs are sometimes not up to date
- Many people are troubled by the waste of paper used in catalogs that just get tossed out
- Television shopping is limited to what is shown on the screen at any given time.

Shopping online offers an alternative to catalog and television shopping that appeals to many consumers. Like any mail-order shopping experience-commerce enables you to buy from home, and to do so 24 hours a day, 7 days a week. However, EC overcomes some of the limitations of the other forms of home shopping. It offers a wide variety of products and services, including the most unique items, often at lower prices. Furthermore, within seconds, shoppers can get very detailed information on products and can easily search for and compare competitors’ products and prices. Finally, using the internet, buyers can find hundreds of thousands of sellers. Electronic retailing (e-tailing) is the direct sale of products through electronic catalog and/or auctions.

Both goods and services are sold online. Goods that are bought most often online are computers and computer-related items, office supplies, books and magazines, CDs, cassettes, movies and videos, clothing and shoes, toys, and food. Services that are bought most often online include entertainment, travel services, stocks and bonds trading, electronic banking, insurance, and job matching. Directories and hyperlinks from other Websites and intelligent search agents help buyers find the best stores and products to match their needs. Two shopping locations online are electronic storefronts and electronic malls.

3.2.1 Electronic Storefronts

Hundreds of thousands of solo storefronts can be found on the internet, each with its own internet name and EC portal. Called electronic storefronts, they may be an extension of physical stores such as Home Depot, The sharper Image, or Wal-Mart. Or, they may be new businesses started by entrepreneurs who saw a niche on the web, such as Amazon.com, CDNow, UVine.co, and Restaurant.com and Alloy.com. Besides being used by retailers, such as Officedepot.com, storefronts also are used by manufacturers, such as Dell.com. Retailers’ and manufacturers’ storefronts may sell to individuals and/or to organisations. There are two types of storefronts, general and specialised. The specialised store sells one or a few products (e.g., flowers, wines, or dog toys). The general storefronts sell many products.

3.2.2 Electronic Malls

An electronic mall, also known as a cybermall or e-mall, is a collection of individual shops under one internet address. The basic idea of an electronic mall is the same as that of a regular shopping mall—to provide a one-stop shopping place that offers many products and services. Representative Cybermalls are Downtown Anywhere (da.awa.com), Cactus Hill Handcrafters Mall (cactushill.com), America’s choice Mall (mall choisemall.com), and Shopping 2000 (shopping2000.com). A unique e-mall is 2sure.com, which specialises in services (financial, legal, etc.) but also sells computers and other electronic products, as well as provides price comparisons. Two types of malls exist. First, there are referral malls, such as Hawaii.com. You cannot buy in such a mall, but instead you are transferred to a participating storefront.
In the second, more traditional type of mall, such as at store.yahoo.com, you can actually make a purchase. At this type of mall, you might shop from a variety of stores, but are able to make only one purchase transaction at the end; an electronic shopping cart enables you to gather items from various vendors and pay for them all together in one transaction. (The mall organiser, such as Yahoo, takes a commission from the sellers for this service.) Each cybermall may include thousands of vendors. For example, shopping yahoo.com and eshop.msn.com include tens of thousands of products from thousands of vendors. As is true for vendors that locate in a physical shopping mall, a vendor that locates in an e-mail gives up a certain amount of independence. Its success depends on the popularity of the mall, as well as on its own marketing efforts. On the other hand, malls generate streams of prospective customers who otherwise might never have stopped by the store.

### 3.3 ETailing: the Essentials

The concept of retailing and e-tailing implies sales of goods and/or services to individual customers. However, the distinction between B2C and B2B e-commerce is not always clear cut. For example, Amazon.com sells mostly to individuals (B2C), but it also sells to corporations (B2B). Amazon.com’s rival, Barnes & Noble Online (bn.com), has a special division that caters only to business customers. Walmart.com sells to both individuals and businesses (via Sam’s Club). Dell.com sells its computers to both consumers and businesses, as does Staples.com and some insurance sites sell both to individuals and corporations. There are several models of B2C. One of the most interesting properties of these models is the ability to offer customised products at a reasonable price and fairly fast (as done by Dell Computer). Many sites (e.g., nike.com and lego.com) offer product self-configuration from their B2C portals. (For more on build-to-order and its impact on e-commerce, the most well known B2C site is Amazon.com.

### 3.4 Issues in E-Tailing

The following are the major issues faced by e-tailers that may be handled and supported by IT tools:

#### 3.4.1 Resolving Channel Conflict

If a seller is a click and mortar company, such as Levi’s or GM, it may face a conflict with its regular distributors when it sells directly online. Known as channel conflict, this situation can alienate the regular distributors. Channel conflict has forced some companies (e.g. Lego.com) to limit their B2C efforts; others (e.g. some automotive companies) have decided not to sell direct online. An alternative approach is to try to collaborate in some way with the existing distributors whose services may be restructured. For example, an auto company could allow customers to configure a car online, but require that the car be picked up from a dealer, where customers would arrange financing, warranties, and service. IT tools can facilitate resolution of channel conflict, for example by using a group DSS.

#### 3.4.2 Resolving Conflicts with Click and Mortar Organisations

When an established company decides to sell direct online, on a large scale, it may create a conflict within its existing operations. Conflicts may arise in areas such as pricing of products and services, allocation of resources (e.g. advertising budget) and logistics services provided by the offline activities to the online activities (e.g. handling of returns of items bought online). As a result of these conflicts, some companies have completely separated the “clicks” (the online portion of the organisation) from the “mortars” or “bricks” (the traditional brick and mortar part of the organisation). Such separation may increase expenses and reduce the synergy between the two. The decisions about how to organise the online and offline operations and whether or not to separate them can be facilitated by IT tools. In addition, group DSS can be used to resolve conflicts.

#### 3.4.3 Organising Order Fulfillment and Logistics

E-tailers face a difficult problem of how to ship very small quantities to a large number of buyers. This can be a difficult undertaking, especially when returned items need to be handled. IT-supported decision models can help with scheduling, routing, shipments, inventory management and other logistics-related decisions.
3.4.4 Determining Viability and Risk of Online E-tailers

Many pure online e-tailers folded in 2000-2002, the result of problems with customer acquisition, order fulfillment, and demand forecasting. Online competition, especially in commodity-type products such as CDs, toys, books, or groceries, became fierce, due to the ease of entry to the market place. So a problem most young e-tailers face is to determine how long to operate while you are still losing money and how to finance the losses. In deciding on new EC initiatives, or on an entire dot –com company, a risk analysis is needed. A DSS modeling can be helpful in such cases.

3.4.5 Identifying Appropriate Revenue Models

Many dot-com companies were selling goods at or below cost, with the objective of attracting many customers and advertisers to their sites. One early dot-com model was to generate enough revenue from advertising to keep the business afloat until the customer base reached critical mass. This model did not work. Too many dot com companies were competing for too few advertising dollars, which went mainly to a small number of well-known sites such as AOL and Yahoo. In addition; there was a “chicken-and –egg” problem: Sites could not get advertisers to come if they did not have enough visitors. To succeed in EC, it is necessary to identify appropriate revenue models.

3.5 Service Industries Online

Selling books, toys, computers, and most other products on the internet may reduce vendors’ selling costs by 20 to 40 percent. Further reduction is difficult to achieve because the products must be delivered physically. Only a few products (such as buying an airline ticket or buying stocks or insurance online, can be done 100 percent electronically, with considerable cost reduction potential. Therefore, delivering services online is growing very rapidly, with millions of new customers added annually. Indeed, in many ways e-commerce is now simply a part of traditional commerce and like the addition of credit card payment capabilities a generation ago, many people expect companies to offer some form of e-commerce. We have taken a quick look here at the leading online service industries: banking, trading of securities (stocks, bonds), job matching, travel services and real estate.

3.5.1 Cyber Banking

Electronic banking, also known as cyber banking and online banking, includes various banking activities conducted from home, a business, or on the road instead of at a physical bank location. Electronic banking has capabilities ranging from paying bills to applying for a loan. It saves time and is convenient for customers. For banks, it offers an inexpensive alternative to branch banking (for example, about 2 cents cost per transaction versus $1.07 at a physical branch) and a chance to enlist remote customers. Many banks now offer online banking, and some use EC as a major competitive strategy. Electronic banking offers several of the benefits of EC such as expanding the customer base and saving the cost of paper transactions. In addition to regular banks with added online services, we are seeing the emergence of virtual banks, dedicated solely to internet transactions, such as netbank.com.

3.5.1.1 International and Multiple –Currency Banking

International banking and the ability to handle in multiple currencies are critical for international trade. Although some international retail purchasing can be done by giving a credit card number, other transactions may require cross-border banking support. For example, Hong Kong and Shanghai Bank (hsbc.com.hk) has developed a special system (called Hexagon) to provide electronic banking in 60 countries. Using this system, the bank has leveraged its reputation and infrastructure in the developing economies of Asia, to rapidly become a major international bank without developing an extensive new branch network. Transfers of electronic funds and electronic letters of credit are other important services in international banking. An example of support for EC global trade is provided by Trade Card (tradecard.com), which is done is conjunction with Master card. Banks and companies such as Oanda also provide currency conversion of over 160 currencies. International foreign –currency traders can be assisted by many other online services (financialsupermarket.com and foreign-trade.com).
3.5.2 Online Securities Trading

It is estimated that by the year 2004, about 35 million people in the United States will be using computers to trade stocks, bonds, and other financial instruments. In Korea, more than half of stock traders are using the Internet for that purpose. Why? Because it makes a lot of dollars and “sense”: An online trade typically costs the trader between $3 and $15, compared to an average fee of $100 from a full service broker and $25 from a discount broker. There is no waiting on busy telephone lines. Furthermore, the chance of making mistakes is small because online trading does away with oral communication with a securities broker in a frequently very noisy physical environment. Orders can be placed from anywhere, anytime, even from your cell phone. Investors can find on the Web a considerable amount of information regarding investing in a specific company or in a mutual fund. (e.g. money.cnn.com, Bloomberg.com).

How does online trading work? Let’s say you have an account with Charles Schwab. You access Schwab’s Web site (schwab.com) from your PC or your Internet-enabled mobile device, enter your account number and password to access your personalized Web page, and then click on “Stock trading”. Using a menu, You enter the details of your order (buy or sell, margin or cash, price limit, market order, etc.). The computer tells you the current “ask” and “bid” prices, much as a broker would do on the telephone, and you can approve or reject the transaction. Some well-known companies offer only online trading are E*Trade, Ameritrade and Suretrade.

However, both online banking and securities trading require tight security. Otherwise, your money may be at risk. Here is what happened in Korea on August 23, 2002: According to news items (Korean Times, August 24, 2002), an unknown criminal managed to get an account number and a password of a large investor in Korea (Hyundai Investment). Sitting in an Internet café, the criminal placed an order with the company that managed the investment, Daewoo Securities, to buy five million shares of Delta Information Communication. Within 90 seconds 2.7 million shares were sold by 100 sellers, at a much higher than normal price. When the fake order was discovered and the news broke out, the price of the shares spiraled down. Daewoo securities ended with 2.7 million unwanted shares. Some analysts have suggested that one or more sellers hired the hacker so they could sell at a high price. Whatever the motive; Daewoo lost a huge amount of money. Most online bank stock and traders use only ID numbers and passwords. This may not be secure enough.

3.5.3 The Online Job Market

The Internet offers a perfect environment for job seekers and for companies searching for hard-to-find employees. The online job market is especially effective for technology-oriented jobs. However, there are thousands of companies and government agencies that advertise available positions of all types of jobs, accept resumes, and take applications via the Internet.

The online job market is used by the following:

3.5.3.1 Job Seekers

Job Seekers can reply to employment ads online. Or they can take the initiative and place resumes on their own home pages or on others’ web sites send messages to members of newsgroups asking for referrals, and use recruiting firms such as Career Mosaic (careermosaic.com), Job Center (jobcenter.com), and Monster Board (monster.com). For entry-level jobs and internships for newly minted graduates, job seekers can use jobdirect.com. Need help writing your resume? Try resume-link.com or jobweb.com. Finally, if you want to know if you are underpaid or how much you can get if you relocate to another city, consult wageweb.com.

3.5.3.2 Job Providers

Many organisations advertise openings on their Web site. Others use sites ranging from Yahoo! to bulletin boards of recruiting firms. In many countries governments must advertise openings on the Internet.
3.5.3.3 Recruiting firms

Hundreds of job-placement brokers and related services are active on the Web. They use their own Web pages to post available job descriptions and advertise their services in electronic malls and in others’ Websites. Recruiters use newsgroups, online forums, bulletin boards, and chat rooms. Job-finding brokers help candidates write their resumes and get the most exposure. Matching of candidates and jobs is done by companies such as Peopleclick.com. Due to the large number of job market resources available on the Internet; it is too expensive and time-consuming to evaluate them manually. Resumix (resumix.com) can help.

3.5.4 Travel Services

The Internet is an ideal place to plan, explore, and economically arrange almost any trip. Potential savings are available through special sales, comparisons, use of auctions, and the elimination of travel agents. Examples of comprehensive travel online services are Expedia.com, Travelocity.com, and Orbitz.com. Services are also provided online by all major airline vacation services, large conventional travel agencies, car rental agencies, hotels (e.g., hotels.com), and tour companies. Online travel services allow you to purchase airline tickets, reserve hotel rooms, and rent cars. Most sites also support an itinerary-based interface, including a fare-tracker feature that sends you e-mail messages about low-cost flights to your favorite destinations or from your home city. Finally, Priceline.com allows you to set a price you are willing to pay for an airline ticket or hotel accommodations and Priceline then attempts to find a vendor that will match your price. A similar service offered by Hotwire.com tries to find the lowest available price for you.

3.5.5 Real Estate

Real estate transactions are an ideal area for e-commerce, for the following reasons. First, you can view many properties on the screen, saving time for you and the broker. Second, you can sort and organise properties according to your preferences and decision criteria, and can preview the exterior and interior designs of the properties, shortening the search process. Finally, you can find detailed information about the properties and frequently get even more detail than brokers will provide.

In some locations brokers allow the use of real estate databases only from their offices, but considerable information is now available on the Internet. For example, Realtor.com allows you to search a database of over 1.2 million homes across the United States. The database is composed of local “multiple listings” of all available properties and properties just sold, in hundreds of locations. Those who are looking for an apartment can try Apartments.com. In another real estate application, homebuilders use three-dimensional floor plans for potential home buyers on their Web sites. They use “virtual models” that enable buyers to “walk through” mockups of homes.

3.6 What are the Barriers to E-Commerce?

The drivers of e-commerce were identified conversely; there are also barriers to the growth and development of e-commerce. Numerous reports and surveys identify the different kinds of barriers, and many of them focus on security as being one of the largest inhibitors to and problems for e-commerce. CommerceNet20 (a non-profit consortium of business, technology, academic and government leaders who develop and implement e-commerce technology and business practice) conducts an annual time series survey of visitors to the Commerce Net website, to identify the barriers to e-commerce. Different nations are at different stages of development of e-commerce and as such the issues that are relevant to one nation may not be relevant to another. Similarly, the issues that are relevant to the type of organisation also differ. For example, large organisations have different needs and infrastructures to SMEs. The study of 1,000 visitors divides the findings into the perspectives of three different types of organisation: large B-to-B organisations; SME B-to-B enterprises; and B-to-C retailers. The study also divides the results into US and non-US based. This is particularly useful because the USA is at a more advanced stage in the e-commerce adoption lifecycle than the majority of other nations and so can be used as a predictor of things to come or as a warning to prevent followers experiencing similar pitfalls and problems.
The findings summarised show that barriers to ecommerce can be seen as being relevant both to the macro-environment and the micro-environment level of the firm itself. Overall, all three kinds of organisations have similar barriers but with different emphases. Internet infrastructure deals with issues such as availability and quality of the Internet in terms of speed and reliability. This barrier is of particular concern to SMEs and B-to-C organisations, since their business relies more on general consumers, and so the ease with which the general public can connect to the Internet has a direct impact on their Web-based business. Technology infrastructure deals with issues of standardisation of systems and applications, which is a particular concern for larger organisations who want to implement solutions such as value chain integration and e-supply chain management. Security in its broadest term is one of the most significant barriers to e-commerce both within the organisation and external to it. Identified as Security and Encryption; Trust and Risk; User Authentication and Lack of Public Key Infrastructure; Fraud and Risk of Loss it relates to the development of a broader security infrastructure and it also relates to the kinds of measures.

Organisations can take to improve security. Although security is a major concern for all types of organisations, it is a dominant concern for companies in the B-to-C e-commerce retail sector, since it reflects the concerns and perceptions of users and potential customers that are conducting financial transactions on-line. The commercial infrastructure relates to issues such as international trade agreements, taxation laws and other legal agreements that facilitate all kinds of on-line trading and so is a barrier relevant to all types of organisations. At the level of the organisation itself, there are many barriers to e-commerce that relate to issues of organisational structure and culture.

These are most significant for large organisations that have to deal with change management issues. For example, there is a sense that much work still needs to be done to design the right organisational structure and corporate culture that will promote and be able to maximise the benefits of widespread e-commerce applications. Additionally, there is a perception that business partners face similar organisational and technological problems, which raises the barrier further. Another significant issue was found to be the lack of qualified personnel to implement in-house and third-party e-commerce systems. For SMEs, this is a particularly strong concern because internally they do not have sufficient resources to attract and maintain their own support staff to develop a sophisticated technology infrastructure. With regards to third parties, the qualified personnel tended to work for larger organisations, which were more concerned about serving the more lucrative larger clients than SMEs.
One respondent noted that, ‘small firms get lots of vague and general exhortations to go “online” but find it very difficult to get reliable, well informed advice and also to get honest, effective support from a Web services provider’. Another major barrier to the development of e-commerce was a lack of proven business models. This is a reflection of the instability of the whole dot com phenomenon, and the poor performance of the dot coms on the world’s stock exchanges in late 1999 and early 2000 after the dizzy heights to which dot com companies rose in 1998–9. A financially successful business model has yet to emerge into the business world’s limelight as the model to follow. Interoperability of systems is identified as one of the major barriers for large US-based B-to-B corporations. This refers specifically to implementation and compatibility problems of integrating new e-commerce applications with existing legacy systems and resources within organisations. This problem also extends to interacting with systems of business partners and stakeholders.

The fact that the USA is ahead in the adoption lifecycle of e-commerce suggests that these issues will become more prevalent in other nations that are further behind in the lifecycle. Thus there is a need for standards to be introduced to overcome issue of incompatibility and interoperability. For SMEs that have fewer legacy systems, the issues are more a matter of interoperability with partner systems. Many of the top barriers recognised by respondents in 2000 were also top concerns in 1999, especially security. This illustrates a consistency and reliability of the measures being taken by the survey and also underlines the fact that they are not being addressed adequately. The two major changes were increased concern over lack of business models and lack of qualified personnel. This reflects the downturn in the fortunes of the dot coms and also illustrates the increasing skills shortages problems to deal with the increasing IT implementation and maintenance problems. These issues will be dealt with in the remaining chapters of this book.

3.7 Common Issues

There is no one commonly agreed definition of e-commerce or e-business. Thus, there is a need to clarify terms being used and explain the context in which they are being applied. E-commerce has an impact on three major stakeholders, namely society, organisations and customers (or consumers). There are a number of advantages, which include cost savings, increased efficiency, customisation and global marketplaces. There are also limitations arising from e-commerce which apply to each of the stakeholders. These include information overload, reliability and security issues, cost of access, social divisions and difficulties in policing the Internet. Successful e-commerce involves understanding the limitations and minimising the negative impact while at the same time maximising the benefits. In order to aid general understanding of e-commerce a number of frameworks have been introduced to explore it from different perspectives: the macro-environment, which identifies the interaction of technology, people, organisations, policy and technical standards working together to enable e-commerce; the different participants and the kind of e-commerce transactions that occur between them; and the degree of digitisation that analyses product, processes and delivery agents in an organisation. These frameworks help identify the elements of e-commerce and how businesses can better understand e-commerce and its practical applicability.

3.8 Discussion and Stakeholders Analysis

The analysis clearly demonstrates that both demand/consumption and supply/production in Greece are in their early stages of their ICT and eCommerce adoption circle. There is, however, evidence that demonstrates that the growth of the ICT and eCommerce usage is greater than in mature European markets and hence the digital divide gap is being reduced. To the degree that ICT adoption determines national competitiveness, the Greek economy needs to move faster to explore the entire benefits of the ICT and eCommerce opportunities. Stakeholders are organisations, groups, or individuals that have a major interest on the process and also include both those who affect and those who are affected by the developments (Wheeler, 1997). Some of the stakeholders have more influence, depending on their resources and administrative power (Vincent, 1990). Stakeholder analysis illustrates the different groups of people who can influence the development of eCommerce and ICTs in Greece. This allows a better understanding of the key participants in the process, their contribution and potential influence. Four principle stakeholders have been identified in the paper, namely the Greek public/consumers, suppliers/investors, governmental agencies/policy makers and international organisations.
The Greek public/consumers effectively determine the level of demand for eCommerce services. Hitherto, eCommerce in Greece is limited in comparison to northern European countries due to a number of reasons, including:

- low level of ICT usage;
- lack of credit cards;
- domination of English as the web and ICT languages;
- and purchasing culture based on personal relationships and networks.

Currently therefore, within the innovation diffusion theory framework, innovators and early adopters (counting for less than 15% of the population) use the Internet and only innovators for eCommerce. However, gradually Greek consumers are moving on. As more school and University graduates come to the marketplace, with computer skills as part of their education, the country will experience much higher levels of ICT penetration and eCommerce in the very near future. This is particularly the case for younger generations as well as for young executives that work with international companies and use the Internet extensively. With expectations that by the end of 2003, 20% of the Greek population will have Internet access a number of online services are emerging to propel eCommerce. This is evident by the gradual transformation of banking, where most of the banks are now fully operational online and aim to facilitate transactions and to reduce waiting times at their branches (GBN, 2003).

The further development of Greek portals and the establishment of online marketplaces, such as in.gr, will be critical for eCommerce in Greece, as they will point people to relevant content in their proximity. In addition, to the degree that special offers and good/secure service is available, online users will be willing to migrate distribution channels to online players. This is evident with airlines such as Easy jet, which sells the majority of its tickets online even for the Athens routes. There are clear similarities to the patterns of ecommerce adoption in major markets few years ago. Against this background, enterprises need to make some difficult decisions with regards to their ICT investments and their Internet adoption. Unless a significant proportion of their customers are willing and able to purchase their products online enterprises are understandably reluctant to invest heavily on ecommerce. It is therefore proposed that enterprises in Greece initially need to focus their ICT investments to support their Business to Business (B2B) transactions, where a number of benefits can be clearly identified through the reengineering of their interactions with their suppliers and institutional customers. By enhancing their value chain they can make significant cost savings and expand their catchment area. Depending on their sector, Business to Consumer (B2C) web presence can also facilitate their interaction with consumers through information provision and gradually fully transactional eCommerce sites. A number of enterprises have emerged in the last few years, selling ICT equipment, books, music, food and wine, flowers and travel products online. They address primarily the younger and technologically advanced markets. In additional, several enterprises provide Greek products internationally, often targeting Greek immigrants living abroad. As organisations that register a dot.gr domain must be legal and VAT-registered entities, there is a certain degree of security with transactions made with these entities. However, as the consumer behaviour of the Greek public is primarily influences by personal relationships and face to face contacts, enterprises need to develop multi-channel strategies where they support sales consistently across all their online and off-line channels. Achieving consistency between all channels, adding value for money and time, and supporting personal relationships with prospective customers will be critical for their success. State/government intervention is also important for the adoption of ecommerce in Greece and the public sector will have to undertake a number of tasks, including:

- Educate and train people on ICTs and ecommerce through schooling, professional training and adult education
- Develop a regulatory framework for the emerging electronic marketplace
- Provide incentives for SMEs and micro-enterprises to adopt emerging ICTs and to take advantage of ecommerce applications
- Reengineer the public sector services and enhance its communications with both consumers and businesses
- Provide the infrastructure to reduce the digital divide between different age groups, social classes and regions
3.9 International Organisations

International organisations including the European Union and OECD also play a critical role by introducing policies and measures that enable governments and public sector agencies to implement them at the local level. A wide range of funding opportunities are also available through international organisations which often provide incentives for other stakeholders to invest on ICTs and ecommerce. The European Commission in particular has provided significant budgets for peripheral regions and Small and Medium Enterprises to implement innovative technologies. ICT adoption and education should be identified as a significant factor for the future competitiveness of the Greek economy. Investment on both areas should be of high priority and should bring dividends in the form of economic growth, regional development and improvement in quality of life.
Summary

- Shopping online offers an alternative to catalog and television shopping that appeals to many consumers.
- Electronic retailing (e-tailing) is the direct sale of products through electronic catalog and/or auctions.
- Goods that are bought most often online are computers and computer-related items, office supplies, books and magazines, CDs, cassettes, movies and videos, clothing and shoes, toys, and food.
- An electronic mall, also known as a cybermall or e-mail, is a collection of individual shops under one internet address.
- The concept of retailing and e-tailing implies sales of goods and/or services to individual customers.
- E-tailers face a difficult problem of how to ship very small quantities to a large number of buyers.
- Many dot-com companies were selling goods at or below cost, with the objective of attracting many customers and advertisers to their sites.
- Electronic banking, also known as cyber banking and online banking, includes various banking activities conducted from home, a business, or on the road instead of at a physical bank location.
- Electronic banking offers several of the benefits of EC such as expanding the customer base and saving the cost of paper transactions.
- The Internet offers a perfect environment for job seekers and for companies searching for hard-to-find employees.
- Job Seekers can reply to employment ads online.

References


Recommended Reading

- Miller, M., B2B Digital Marketing: Using the Web to Market Directly to Businesses (Que Biz-Tech), Hoder Education Publisher.
Self Assessment

1. __________ is a collection of individual shops under one internet address.
   a. electronic mall
   b. electronic letters
   c. electronic funds
   d. electronic trading

2. The concept of retailing and ______ implies sales of goods and/or services to individual customers.
   a. e-mailing
   b. e-tailing
   c. e-tendering
   d. e-recollecting

3. One of the most interesting properties of e-tailing models is the ability to offer customised products at a ________ and fairly fast.
   a. low cost
   b. reasonable price
   c. high cost
   d. fair price

4. Malls generate streams of ____________ customers.
   a. existing
   b. responsible
   c. irresponsible
   d. prospective

5. If a seller is a ________ company, it may face a conflict with its regular distributors when it sells directly online.
   a. established
   b. brick and mortar
   c. click and mortar
   d. well known

6. __________ has capabilities ranging from paying bills to applying for a loan.
   a. E-surfing
   b. E-mailing
   c. Internet
   d. Electronic banking

7. International banking and the ability to handle in multiple currencies are critical for __________ trade.
   a. national
   b. local
   c. international
   d. global
8. Both online banking and ___________ trading require tight security.
   a. logistics
   b. securities
   c. requisites
   d. electronic

9. The ________ offers a perfect environment for job seekers and for companies searching for hard-to-find employees.
   a. society
   b. internet
   c. company
   d. consultancy

10. Many organisations advertise openings on their ________.
    a. website
    b. notice board
    c. dash board
    d. blog
Chapter IV
Market Research and Online Advertising

Aim
The aim of this chapter is to:

- explain the importance of market research
- elucidate the activities of online advertising
- explore the activities of B2C market research

Objective
The objective of this chapter is to:

- define purchase decision making system
- explicate consumer decision making process
- enlist the importance of online advertising

Learning outcome
At the end of this chapter, you will be able to:

- describe the model of consumer behavior online
- understand purchase support system
- enlist software agents enhance B2C and market Research
4.1 Introduction

To successfully conduct electronic commerce, especially B2C, it is important to find out who the actual and potential customers are and what motivates them to buy. Several research institutions collect Internet-usage statistics (e.g., acnielsen.com, emarketer.com), and they also look at factors that inhibit shopping. Merchants can then prepare their marketing and advertising strategies based on this information.

Finding out what specific groups of consumers (such as teenagers or residents of certain geographical zones) want is done via segmentation, dividing customers into specific segments, like age or gender. However, even if we know what groups of consumers in general want, each individual consumer is very likely to want something different. Some like classical music while others like jazz. Some like brand names, while price is more important to many others. Learning about customers is extremely important for any successful business, especially in cyberspace. Such learning is facilitated by market research.

4.1.1 A Model of Consumer Behaviour Online

For Decades, market researchers have tried to understand consumer behaviour, and they have summarised their findings in various models of consumer behavior. The purpose of a consumer behavior model is to help vendors understand how a consumer makes a purchasing decision. If the process is understood, a vendor may try to influence the buyer’s decision, for example, by advertising or special promotions. Figure 4.1 shows the basics of these consumer behavior models, adjusted to fit the EC environment. The EC model is composed of the following parts:

- Independent (or uncontrollable) variables, which are shown at the top of Figure 4.1. They, can be categorised as personal characteristics and environmental characteristics.
- Vendors’ controlled variables (intervening or moderating variables), which are divided into market stimuli (on the left) and EC systems at the bottom.
- The decision-making process, shown in the center of the figure, is influenced by the independent and intervening variable. This process ends with the buyers’ decisions (shown on the right), resulting from the decision making process.
- The dependent variables that describe the decisions made. Figure 4.1 identifies some of the variables in each category. In this chapter, we deal briefly with only some of the variables. Discussions of other variables can be found in Internet-marketing books, such as Strauss et al. (2003) and Sterne (2001, 2002) and in Online File W5.2.

Before we discuss some of the model’s variables, let’s examine who the EC consumers are. Online consumers can be divided into two types: individual consumers, who get much of the media attention, and organisational buyers, who do most of the actual shopping in cyberspace. Organisational buyers include governments, private corporations, resellers, and public organisations. Purchases by organisational buyers are generally used to create products (services) by adding value to raw material or components. Also, organisational buyers such as retailers and resellers may purchase products for resale without any further modifications.

The above model is simplified. In reality it can be more complicated, especially when new products or procedures need to be purchased. For example, for online buying, a customer may go through the following five adoption stages: awareness, interest, evaluation, trial, and adoption. (For details see McDaniel and Gates, 2001, and Solomon, 2002.) Understanding the structure of the model in Figure 4.1, or any more complicated one, is necessary, but in order to really make use of such models, we need to learn about the decision making process itself, as discussed next.
4.2 The Consumer Decision Making Process

Let’s return to the central part of Figure 4.1, where consumers are shown making purchasing decisions. Several models have been developed in an effort to describe the details of the decision-making process that leads up to and culminates in a purchase. These models provide a framework for learning about the process in order to predict, improve, or influence consumer decisions. Here we introduce two relevant purchasing-decision models.

4.2.1 A Generic Purchasing: Decision Model

A general purchasing-decision model consists of five major phases. In each phase we can distinguish several activities and, in some of them, one or more decisions. The five phases are: (1) need identification, (2) information search, (3) evaluation of alternatives, (4) purchase and delivery, and (5) after-purchase evaluation. Although these phases offer a general guide to the consumer decision-making process, do not assume that all consumers’ decision making will necessarily proceed in this order. In fact, some consumers may proceed to a point and then revert back to a previous phase, or skip a phase. For details, see Strauss et al. (2003) and Online File W5.2.

4.2.2 A Customer Decision Model in Web Purchasing

The above purchasing model was used by O’Keefe and McEachern (1998) to build a framework for a Web-purchasing model, called the Consumer Decision Support System (CDSS). According to their framework, shown in Table 4.1, each of the phases of the purchasing model can be supported by both CDSS facilities and Internet/Web facilities. The CDSS facilities support the specific decisions in the process. Generic EC technologies provide the necessary mechanisms, and they enhance communication and collaboration. Specific implementation of this framework is demonstrated throughout the text.
### Table 4.1 Purchase decision–making process and support system
(Source: http://www.mywbut.com)

<table>
<thead>
<tr>
<th>Decision Process Steps</th>
<th>Consumer Decision support system support Facilities</th>
<th>Generic Internet and Web Support Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need Recognition</td>
<td>Agents and Event Notification</td>
<td>Banner advertising on order Web sites</td>
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<td></td>
<td></td>
<td>URL on physical material</td>
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<tr>
<td></td>
<td></td>
<td>Discussions in newsgroups</td>
</tr>
<tr>
<td>Information search</td>
<td>Virtual catalogs</td>
<td>Web directories and classifers</td>
</tr>
<tr>
<td>(what from whom?)</td>
<td>Structured interaction and question/answer sessions</td>
<td>Internal search on Web site External</td>
</tr>
<tr>
<td></td>
<td>Links to (and guidance on) external sources</td>
<td>search engines Focused directories and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>information brokers</td>
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<tr>
<td>Evaluation,</td>
<td>FAQs and other summaries</td>
<td>Discussion in newsgroups</td>
</tr>
<tr>
<td>negotiation and</td>
<td>Samples and trials</td>
<td>Cross-site comparisons</td>
</tr>
<tr>
<td>Selection</td>
<td>Provisions of evaluative models</td>
<td>Generic models</td>
</tr>
<tr>
<td></td>
<td>Pointers to (and information) existing customers</td>
<td></td>
</tr>
<tr>
<td>Purchase, Payment</td>
<td>Product or service ordering</td>
<td>Electronic cash and virtual banking</td>
</tr>
<tr>
<td>and Delivery</td>
<td>Arrangement of delivery</td>
<td>Logistics providers and package tracking</td>
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<tr>
<td>After-purchase service</td>
<td>Customer support via e-mail and</td>
<td>Discussion in newsgroups</td>
</tr>
<tr>
<td>and evaluation</td>
<td>Newsgroups E-mail communication</td>
<td></td>
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</tbody>
</table>

### 4.3 How Market Research Finds what Customers Want?
There are basically two ways to find out what customers want. The first is to ask them, and the second is to infer what they want by observing what they do in cyberspace.

#### 4.3.1 Asking Customers what they Want
The Internet provides easy, fast, and relatively inexpensive ways for vendors to find out what customers want by interacting directly with them. The simplest way is to ask potential customers to fill in electronic questionnaires. To do so, vendors may need to provide some inducements. For example, in order to play a free electronic game or participate in a sweepstakes, you are asked to fill in an online form and answer some questions about yourself (e.g., see bizrate.com). Marketers not only learn what you want from the direct answers, but also try to infer from your preferences of music, for example, what type of books, clothes, or movies you may be likely to prefer.

In some cases, asking customers what they want may not be feasible. Also, customers may refuse to answer questionnaires, or they may provide false information (as is done in about 40 percent of the cases, according to studies done at Georgia Tech University). Also, questionnaires can be lengthy and costly to administer. Therefore, a different approach may be needed—observing what customers do in cyberspace.

#### 4.3.2 Tracking Customer Activities on the Web
Today it is possible to learn about customers by observing their behavior on the Internet. Many companies offer site-tracking services, based on cookies, Web bugs, or spyware programs. For example, Net tracker (from sane.com) collects data from client/server logs and provides periodic reports that include demographic data such as where customers come from or how many customers have gone straight from the home page to ordering. The Web is an incredibly rich source of business intelligence, and many enterprises are scrambling to build data warehouses that capture the knowledge contained in the click stream data (data recovered from customers’ “clicks” as they move around online) obtained from their Web sites. By analysing the user behavior patterns contained in these click stream data warehouses (see Sweiger et al., 2002), savvy businesses can expand their markets, improve customer relationships, reduce costs, streamline operations, strengthen their Web sites, and plot their business strategies.
4.4 Using Software Agents to Enhance B2C and Market Research

Software agents are computer programs that conduct routine tasks, search and retrieve information, support decision making, and act as domain experts. These agents sense the environment and act autonomously without human intervention. This results in a significant savings of users’ time. There are various types of agents that can be used in EC ranging from software agents, which are those with no intelligence, to learning agents that exhibit some intelligent behavior.

Agents are used to support many tasks in EC. But first, it will be beneficial to distinguish between search engines and the more intelligent type of agents. A search engine is a computer program that can automatically contact other network resources on the Internet, search for specific information or key words, and report the results. Unlike search engines, an intelligent agent uses expert, or knowledge-based, capabilities to do more than just “search and match.” For example, it can monitor movements on a Web site to check whether a customer seems lost or ventures into areas that may not fit his profile, and the agent can then notify the customer and even provide corrective assistance. Depending on their level of intelligence, agents can do many other things. In this section we will concentrate on intelligent agents for assisting shoppers (see Yuan, 2003).

4.4.1 Brand-and Vendor-Finding Agents and Price Comparisons

Once the consumer has decided what to buy, a type of intelligent agent called a comparison agent will help in doing comparisons, usually of prices, from different vendors. A pioneering price-comparison agent was Bargain finder from Andersen Consulting. This agent was used only in online shopping for CDs. It queried the price of a specific CD from a number of online vendors and returned the list of vendors and prices. Today much more sophisticated agents, such as Mysimon.com, Pricescan.com and Dealtime.com, make comparisons. Some of these look at multiple criteria, not just price, and even let you prioritise the criteria. Then, the agent makes a recommendation based on your stated preferences.

4.4.2 Search Agents

Search Agents, another type of intelligent agents, can help customers determine what to buy to satisfy a specific need (e.g., Likemind.com, Gifts.com). This is achieved by looking for specific product information and critically evaluating it. The search agent helps consumers decide what product best fits their profile and requirements (e.g., see salesmountain.com).

4.4.3 Collaborative Filtering Agents

Once a company knows a consumer’s preferences (e.g., what music they like), it would be useful if the company could predict, without asking, what other products or services this consumer might enjoy. One way to do this is through use of collaborative filtering agents, which use customer data to infer customer interest in other products or services. There are several methods and formulas, all using software agents, to execute collaborative filtering. Some collaborative filtering agents based predictions on statistical formulas derived from behavioral sciences (see sins. berkeley.edu/resources.collab/ for details). Some based their predictions on what is known about other customers with similar profiles. (For details of the different methods and formulas, see Ridell et al., 2002.) One of the pioneering filtering agents was Firefly (now embedded in Microsoft’s Passport System).

4.4.4 Other Agents

Many other software agents can aid buyers and sellers in ecommerce. Examples are: UPS.com for optimising deliveries, e-Falcon.com for fraud detection, and webassured.com for increasing trust levels. Other agents are described throughout the book. The information collected by market research is used for customer relationship management (CRM), and for advertising, the topics we discuss next.
4.5 Advertising Online

Advertisement is attempt to disseminate information in order to influence a buyer – seller transaction. Traditional advertising on TV or newspapers is impersonal, one-way mass communication. Direct-response marketing (telemarketing) contacts individuals by means of direct mail or by telephone calls and requires them to respond in order to make a purchase. The direct-response approach personalises advertising and marketing, but it can be expensive, slow, and ineffective (and from the consumer’s point of view, annoying). Internet advertising redefines the advertising process, making it media-rich, dynamic, and interactive. It improves on traditional forms of advertising in a number of ways: Internet ads can be updated any time at minimal cost, and therefore can always be timely. Internet ads can reach very large number of potential buyers all over the world and they are sometimes cheaper in comparison to print (newspaper and magazine), radio, or television ads. Ads in these other media are expensive because they are determined by space occupied (print ads), by how many days (times) they are run, and on the number of local and national stations and print media that run them. Internet ads can be interactive and targeted to specific interest groups and/or to individuals. Finally, the use of the Internet itself is growing very rapidly, and it makes sense to move advertisement to the Internet, where the number of viewers is growing. Nevertheless, the Internet as an advertising medium does have some shortcomings, most of which relate to the difficulty in measuring the effectiveness and justifying the ads. For example, it is difficult to measure the actual results of placing a banner ad, or an e-mail and the audience is still relatively small (compared to television, for example). For a comparison of advertising media, see Online File W5.3.

4.5.1 Advertising Methods

The most common advertising methods online are banners, pop-ups, and e-mails. The essentials of these and some other methods are briefly presented next.

4.5.1.1 Banners

Banners are, simply, electronic billboards, and banner advertising is the most commonly used form of advertising on the Internet. Typically, a banner contains a short text or graphical message to promote a product or a vendor. It may even contain video clips and sound. When customers click on a banner, they are transferred to the advertiser’s home page.

Advertisers go to great lengths to design banners that catch consumers’ attention. There are two types of banners: Keyword banners appear when a predetermined word is queried from a search engine. It is effective for companies who want to narrow their target to consumers interested in particular topics. Random banners appear randomly and might be used to introduce new products to the widest possible audience, or for brand recognition. A major advantage of using banners is the ability to customise them to the target audience. Keyword banners can be customised to a market segment or even to an individual user. If the computer system knows who you are or what your profile is, you may be sent a banner that is supposed to match your interests. However, one of the major drawbacks of using banners is that limited information is allowed due to its small size. Hence advertisers need to think of creative but short messages to attract viewers. Another drawback is that banners, which were a novelty in late 1990s and so were noticed by viewers, are ignored by many viewers today. A new generation of banner-like ads is the pop-ups.

4.5.1.2 Pop-Up Pop-under, , and Similar Ads

One of the most annoying phenomena in Web surfing is the increased use of pop-up, pop-under, and similar ads. These ads are contained in a new browser window that is automatically launched when one enters or exits a site, or by other triggers such as a delay during Internet surfing. A pop-up ad appears in front of the current browser window. A pop-under ad appears underneath the active window, and when users close the active window, they see the ad. Pop-ups and pop-under are sometime difficult to close. These methods are controversial: Many users strongly object to these ads, which they consider intrusive.

4.5.1.3 Email Advertising

Email is emerging as an Internet advertising and marketing channel that affords cost-effective implementation and a better and quicker response rate than other advertising channels (such as print ads). Marketers develop or purchase a list of e-mail addresses, place them in a customer database, and then send advertisements via e-mail. A list of e-mail
addresses can be a very powerful tool because the marketer can target a group of people, or even individuals. For example, Restaurant.com use e-mail to send restaurant coupons to millions of customers. However, as with pop ups, there is a potential for misuse of e-mail advertising, and some consumers are receiving a flood of unsolicited mail (see the section on unsolicited advertising, below).

4.5.1.4 Electronic Catalogs and Brochures
Printed catalogs have been an advertising medium for a long time. Recently electronic catalogs have been gaining popularity. The merchant’s objective in using online catalogs is to advertise and promote products and services. From the customer’s perspective, online catalogs offer a source of information that can be searched quickly with the help of special search engines. Also, comparisons involving catalog products can be made very effectively. Sometimes merchants find it useful to provide a customised catalog to a regular customer. Such a catalog is assembled specifically for the particular buyer, usually a company but sometimes even an individual who buys frequently or in large quantities.

4.5.1.5 Other Forms of Internet Advertising
Online advertising can be done in several other forms, including posting advertising in chat rooms (newsgroups) and in classified ads (see classifieds 2000.com). Advertising on Internet radio is just beginning, and soon advertising on Internet television will commence. Of special interest is advertising to members of Internet communities. Community sites (such as geocities.com) are gathering places for people of similar interests and are therefore a logical place to promote products related to those interests. Another interesting method is wireless ads.

4.5.2 Some Advertising Issues and Approaches
There are many issues related to the implementation of Internet advertising: how to design ads for the Internet, where and when to advertise, and how to integrate online and off-line ads. Most of such decisions require the input of marketing and advertising experts. Here, we present the following illustrative issues.

4.5.2.1 Unsolicited Advertising :Spamming and More
A major issue related to pop ups and e-mail advertising is spamming, the practice of indiscriminate distribution of electronic ads without permission of the receiver. E-mail spamming, also known as unsolicited commercial e-mail or UCE, has been part of the Internet for years. Unfortunately, the situation is getting worse with time. The drivers of spamming and some of potential solutions are described in Online File W5.5.

4.5.2.2 Permission Marketing
Permission marketing is one answer to e-mail spamming. Permission marketing asks consumers to give their permission to voluntarily accept advertising and e-mail. Typically, consumers are asked to complete a form that asks what they are interested in and requests permission to send related marketing information. Sometimes consumers are offered incentives to receive advertising; at the least, marketers try to send information in an entertaining, educational, or other interesting manner. Permission marketing is the basis of many Internet marketing strategies. For example, millions of users receive e-mails periodically from airlines such as American and Southwest. Users of this marketing service can ask for notification of low fares from their home town or to their favorite destinations. Users can easily unsubscribe at any time. Permission marketing is also extremely important for market research (e.g., see mediapix.com). In one particularly interesting form of permission marketing, companies such as Clickdough.com, Getpaid4.com, and CashSurfers.com built customer lists of millions of people who are happy to receive advertising messages whenever they are on the Web. These customers are paid $0.25 to $0.50 an hour to view messages while they do their normal surfing. They may also be paid $0.10 an hour for the surfing time of any friends they refer to the above sites.
4.5.2.3 Viral Marketing

Viral marketing refers to online word-of-mouth marketing. The main idea in viral marketing is to have people forward messages to friends, asking them, for example, to “check this out.” A marketer can distribute a small game program, for example, which comes embedded with a sponsor’s e-mail that is easy to forward. By releasing a few thousand copies, vendors hope to reach many more thousands. Word-of-mouth marketing has been used for generations, but its speed and reach are multiplied many-fold by the Internet. Viral marketing is one of the new models being used to build brand awareness at a minimal cost (e.g., see alladvantage.com). It has long been a favorite strategy of online advertisers pushing youth-oriented products. Unfortunately, though, several e-mail hoaxes have spread via viral marketing. Also, a more serious danger of viral marketing is that a destructive computer virus can be added to an innocent advertisement, game, or message. However, when used properly, viral marketing can be both effective and efficient.

4.5.2.4 Interactive Advertising and Marketing

Conventional advertising is passive, targeted to mass audiences, and for that reason it may be ineffective. Therefore, all advertisers, whether online or not, attempt to customise their ads to special groups and, if possible, even to individuals. A good salesperson is trained to interact with sales prospects, asking questions about the features they are looking for and handling possible objections as they come up. Online advertising comes closer to supporting this one-to-one selling process than more traditional advertising media possibly can. Ideally, in interactive marketing, advertisers present customised, one-on-one ads. The term interactive points to the ability to address an individual, to gather and remember that person’s responses, and to serve that customer based on his or her previous, unique responses. When the Internet is combined with databases marketing, interactive marketing becomes a very effective and affordable competitive strategy.

4.5.2.5 Online Promotions: Attracting Visitors to a Site

A Web site without visitors has little value. The following are two examples of ways to attract visitors to a Web site.

- Making the top list of a search engine-Web sites submit their URLs to search engines. The search engine’s intelligent program (called a spider) crawls through the submitted site, indexing all related content and links. Some lists generated by search engines includes hundreds or thousands of items. Users that view the results submitted by a search engine typically start by clicking on the first 10 or so items, and soon get tired. So, for best exposure, advertisers like to make the top 10 of the list. How to do it? If it understands how a search engine’s program ranks its findings, a company can get to the top of a search engine’s list merely by adding, removing, or changing a few sentences on its Web pages. However, this is not easy, as everyone wants to do it, so there are sometimes several thousand entries competing to be in the top 10. It is easier to pay the search engine to put a banner at the top of the lists (e.g., usually on the right-hand side of the screen at google.com results).

- Online events, promotions, and attractions-People generally like the idea of something funny or something free, or both. Contests, quizzes, coupons, and free samples are an integral part of e-commerce as much as, or even more than, they are in off-line commerce. Running promotions on the Internet is similar to running offline promotions. These mechanisms are designed to attract visitors and to keep their attention. For innovative ideas for promotions and attractions used by companies online, see Sterne, 2001 and Strauss et al., 2003.

4.6 Why Shop Online?

Research firms anticipate that, in 2004, the number of online shoppers will increase by 14 percent, representing 30 percent of the U.S. population. Few developments have altered America’s lifestyle more quickly and more completely than the Internet. Online access has enabled people from all walks of life to bring entire libraries, entertainment venues, post offices and financial centers to a workplace, to a desktop or to a shirt pocket. The Internet’s largest and most meaningful impact may very well be on the way consumers shop for everything from gifts, gadgets and groceries to clothing, cars, and cruises. The ease and selection that the Internet provides to shoppers has changed the face of retailing. More and more, consumers visit a store’s Web site to make their choices before traveling to the store itself; and in a rapidly swelling tide, many shoppers are bypassing the store altogether and ordering online directly from the Web sites of their favorite brands and outlets.
Companies like Sephora, Sears and Crate & Barrel have increased the range and quantity of products available at their online stores and are sending online coupons and sale announcements via e-mail directly to their customers. Because online stores are open 24 hours a day, seven days a week, and their inventories are often more complete than those of their brick-and-mortar counterparts, the Internet makes it easy for shoppers to compare products within or between stores, to read product reviews from other customers, to access vendor return policies and to find warranty information. A recent study of the marketplace by Nielsen//Net Ratings found more than 200 million Americans (or 75%) are using the Internet. Those who shopped online in 2003 spent $17.2 billion online in just the fourth quarter alone. Research firms anticipate that, in 2004, the number of online shoppers will increase by 14 percent, representing 30 percent of the U.S. population. In four more years, half the country’s population will be purchasing online.

4.7 Americans’ Concerns about Safe Shopping

Increasingly, American consumers are expecting merchants – from major department stores to individuals who sell handcrafted jewelry to electronics and cars – to make their products easily available on the Web. They’re also expecting these online retailers to make payments a simple and secure process. While consumers have confidence in online stores, recent research suggests their confidence levels in the security of the actual purchases from these stores, especially from lesser-known or unknown sellers, lag behind their desire to engage in shopping over the Internet. An April 2004 survey by AC Nielsen found that news stories about identity theft and fraud have confused many consumers about how to shop safely online. The survey revealed the top security concerns of American online shoppers, which are: Not receiving the items purchased, or receiving items that are substantially different from their descriptions on the Web site.

- E-mail addresses sold to third parties
- Fears about personal or financial information being stolen
- E-mail scams known as “phishing” or “spoofing” that result in messages being sent to consumers from disreputable sources that are disguised as messages from trusted retailers or financial institutions.

Online fraud can take many forms from non-delivery of goods to non-return of damaged goods. In many cases, online fraud can be deterred by following a few simple practices. Just as consumers should take obvious measures to protect themselves in brick-and-mortar stores – not leaving a purse in an unguarded shopping cart, protecting their PIN (personal identification number) at checkout, not carrying large amounts of cash in their wallets – online shoppers should consider sensible precautions, as well.

Learn as much as possible about the product and seller: Shoppers will feel more secure and confident if they are familiar with the merchants from whom they’re buying. The Internet offers the platform for retailers to provide information about their companies and histories while the buyers are empowered to do their research about the products and companies. Shoppers might also learn about a retailer from its reputation, from previous purchases, from referrals through friends or from reviews and comments by other shoppers found online.

Understand the retailers’ refund policies: Look for and ask about what the refund policies are. Questions to ask include: the required timeframe a buyer must contact the retailers and return the items, if a full refund will be offered or a merchandise credit, and if an item that has been opened can be returned. For retailers without refund policies, consumers can use buyer protection programs from either the site or through the payment method. This ensures that if there is a problem with a transaction, the payment will be covered or refunded as a result of the protection guarantee.

Choose a secure password to protect account information: Many people use passwords for online stores that could be guessed, like their birthday, Social Security Number or a family member’s name. Instead, a password should contain a combination of upper and lower case letters and numbers and symbols that no one else will know. Just as consumers should take obvious measures to protect themselves in actual stores, online shoppers can consider sensible precautions, as well.
4.8 What to Do if Fraud Has Occurred?

First and foremost a buyer should contact the retailer from which the product was purchased. If agreement can’t be reached, the consumer should contact either the payment method or service used to dispute charges and finally contact a law enforcement official to report the incident. Use a secure checkout and payment process: Many Web sites use a technology called Secure Sockets Layer (SSL) to encrypt the personal and financial information sent over the Internet. To know if the retailer is offering a safe checkout process, look for the logos from companies like VeriSign or TrustE logo. A browser will also display the icon of a locked padlock at the bottom of the screen to indicate encryption. When it comes to choosing which method to use when paying online, consumers should take precautions when entering credit card or checking account information at each online retailer they visit. By entering this on several different merchant Websites, the likelihood of this information being compromised increases. A safe and easy-to-use payment service allows shoppers to enter account information only once at a highly secure and reputable site that protects this financial information from merchants and other intruders. Future purchases should be made from that one account to avoid the need to enter credit card information separately into the Web sites of individual retailers. If an offer sounds highly suspicious or too good to be true, it probably is: As with any purchase, shoppers should read the fine print (or, in some instances, click the links describing the purchase agreement). While Internet shops frequently offer lower prices than brick-and-mortar stores, shoppers should be wary of unreasonably low bargain prices or unusually attractive promises.

4.9 Deterring Identity Theft

Underreporting of Identity Theft Rewards the Thieves, Avivah Litan, Gartner, July 7, 2003. Millions Victimised in 2002 as Identity Theft Keeps Growing, Don Spatz, Reading Eagle, February 1, 2004. Identity theft is a crime that affects consumers at home, at work, in the shopping mall or online. The Federal Trade Commission (FTC) defines identity theft as the stealing of personal information to illegally obtain credit or medical care or to hide from the law. In just the past five years, according to the FTC, an estimated 27.3 million Americans have become its victims. In 2002 alone, the identities of 10 million U.S. residents were stolen, with $5 billion in losses to the victims, and nearly ten times that amount, $47 million, lost by businesses. A study by research firm Gartner reported that 7 million U.S. adults, or 3.4 percent of U.S. consumers, were victims of identity theft during the 12 months ending in May 2003. Contrary to popular belief, identity theft is not simply an Internet problem.

Research shows that a large amount of identity theft actually occurs in the offline world when a thief obtains an individual’s personal financial information through the mail or their discarded trash. “Identity theft is not necessarily a high-tech crime,” says Avivah Litan, vice president of research for Gartner. “It can just as easily damage the credit reputations of low-tech adults who don’t spend any time on the Internet.” Analysis of identity theft cases indicates that this crime could be reduced substantially by shopping and paying bills online instead of paying through the mail. Javelin Strategy and Research, a research firm covering the payments industry, conducted a thorough examination of identity crimes and found that consumers, billers and financial institutions could reduce their risk by 10.4 percent when they move their at-risk activities to the Internet. By shopping and paying bills online, consumers are more apt to review their account information and the accuracy of each of the transactions they make. Online bill payment also reduces the risk of a paper trail from receiving paper statements or sending paper checks. Automatic payroll, Social Security and other recurring deposits can also benefit consumers by avoiding the risk of having checks stolen from mailboxes. Javelin projects that if all Americans tomorrow began using the electronic banking and bill payment services now available on the Internet, the amount of identity fraud prevented during the next year would total $2.37 billion. Another $2.5 billion would be saved over the same period because consumers can more rapidly detect fraudulent use of their bank and credit card accounts when they monitor them regularly online.
Summary

- Several research institutions collect Internet-usage statistics (e.g., acnielsen.com, emarketer.com), and they also look at factors that inhibit shopping.
- Learning about customers is extremely important for any successful business, especially in cyberspace.
- The purpose of a consumer behavior model is to help vendors understand how a consumer makes a purchasing decision.
- For online buying, a customer may go through the following five adoption stages: awareness, interest, evaluation, trial, and adoption.
- Purchases by organisational buyers are generally used to create products (services) by adding value to raw material or components.
- Once the consumer has decided what to buy, a type of intelligent agent called a comparison agent will help in doing comparisons, usually of prices, from different vendors.
- Search Agents, another type of intelligent agents, can help customers determine what to buy to satisfy a specific need.
- There are several methods and formulas, all using software agents, to execute collaborative filtering.
- Advertisement is attempted to disseminate information in order to influence a buyer – seller transaction.
- Internet advertising redefines the advertising process, making it media-rich, dynamic, and interactive.

References

- Khosrowpour, M., Encyclopedia of E-commerce, E-government and Mobile Commerce, Hudson Hills Press LLC.

Recommended Reading

Self Assessment

1. The purpose of a consumer behavior model is to help vendors understand how a consumer makes a _________ decision.
   a. purchasing
   b. selling
   c. discounting
   d. profiting

2. Finding out what specific groups of consumers want is done via ________.
   a. sectorisation
   b. segmentation
   c. polymerisation
   d. factorisation

3. For online buying, a customer may go through the ________ adoption stages.
   a. two
   b. three
   c. four
   d. five

4. A general purchasing-decision model consists of ______ major phases.
   a. three
   b. two
   c. five
   d. four

5. __________ can help customers determine what to buy to satisfy a specific need.
   a. Purchase agent
   b. Search agent
   c. Intermediate agent
   d. Company agent

6. The most common advertising methods online are ______, pop-ups, and e-mails.
   a. classifieds
   b. banners
   c. posters
   d. cards

7. A major advantage of using ______ is the ability to customise them to the target audience.
   a. pop-ups
   b. e-mails
   c. internet
   d. banners
8. ________ is emerging as an Internet advertising and marketing channel that affords cost-effective implementation and a better and quicker response rate than other advertising channels.
   a. banners
   b. chat
   c. e-mail
   d. blogs

9. Online advertising can be done in several other forms, including posting advertising in ________ and in classified ads.
   a. internet
   b. chat rooms
   c. web
   d. blog

10. ________ have been an advertising medium for a long time.
    a. unprinted catalog
    b. printed catalog
    c. primary catalog
    d. secondary catalog
Chapter V

Business to Business Applications and Intrabusiness and Business to Employees

Aim

The aim of this chapter is to:

- explain sell side market places
- explicate buy side market places
- explore electronic exchanges

Objectives

The objective of this chapter is to:

- define B2E Commerce
- explicate e-commerce among units within the business
- enlist e-commerce among corporate employees

Learning outcome

At the end of this chapter, you will be able to:

- describe Business to Business applications
- understand emerging EC applications like intrabusiness
- identify (one of the EC applications ) B2E commerce


5.1 Introduction: B2B Applications
In business to business (B2B) applications, the buyers, sellers, and transactions involve only organisations. Business-to-business comprises about 85 percent of EC volume. It covers a broad spectrum of applications that enable an enterprise to form electronic relationships with its distributors, resellers, suppliers, customers, and other partners. By using B2B, organisations can restructure their supply chains and partner relationship (e.g., see Warkentin, 2001). There are several business models for B2B applications. The major ones are sell-side marketplaces, buy-side marketplaces, and electronic exchanges.

5.2 Sell-Side Marketplaces
In the sell-side marketplace model, organisations attempt to sell their products or services to other organisations electronically, from their own private e-market place and/or from a third-party site. This model is similar to the B2C model in which the buyer is expected to come to the seller’s site, view catalogs, and place an order. In the B2B sell-side marketplace, however, the buyer is an organisation.

The key mechanisms in the sell-side model are: (1) electronic catalogs that can be customised for each large buyer and (2) forward auctions. Sellers such as Dell Computer (dellauction.com) use this method extensively. In addition to auctions from their Web sites, organisations can use third-party auction sites, such as eBay, to liquidate items. Companies such as Freemarkets.com are helping organisations to auction obsolete and old assets and inventories.

The sell-side model is used by thousands of companies and is especially powerful for companies with superb reputations. Examples are major computer companies such as Cisco, IBM, and Intel. The seller in this model can be either a manufacturer, a distributor (e.g., bigboxx.com and avnet.com), or a retailer. In this model, EC is used to increase sales, reduce selling and advertising expenditures, increase delivery speed, and reduce administrative costs. This model is especially suitable to customisation. For example, customers can configure their orders online at cisco.com, dell.com, and others. This results in fewer misunderstandings about what customers want and in much faster order fulfillment.

5.3 Buy-Side Marketplaces
The buy-side marketplace is a model in which organisations attempt to buy needed products or services from other organisations electronically, usually from their own private e-marketplace. A major method of buying goods and services in the buy-side model is a reverse auction. Here, a company that wants to buy items places a request for quotation (RFQ) on its Web site, or in a third party bidding marketplace. Once RFQs are posted, sellers (usually preapproved suppliers) submit bids electronically. Such auctions attract large pools of willing sellers, who can be a manufacturer, a distributor, or a retailer. The bids are routed via the buyer’s intranet to the engineering and finance departments for evaluation. Clarifications are made via e-mail, and the winner is notified electronically.

The buy-side model uses EC technology to streamline the purchasing process in order to reduce the cost of items purchased, the administrative cost of procurement, and the purchasing cycle time. General Electric, for example, has calculated that it saves 10 to 15 percent on the cost of the items placed for bid and up to 85 percent on the administrative cost of procurement (Turban et al., 2004); in addition, cycle time is reduced by about 50 percent. Procurements using a third-party buy-side marketplace model are especially popular for medium and small organisations.

5.3.1 E-Procurement
Purchasing by using electronic support is referred to as e-procurement. In addition to reverse auctions just discussed, e-procurement uses other mechanism. Two popular ones are group purchasing and desktop purchasing.

5.3.1.1 Group Purchasing
In group purchasing, the requirements of many buyers are aggregated so that they total to a large volume, and may merit more seller attention. Once buyers’ orders are aggregated, they can be placed on a reverse auction, and a volume discount can be negotiated. The orders of small buyers usually are aggregated by a third-party vendor, such as Consarta.com and Shop2gether.com. Group purchasing is especially popular in the health care industry (see all-health.com).
5.3.1.2 Desktop Purchasing
In this variation of e-procurement, known as desktop purchasing, suppliers’ catalogs are aggregated into an internal master catalog on the buyer’s server, so that the company’s purchasing agents (or even end users) can shop more conveniently. Desktop purchasing is most suitable for maintenance, replacement, and operations (MRO) indirect items, such as office supplies. (The term indirect refers to the fact that these items are not inputs to manufacturing.)

In the desktop purchasing model, a company has many suppliers, but the quantities purchased from each are relatively small. This model is most appropriate for large companies (such as Schlumberger) and for government entities.

5.4 Electronic Exchanges
E-Market Places in which there are many sellers and many buyers are called public exchanges (in short, exchanges). They are open to all, and frequently are owned and operated by a third party. According to Kaplan and Sawhney, 2000, there are basically four types of exchanges:

- Vertical distributors for direct materials—These are B2B marketplaces where direct materials (materials that are inputs to manufacturing) are traded in an environment of long-term relationship, known as systematic sourcing. Examples are Plasticsnet.com and Papersite.com. Both fixed and negotiated prices are common in this type of exchange.

- Vertical exchanges for indirect materials—Here indirect materials in one industry are purchased on an “as-needed” basis (called spot sourcing). Buyers and sellers may not even know each other. ChemConnect.com and Isteelasia.com are examples. In such vertical exchanges, prices are continually changing, based on the matching of supply and demand. Auctions are typically used in this kind of B2B marketplace, sometimes done in private trading rooms, which are available in exchanges like ChemConnect.com.

- Horizontal distributors—These are “many-to-many” e-marketplaces for indirect (MRO) materials, such as office supplies, used by any industry. Prices are fixed or negotiated in this systematic sourcing-type exchange. Examples are ECEurope.com, Globalsources.com, and Alibaba.com.

- Functional exchanges—Here, needed services such as temporary help or extra space are traded on an “as-needed” basis (spot sourcing). For example, EmployEase.com can find temporary labor using employers in its EmployEase Network. Prices are dynamic, and they vary depending on supply and demand.

All four types of exchanges offer diversified support services, ranging from payments to logistics. Vertical exchanges are frequently owned and managed by a group of big players in an industry (referred to as a consortium). For example, Marriott and Hyatt own a procurement consortium for the hotel industry, and Chevron Texaco owns an energy e-marketplace. The vertical e-marketplaces offer services particularly suited to the particular e-community they serve. Since B2B activities involve many companies, specialised network infrastructure is needed. Such infrastructure works either as an Internet/EDI or as extranet. A related EC activity, usually done between and among organisations, is collaborative commerce.

5.5 Chemical Companies “Bond” at Chemconnect
Buyers and sellers of chemical and plastics today can meet electronically in a large vertical exchange called ChemConnect (chemconnect.com). Using this exchange, global industry leaders such as British Petroleum, Dow Chemical, BASF, Hyundai, Sumitomo, and many more can reduce trading cycle time and cost and can find new markets and trading partners around the globe. ChemConnect provides a public trading marketplace and an information portal to more than 9,000 members in 150 countries. In 2003, over 60,000 products were traded in this public, third-party-managed e-marketplace. Chemconnect provides three marketplaces (as of April 21, 2003): a commodity markets platform, a marketplace for sellers, and a marketplace for buyers:

- The commodity markets platform is a place where prequalified producers, customers, consumers, distributors, and others come together in real time to sell and buy chemical-related commodities like natural gas liquids, oxygenates, olefins, and polymers. They can even simultaneously execute multiple deals. Transactions are done through regional trading hubs.
The marketplace for sellers has many tools ranging from electronic catalogs to forward auctions. It enables companies to find buyers all over the world. Chemconnect provides all the necessary tools to expedite selling and achieving the best prices. It also allows for negotiations.

The marketplace for buyers is a place where thousands of buyers shop for chemical-related indirect materials (and a few direct materials). The market provides for automated request for proposal (RFP) tools as well as a complete online reverse auction. The sellers’ market is connected to the buyers’ market, so that sellers can connect to the RFPs posted on the marketplace for buyers. (Note that RFP and RFQ are interchangeable terms; RFP is used more in government bidding.)

For the three marketplaces, ChemConnect provides logistics and payment options as well as connectivity solutions (such as integration connection with ERPs). Also, market information is provided as well as a network of industry experts and contact with third-party service providers and other business partners. In all of its trading mechanisms, up-to-the-minute market information is available and can be translated to 30 different languages. Members pay transaction fees only for successfully completed transactions. Business partners provide several support services, such as financial services for the market members. The marketplaces work with certain rules and guidelines that ensure an unbiased approach to the trades. There is full disclosure of all legal requirements; payments, trading rules, etc. (Click on “Legal info and privacy issues” at the ChemConnect Web site.) ChemConnect is growing rapidly, adding members and trading volume.

5.6 Introduction: Intrabusiness and Business to Employees

E-Commerce can be done not only between business partners, but also within organisations. Such activity is referred to as intrabusiness EC or in short, intrabusiness. Intrabusiness can be done between a business and its employees (B2E); among units within the business (usually done as c-commerce); and among employees in the same business.

5.7 Business to its Employees (B2E)Commerce

Complaints are finding many ways to do business electronically with their own employees. They disseminate information to employees over the intranet, for example. They also allow employees to manage their fringe benefits and take training classes electronically. In addition, employees can buy discounted insurance, travel packages, and tickets to events on the corporate intranet, and they can electronically order supplies and material needed for their work. Also, many companies have electronic corporate stores that sell a company’s products to its employees, usually at a discount. Of the many types of employees that benefit from B2E we have chosen to focus on sales people in the field. Note that in the literature on B2E commerce, B2E includes all things employees need for work, not just for communication, compensation, and benefits; so productivity software, such as sales force automation, is considered part of B2E.

5.7.1 Sales Force Automation

Sales Force Automation (SFA) is a technique of using software to automate the business tasks of sales, including order processing, contact management, information sharing, inventory monitoring and control, order tracking, customer management, sales forecast analysis, and employee performance evaluation. Of special interest in the context of B2E e-commerce is the support provided to employees when they are in the field. Recently, SFA become interrelated with CRM, since the salespeople constitute the contact point with customers. IT can empower salespeople and other customer-facing employees to make quick decisions, when they are in the customer’s office. Advancement in wireless technologies is creating opportunities for providing salespeople with new capabilities, such as shown in the case of PAVECA Corp. Many other companies, ranging from Maybelline to Kodak, have equipped their sales forces with similar mobile devices.
5.8 E-Commerce between and among Units within the Business

Large corporations frequently consist of independent units, or strategic business units (SBUs), which “sell” or “buy” materials, products, and services from each other. Transactions of this type can be easily automated and performed over the intranet. An SBU can be considered as either a seller or a buyer. An example would be company-owned dealerships, which buy goods from the main company. This type of EC helps in improving the internal supply chain operations.

5.9 E-Commerce between and among Corporate Employees

Many large organisations allow employees to post classified ads on the company intranet, through which employees can buy and sell products and services from each other. This service is especially popular in universities, where it has been conducted since even before the commercialisation of the Internet. The Internet is used for other collaboration as well.

5.10 Paveca of Venezuela Uses Wireless in Sales Force Automation

Paveca, Venezuela’s largest paper goods manufacturer and exporter manufactures toilet paper, paper towels, tissues, and other paper products. The company enjoys a significant amount of market share, and seeking to maintain that, it chose to use some e-commerce technologies to cut operational costs and improve customer service at the same time. Paveca implemented a wireless system that allows its sales reps to use their wireless PDAs to connect to the Internet while they are in the field. Via the Internet connection, the salespeople can log directly into the company intranet to get all the information they need in real time. Orders can then be entered into the system in real time.

The system revolves around two pieces of software from iWork Software (iworksoftware.com): an automatic data collection system, and a workflow integration solution. The combination allows sales people to automatically register sales transactions into the ERP system (Chapter 8) as they occur. Each salesperson has a PDA that connects them directly to the company’s ERP system in real time. When an order is entered into the PDA, it goes into the ERP system and follows a pre-defined automated workflow. The savings produced by the new system as compared to the ERP/manual system were dramatic. For example, order processing time was reduced by 90 percent, order approval time by 86 percent, shipment time by 50 percent, and the time between orders taken and order posting was reduced from three days to 20 seconds. The faster order processing time not only led to faster order approval but also increased the number of daily shipments out of their warehouse.

While the main goal was to improve workflow, there’s another potential benefit here: better customer service. Because of the direct links and integration, customers can get their orders faster, and there’s less chance of errors occurring. Customers are happier and more loyal, and so indirectly, the company’s profit increases because customers are more likely to place additional orders in the future. Finally, the transmitted data enter directly into the corporate DSS models, enabling quick decisions in response to the field reports filed by the salespeople.

The Web was developed to provide information on a simple distributed document-centric system and has evolved into a complex system, which benefits from centralised maintenance and evolution as well as from effortless deployment of services at low cost. As the Web has become a runtime environment for small-scale to large-scale business applications, a more structured and disciplined approach for design, implementation, maintenance respectively evolution, and integration of such Web applications is required [12]. Specifically, as the life cycle of Web applications is highly influenced by arising technologies, user-behavior, and state-of-the-art trends in e-commerce. Nevertheless, today’s development of Web applications suffers from the underlying simple and coarse-grained implementation model leading to a non strict, non-systematic, and non disciplined implementation of applications [6].

This is mainly implied by the difference between entity-granularity and abstractions provided by common software engineering design models, and by the Web implementation model, which complicates the mapping from design to implementation. Since the Web does not relate well to state-of-the-art software development models, it is rather difficult to define architectures and frameworks, which ease the construction of Web-based applications or the integration of several heterogeneous applications to a Web-based business application system. Even if the gap between design and implementation model is bridged manually, design decisions will get lost in the implementation.
integration of Web-based business applications yields therefore to a bigger complexity, as design decisions for Web-based applications in Netnomics Journal 2 (2000), pp. 117-138 are hard to track. The integration of heterogeneous (Web-based) application systems has to be supported on an architectural level that provides the flexibility or granularity needed, and that preserves design decisions independent from a given implementation. To do so, we propose a generic integration layer, that is build on the object-oriented

WebComposition model, allowing the reuse of code and design, and automatic generation for each product individually. As services of different business application systems are combined to new Web-based products, communication between (legacy) business application systems, which have to collaborate to make a given product available, has to be ensured on a semantic level. For this reason, we propose the use of a second basic integration layer, which provides inter-application system interchange of business data by combining EDI (electronic data interchange) and XML (extensible markup language). The next section introduces basic terms, shows how they are presented and provided in the Web, and discusses the proposed architecture in more detail. It contains the technical basement for modeling services in the Web, and a description of our approach to integrate Web-based business applications. Furthermore, we explain how communication between the different underlying business application systems is ensured. After that, we link up with this introduction and present a real-world application, which is based on our approach. Finally, we will give conclusions and discuss further work.

5.11 Reuse in the Web

At first we describe implications of the gap between design models and the Web implementation model and focus on how this influences the reuse of code and design. Further, we introduce the WebComposition approach as a generic intermediate model to automatically map from design to implementation.

5.11.1 Bridging the Gap between Design Model and Web Implementation Model

Document-centric Web implementation prevents the possibility to model design elements, like user interface objects in interactive applications, dialogue parts of workflows, or structural elements to keep care of the application’s corporate look and feel. Fine-granular model entities will get lost after mapping to coarse-grained entities of the implementation model, as they have to be glued together in one code base or even be cloned into several documents. Thus, changes in design and layout, or reuse of the entities for cost reduction and quality improvement makes maintenance respectively evolution of a Web application a difficult task to perform. Design methods and systems with support of mapping higher-level concepts and fine-grained entities to the Web, like OOHDM [28], RMM [16], JESSICA [2], or TML [18] address these problems in different ways. The disciplined development of large-scale Web applications with heterogeneous legacy systems in the back-end and a possible partial distribution for maintenance and reuse of higher-level concepts is less looked at, even though this scenario is important in e-commerce applications. The entities of the design model often relate only to fragments within a resource, to abstraction of code in a target language, to compositions of such code fragments, to navigational concerns on the information chunks, or to details specific to the server-software platform, or for the integration of legacy systems. This fine granularity does not match very well with the granularity of the Web implementation model. Even if Web server technology is enriched, like the introduction of server-side include or server-side scripting technologies (for an overview platform-independent deployment entities (the Web documents) burden a disciplined reuse of existing code. In contrast, generating methods, like server-side script code, prevent reuse by depending on a specific platform infrastructure.

Moreover, design models facilitate the description of circumstances with concepts that hide complexity, e.g. inheritance. In design, generalisation and specialisation are fundamental in Netnomics Journal 2 (2000), concepts for organising Web sites and Web applications, e.g. describing general navigational concepts, or page designs, which can be refined to more designs that are specific for certain categories of pages. This brings us back to the problem of maintaining integrity and consistency in the course of Web evolution - especially while creating new products by fusing services of existing business application systems.
5.11.2 Virtual Component Store

```xml
<wcml>
  <component>
    <prototype is="MainContent"/>
  </component>
</wcml>
```

XML description

<table>
<thead>
<tr>
<th>File system</th>
<th>Database</th>
<th>WWW</th>
<th>Web-Server</th>
<th>WCML compiler</th>
<th>Script</th>
<th>VRML</th>
<th>HTML</th>
</tr>
</thead>
</table>

Fig. 5.1. Integration and processing of WCML.

In the following section, we introduce WebComposition as an approach to a structured development of Web applications, and we present the WebComposition Markup Language (WCML) that implements the WebComposition concepts by using a platform independent technology without changing existing infrastructure.

5.12 The WebComposition Approach

The WebComposition approach introduces an object-oriented model that uses components as a uniform concept for modeling code abstractions of arbitrary target languages. A component is a simple composite of name-value pairs that are called properties. As the model is object-oriented, its entities may be composed by reusing existing components through aggregation (has-part) and specialisation (inherits-from). Further, as a property may be implemented as a simple function the object-oriented concept of polymorphism is supported. In this way, a component representing a Web page may be composed by referencing components that are responsible for code delivery of a header, body, and footer. Instantiated objects can inherit the capabilities of components by simply use them as prototypes. Thus, the WebComposition model is based on a prototype-instance paradigm, in contrast to a class-based object-oriented model that requires a class definition to instantiate objects. In the WebComposition model, an object is an instance of a component. New Components may be build as composites of properties or as composition of existing components.

(Source:http://citeseerx.ist.psu.edu/viewdoc/download?doi)
through prototyping and referencing. In this sense, the WebComposition approach supports the development of component software as motivated in. Prototyping is a base mechanism of WebComposition to implement code sharing among objects by inheritance. Another possibility to share the code of a component is to allow multiple references on the same component. Sharing is fundamental for reuse and for maintainability as it helps keeping modifications local. This is in contrast to other proposed object-oriented Web models, e.g. The WebComposition approach aims at compositional reuse of design and code. It is well known that reuse facilitates development during an application’s life-cycle. Reuse of applications by support for different systems or machines and the functionality provided by standard libraries like mathematical libraries are only a few examples.

Newer examples of design and code reuse are given by component-based software such as JavaBeans or DCOM/COM In Netnomics Journal 2 (2000), components, or by design knowledge like design patterns and frameworks. WebComposition is not restricted to compose or derive entities from a given set of interfaces; in contrast, any target language code fragment may be utilised. The WebComposition approach proposes a generic method to support the integration of heterogeneous target languages or systems. WCML is an application of XML. XML allows the definition of a tag-based textual format similar to HTML (HyperText Markup Language) for layout, but rather for semantic markup for data. The WCML document type definition describes the markup notation for the components. Components described in WCML reside in a WCML document, which we refer to as a virtual component store, in conformity to the WebComposition system. Like the delivery of HTML documents, the delivery of WCML components, which are described semantically using XML, is easily possible by delivering corresponding WCML documents.

Therefore, we use the established standard XML for content delivery. The deployment through the Web and the generation of code by means of a Java-based WCML compiler is depicted in figure 5.1. The virtual component store delivers a WCML document containing a set of components of arbitrary granularity. It may be implemented using a database system, file system, or Webserver. The components, respectively a XML-based description file, are processed by the WCML compiler. It maps the described components, which are stored in the virtual component store, to the Web implementation model, respectively the target language. The WCML compiler is implemented in Java using a standard XML parser, which is responsible for reading and parsing XML documents/WCML components. Thus, the remaining tasks for the WCML compiler is to accomplish the presentation operation for the components, and to resolve the referenced components or their properties including maintenance of references to “nested” components in different HTML documents. This implementation technology serves for the service-oriented Web application development that we describe in more detail in the following sections.

**5.13 Web-Based Integration of Business Application Systems**

In this section, we will focus on the application of service-oriented Web engineering practice to support business applications. Furthermore, we show how to fuse heterogeneous business application systems to new Web-based products. Service-oriented Web application development A Web-based business application system typically serves customers with the ability to order products or retrieve information. In general, we can abstract from different possibilities a customer has, by saying a Web-based business application provides a service or services to its users. Each product, news item etc. can be modeled as a service that the company provides (cf. figure 5.2). For instance, the sale of mobile phones could be realised through a service called sell mobile phones. Product offers is made of Customer Figure 5.2. Relations between product, services, and application systems. A service captures data about items that a company wants to provide. In addition, it preserves information about how to present this date and about what to do with received data. Therefore, we map a service to a computational object, whose state can be manipulated by the user. Furthermore, the way the user can access the object is defined by Web pages and navigational concepts. Finally, the object must be processed with a set of instructions to initiate further processing steps in the back-end. Using WCML, we compose a service as a set of components:

Service content: A WCML component defined by a set of properties responsible for capturing the different object attributes.
Service layout and navigation: A WCML component defining the layout respectively how the service-content should be displayed. This component may be composed of several other components, e.g. if the service content should be displayed with several Web pages. The latter case would also allow defining complex navigational contexts.

Service processing: A set of instructions or calls to initiate the processing by a legacy system. We propose a more general concept by defining a WCML component capable of generating an independent interchange format. This allows that a service may be processed by different systems in the back-end. As a service itself is a component, which is composed of the three parts described above, the component can be reused, e.g. by prototyping. Applications (products) based on the service-oriented model can be integrated by gluing services to a new product respectively new service. Thus, all components being part of a service are defining a generic integration layer.

Furthermore, a service-component used as a prototype for additional services defines in some way a seamless evolution of the overall application. For example, a company selling a brand-new mobile phone may reuse the existing service of an older mobile phone by using the old service-component as a prototype (similar to an abstract class in object-oriented languages). Merely the service-content must be overloaded with the data of the new telephone. In addition, the service may be provided in several layouts using different kinds of navigation and adapting to the needs of different user classes, e.g. optimised page layouts for mobile users accessing the Web application with Personal Digital Assistants (PDA) that are limited in screen size and resolution. A service-oriented Web application development profits from this abstraction. As pages, navigation, and processing can be grouped easily by accessing the responsible service component, different services may be set up together, and therefore, describing an application conM. Gaedke; K. Turowski (2000): Integrating Web-based E Commerce Applications with Business Application Systems. In Netnomic Journal 2 (2000)figuration.

Different classes of users can be served with the services they really need without developing one service twice. Recurring tasks, which can easily be automated, like scheduling services, generating reports, coordination of dependent services etc., can be executed by programs that extend the functionality of the document generator (the WCML compiler). We call these programs service brokers, as they have knowledge or can retrieve it by analysing the component store, about the semantics of the services they work for. A service broker could be based on the configuration or access-descriptions of services and automatically provide instantiated services for the correspondent audience. Abstraction plays a major role in the development of large-scale Web applications as different people, like marketing-specialists, user interface engineers, and page designers, are involved in or even give the definition of a service in cooperation with the site engineer.

The site engineer will then implement the service by specifying WebComposition components using techniques like prototyping and component sharing as described in an earlier section. This concept allows the use of corporate look and feel layout-components, or the reuse of special design artifacts and navigation structures. The change of design of parts or of the complete Web application by redesigning components is therefore possible. New services based on a given service, which only differs in the service-content, may be created through a service that asks for properties, which the new service should provide, using a form. Services, which have the responsibility of creating new services of a given kind (using a given prototype), are called service-factories. The instantiation process of services and objects is well known and described by creational design patterns. The use of creational design patterns in this way makes a system independent of how its parts are created, composed, and represented. It is evident, that service-factories are an important element for the evolution of a Web application by means of cost reduction and quality improvement. In the following example we discuss how several services, even of heterogeneous application systems can be integrated to define a new product. An example of how the generic integration layer works .Consider the following scenario, given by Web applications of two companies. One company sells mobile phones. Another company provides customers mobile access to the company’s telephone lines. The service-content is defined within the classes Mobile Phone and Customer Account. Processing of user data is delegated to an agent for further communication with legacy systems. The layout of both services is different.
The class Registered Mobile Phone defines a new product respectively Web application by inheritance. The main purpose of this product is to support the business service of selling customers mobile phones, who already come with telephone line access. The WebComposition model supports ordered multiple inheritance [35], allowing a component to have more than one parent. Because properties may have same names in different prototypes, a mechanism like a namespace is needed to avoid ambiguities. Anyway, only layout and navigation have to be changed to provide the new product in a proper layout, e. g. by reusing components for a corpo In Netnomics Journal 2 (2000), rate look and feel and adapting them to the service content. The creation of the new service can simply be done by reusing the existing component descriptions.

Service processing depends on the eventually heterogeneous legacy systems that are represented in Fig. 5.3 by the Order Agent and the Customer Account Agent classes. The classes that may reside in heterogeneous environments have to be called using a standard, distributed, and simple mechanism to enable the ability of reusing services. The exchange of data between different business applications is successfully done by utilising common business standards. The following section will introduce a basic integration layer enabling distributed business applications to exchange data based on EDI and XML. Further, the distributed communication is supported by a distributed and shared memory model, called tuplespace. The basic integration layer – linking business application systems semantically In our mobile phone example we combine two services offered by different business application systems to a new product registered mobile phone. This product consists of the business services sale and registration of a phone card, and sale of a mobile phone. Looking on the connected business process reveals that at least two companies, or two organisational units of the same company, are involved in creating this new product: One that produces and customises the mobile phone, and one that provides the registration. Furthermore, there is an additional information flow between the two companies, which is hidden from the customer. This information flow is related to the management of the physical distribution of the sold good, as phone card and mobile phone should be delivered.
simultaneously, and to the terms of payment, as the mobile phone is often (partly) paid by the phone company, but not by the customer. To automate this information interchange efficiently, communication on a semantic level between different (legacy) business application systems, which may have to interact with each other, we propose the use of a basic integration layer that provides a common (business) interchange format. The basic idea stems from early research work done in the area of computer integrated manufacturing (CIM) to exchange design data between different companies. It is known as CIM interface system. For CIM interface systems it has been shown that communication effort can be reduced from quadratic to linear complexity.

Therefore, what we call product is an intangible good, a so-called business service. This is only a part of what the customer might call product: the registered and customised mobile phone that is finally delivered to him. For the basic integration layer to work, we need different parts: An ontology (a common (and standardised) term set, which covers most business transactions and which is accepted by all participants), a special communication service offered by each business application system, which translates the application systems output to the common term set and vice versa, and that implements the connection to the basic integration layer, and the basic integration layer itself, which preserves and propagates the messages between the business application systems. The question of the right ontology for business transactions leads directly to EDI. EDI presents a way to establish and improve communication between different business partners. Implementing EDI leads to organisational informational surplus values [19], p. 90, e. g. an improved organisational as well as operational structure, or time and cost savings. In Netnomics Journal 2 (2000),

```xml
<MESSAGE>
<Type>Request for quote</Type>
<REQUEST-DATE>12.18.1998</REQUEST-DATE>
...
<Product>
<EAN>230239844531</EAN>
<DESCRIPTION>Mobile phone</DESCRIPTION>
.COLOR>blue</COLOR>
...
</PRODUCT>
...
</MESSAGE>
```

![Fig. 5.3 Creation of new products by inheritance](http://citeseerx.ist.psu.edu/viewdoc/download?doi)
Fig. 5.3. Part of a message generated to request whether a certain mobile phone is available. The most important standard for EDI was established by the United Nations, known as UN/EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport). It standardises electronic exchange of structured information, e.g. orders or invoices, thus permitting a direct communication between different business application systems. Due to fundamental drawbacks, like the missing of semantic rules for quantity or packaging units, the implicit assumption that every organisation implements the same business processes and scenarios and economic (e.g. high implementation costs) as well as organisational (e.g. slow adoption to changing business processes, complicates adjustment of established business process and rules, causes, the UN/EDIFACT standard did not win the expected recognition and implementation extent. Besides other efforts to overcome the problems of UN/EDIFACT, the XML/EDI-Initiative concentrates on economical and organisational drawbacks of the standard by using XML. Taking these as basic ideas and the approach given in we propose to use UN/EDIFACT segment names as standardised term set. Furthermore, we propose to encapsulate business data, which has to be exchanged, in XML tags, which are named according to this term set. This does not implicate any restrictions, since all efforts mentioned above regarding standardisation of uniform business scenarios and semantic rules provide backward compatibility to UN/EDIFACT. By encapsulating business data in XML tags with a given standardised meaning, messages from other business application systems becomes understandable. Furthermore, only important parts of a message may be processed.

DTM DATE/TIME/PERIOD To specify date, time, or period.

... 2005 Date/time/period qualifier, M, an..3
... 137 Document/message date/time
Date/time when a document/message is issued.
... 2380 Date/time/period, C, an..35
... 2379 Date/.. format qualifier, C, an..3
... 102 CCYYMMDD
Calendar date: C = Century;
Y = Year; M = Month; D = Day.
...

Fig. 5.3 shows a typical example for a XML-based EDI message. With this example it is easy to understand how data encapsulated in XML tags get a meaning, and how relevant data only may be extracted by the receiver. Assuming that the receiver would need the article number to process the request for quote, it would be enough to extract the data, which is encapsulated in the EAN tag. Another receiver might need the description and the color as well to process the request. In this case, he would search for the DESCRIPTION and the COLOR tags. The underlying so-called matching process to find the relevant tags, even with concern to nesting, as a COLOR tag within a PRODUCT tag might have a different meaning than a COLOR tag at a different position, is done by using XML parsers. XML parsers are (freely) provided from different sources, e.g. XML4Java from IBM, XMLParser from Sun, or MSXML Parser from Microsoft. However, the tag names in figure 5.3 are not standardised, as they were arbitrarily chosen to be understood by human readers. In order to support an automated inter-machine communication we use UN/EDIFACT segment names as tag names. The segment names are printed bold. Corresponding XML message, which substitutes the REQUEST-DATE tag from figure 5.3. Its meaning is: The request for quote was issued at December 18, 1998.

<MESSAGE>
<TYPE>Request for quote</TYPE>
<DTM DTM2005="137">
<DTM2380>19981218</DTM2380>
<DTM2379>102</DTM2379>
</DTM>
...

<PRODUCT>
With the common term set defined, the next part needed to make the basic integration layer work, is a special communication service, which is offered by each business application system, whose services are part of a certain product. The communication service translates the application systems output to the common term set and receives messages via the basic integration layer that use the common term set. Thus, the communication service consists of two parts: an input service, and an output service. The output service translates the messages of a certain business application system to XML-based UN/EDIFACT, and has to be implemented for each application system individually. To implement the output service, which translates XML-based UN/EDIFACT messages to a format that can be understood by the respective application system, the XML parsers described above can be reused. Again, input and output service are “accessed” via WCML components, which capture the code needed for initiating communication, and may be implemented as, e. g. Java-based software agents as proposed.

To implement the basic integration layer, we use a tuplespace, which serves as a distributed and shared data space. The data items that the tuplespace is capable to handle are tuples. Marking a tuple semantically can be done by using XML, and thus enhancing the tuplespace to deal with XML tuples, which are simply XML documents, especially XML/EDI data. The XML tuplespace provides the functionality to store structured data and to enable distributed processes, e. g. the mentioned software agents, to access and modify XML tuples. Data conform to a DTD (Document Type Definition) is said to be valid XML. In this case, a XML parser could check incoming data against the rules defined in the DTD and check if the data was structured correctly. Data is known as well-formed XML if it is structured as defined by XML and sent without a DTD. The XML tuplespace supports the handling of both, valid and well-formed XML, giving the processes connected to the XML tuplespace the freedom to exchange and transfer any information. WCML component is accessed via WCML component

5.13.1 Product

GUICommunication is accessed via used to generate the communicationrelated components of the product .Input and output services as WCML components. The functions provided by the XML tuplespace are in, out, and read. They are provided by a XML tuplespace, which is addressed by a given XML tuplespace URL, as described in the following: out(XML tuplespace URL, DTD, XML tuple) The function out() puts a XML document, specifically a XML/EDI document into the XML tuplespace without overwriting existing XML tuples. If the XML tuple is sent along with a DTD, the XML tuple is said to be a valid XML tuple, otherwise a wellformed XML tuple. Valid XML tuples ensure that the data is conforming to a given grammar provided by the DTD.in(XML tuplespace URL, DTD, XML tuple-query) The function in() returns a XML tuple from the XML tuplespace if a XML tuple matching to the DTD and the given XML tuple-query can be found. The returned XML tuple will be deleted in the XML tuplespace. read(XML tuplespace URL, DTD, XML tuple-query)The function read() acts like the in() function, but a matching tuple will not be deleted. A found tuple remains in the tuplespace. To access an existing XML tuple the XML tuplespace provides the functionality of the XML Query Language (XQL) as proposed by [26]. Using XQL allows defining three types of searches: Actual Actual queries are all XQL-statements that search for an element with unique criteria. The XQL-query /PRODUCT/[@ID="pxz-23"] could be used to find the following

XML Tuple:

<PRODUCT ID='pxz-23'>
<EAN>230239844531</EAN>
<DESCRIPTION>Mobile Phone</DESCRIPTION>
</MESSAGE>
5.13.2 Formal

Formal queries are searches for XML tuples by considering the XML tuple structure. These queries do not need to find one and only one result. The following query may be used to search for any Mobile Phone that is in stock: \[\text{PRODUCT/DESCRIPTION} .= \text{"Mobile Phone"}\]

5.13.3 Semantic

Semantically, queries are all queries that focus on the structure of XML tuples instead of values. Semantic queries may be used to find tuples of a certain class of XML tuples. As an example, the following query could be used to check if the tuplespace contains products with an EAN-Code: \[\text{PRODUCT} \cdot \text{/EAN}\] As the client process accesses a tuplespace through HTTP (HyperText Transfer Protocol), standard authentication and cryptographic mechanisms may be used to secure business data interchange.

5.14 Comparative Viability and Economic Opportunities

As mentioned earlier [12], the Web implementation model is too coarse-grained to be useful in the sense of application of fine-grained software engineering concepts for Web application development. On the other hand, the basic principles of the Web namely a heterogeneous resource-based environment, which allows an autonomous administration of these resources, have to be preserved. The creation of new markets for Web-application components or even services can therefore only be done, if those contradictions can be solved. In the following we focus on this dilemma and discuss the viability of the generic integration layer in terms of technical and economical demands. From a more technical point of view, major demands for application of software engineering techniques to Web-applications and a generic integration layer are driven by: Fine-grained modeling: As mentioned earlier, it is necessary to compose a Webapplication from fine-grained software artifacts. Object-oriented modeling and implementation: Most design-models are object-oriented – it should therefore be possible to automatically map the model to an implementation. Support for Object-oriented concepts:

Some concepts are very useful to fulfill business needs like strategy-oriented behavior, cf. the Strategy pattern in This yields to dynamic and other concepts of object-orientation, e. g. polymorphism and dynamic binding. Support for heterogeneous platforms: Code-creation for any and with any platform using the same coding concepts based on the principles of the Web Comprehensive technology: An implementation technology should generally be applicable. The technology should not only support resource generation, but also business application interaction. Reuse: As mentioned earlier, it has been shown that software reuse yields to quality improvements and cost reduction. From an economic point of view, major demands for application of software engineering techniques to Web-applications and a generic integration layer are driven by: Reuse: Obviously, software reuse is not only important for technical demands. The composition of services to new services respectively products does not only reuse existing component-based software, but also reuses business solutions. This general approach may establish new markets as business solutions can be reused as well. Commercialisation: Since reuse is not only restricted to the reuse of artifacts within a certain development department, we have to look on the marketability of the supported components and whether there are marketable components at all. Configuration: The success of selling goods and services via the Web does not at last rely on supporting to adapt to dynamically changing markets, especially if some of these goods or services are “digital”. For this reason, the possibility to configure Web-based applications (and services) is an important characteristic of a base technology for Webbased business applications.

Besides this more technical context, our approach yields added value in a broader context especially if we look on new competitive strategies and innovative organisational structures. For these areas, it becomes an important enabling technology. Business processes have been stretched across organisational borders to gain competitive advantage through the combination of individual core competencies, or solely because individual organisations lack specific knowledge. Nowadays, organisations are worldwide faced with growing competitive pressure through open markets and the movement from seller markets to buyer markets. Therefore, they seek to replace their (legacy) application systems with better, network-based architectures. The constant spreading use of network infrastructure (like the Internet) involves new possibilities and adds a new quality to inter-organisational cooperation. Companies may now cooperate not only locally, but also globally with any company offering needed assets (knowledge as well as products) at best quality and lowest costs to gain competitive advantages.
This is especially necessary when competitive strategies, like mass customisation, are succeeding. A network of manufacturers, suppliers, and retailers has to be established to put mass customisation into action [17], pp. 447-449. Mass customisation enables businesses to offer individual products at prices comparable to mass production, and comparable short shipment times. Tighter integration of suppliers and the coordination of inter-organisational production processes are critical success factors for mass customisation. In order to provide the necessary flexibility in such alliances the partnership should be as loose as possible, i.e., it should be formed for a limited period of time and a limited product palette. From a customer’s viewpoint, the alliance seems to be a single company. In fact, it is a virtual enterprise. The concept of virtual enterprises has its origin in the idea of the agile enterprise. It is a temporary network of independent companies or natural persons, who have the same rights and cooperatively produce a specific good or service. The collaborators particularly bring in their core competencies. Further, there is no institutionalised common management. The virtual enterprise appears to others as a single company and is coordinated using a suitable information system, cf. e.g. However, it is possible that over time the virtual enterprise becomes a conventional group or fusion of companies.

Especially, if it is successful with its mass customised products in the market for a longer period. In this case, the period in which a virtual enterprise exists is a preparation phase for establishing a steady cooperation of companies. In such cooperation’s, the companies are connected through conventional supplier-producer relationships. The process of changing a virtual enterprise to a steady cooperation can be incremental. It may start with a core group of the members of the virtual enterprise, which is extended by adding more members over time. This does not exclude the case that some companies stay loosely coupled. Particularly, if their products or skills are only demanded sporadically.
Summary

- In business to business (B2B) applications, the buyers, sellers, and transactions involve only organisations.
- It covers a broad spectrum of applications that enable an enterprise to form electronic relationships with its distributors, resellers, suppliers, customers, and other partners.
- By using B2B, organisations can restructure their supply chains and partner relationship.
- The major ones are sell-side marketplaces, buy-side marketplaces, and electronic exchanges.
- In the sell-side marketplace model, organisations attempt to sell their products or services to other organisations electronically, from their own private e-market place and/or from a third-party site.
- The key mechanisms in the sell-side model are: (1) electronic catalogs that can be customised for each large buyer and (2) forward auctions.
- The sell-side model is used by thousands of companies and is especially powerful for companies with superb reputations.
- The buy-side marketplace is a model in which organisations attempt to buy needed products or services from other organisations electronically, usually from their own private e-marketplace.
- The buy-side model uses EC technology to streamline the purchasing process in order to reduce the cost of items purchased, the administrative cost of procurement, and the purchasing cycle time.
- Purchasing by using electronic support is referred to as e-procurement.
- In group purchasing, the requirements of many buyers are aggregated so that they total to a large volume, and may merit more seller attention.
- In the variation of e-procurement, known as desktop purchasing, suppliers’ catalogs are aggregated into an internal master catalog on the buyer’s server, so that the company’s purchasing agents (or even end users) can shop more conveniently.
- Sales Force Automation (SFA) is a technique of using software to automate the business tasks of sales, including order processing, contact management, information sharing, inventory monitoring and control, order tracking, customer management, sales forecast analysis, and employee performance evaluation.

References


Recommended Reading

Self Assessment

1. In business to business (B2B) applications, the buyers, sellers, and transactions involve only _______.
   a. divisions
   b. organisations
   c. formations
   d. partitions

2. In the __________ marketplace model, organisations attempt to sell their products or services to other organisations electronically, from their own private e-market place and/or from a third-party site.
   a. sell-side
   b. buy-side
   c. customer
   d. consumer

3. In addition to auctions from their Web sites, organisations can use __________ auction sites to liquidate items.
   a. normal
   b. prohibited
   c. non-prohibited
   d. third-party

4. The __________ marketplace is a model in which organisations attempt to buy needed products or services from other organisations electronically, usually from their own private e-marketplace.
   a. sell-side
   b. buy-side
   c. customer
   d. consumer

5. Purchasing by using electronic support is referred to as __________.
   a. e-mailing
   b. e-tendering
   c. e-procurement
   d. e-tailing

6. In ________, the requirements of many buyers are aggregated so that they total to a large volume, and may merit more seller attention.
   a. single purchasing
   b. group purchasing
   c. desktop purchasing
   d. material purchasing

7. __________ is most suitable for maintenance, replacement, and operations indirect items, such as office supplies.
   a. Single purchasing
   b. Group purchasing
   c. Desktop purchasing
   d. Material purchasing
8. E-Market Places in which there are many sellers and many buyers are called _______ exchanges.
   a. Private
   b. Public
   c. Protected
   d. Quick

9. _______ can be done not only between business partners, but also within organisations.
   a. E-commerce
   b. E-government
   c. E-tendering
   d. E-retail

10. ________ Automation is a technique of using software to automate the business tasks of sales.
    a. Commerce
    b. Sales Force
    c. Major
    d. Minor
Chapter VI
E-Government and Consumer-To-Consumer EC

Aim
The aim of this chapter is to:

• explain about e-government
• elucidate customer to customer e-commerce
• explore C2C auctions

Objective
The objective of this chapter is to:

• explicate implementing e-government
• define personal services to C2C
• enlist classified ads

Learning outcome
At the end of this chapter, you will be able to:

• enlist e-government activities
• describe C2C e-commerce
• identify e-government in western Australia
6.1 E-Government

As e-commerce matures and its tools and applications improve, greater attention is being given to its use to improve the business of public institutions and governments (country, state, county, city, etc). E-government is the use of Internet technology in general and e-commerce in particular to deliver information and public services to citizens, business partners and suppliers, and those working in the public sector. It is also an efficient way of conducting business transactions with citizens and businesses and within the governments themselves.

E-government offers a number of potential benefits: It improves the efficiency and effectiveness of the functions of government, including the delivery of public services. It enables governments to be more transparent to citizens and businesses by giving access to more of the information generated by government. E-government also offers greater opportunities for citizens to provide feedback to government agencies and to participate in democratic institutions and processes. As a result, e-government may facilitate fundamental changes in the relationships between citizens and governments.

E-government applications can be divided into three major categories: government- to-citizens (G2C), government-to-business (G2B), and government-to-government (G2G). In the first category, government agencies are increasingly using the Internet to provide various services to citizens. An example is electronic benefits transfer (EBT), in which governments (usually state or national) transfer benefits, such as Social Security and pension benefits, directly to recipients’ bank accounts or to smart cards. Governments also are using the Internet to sell to or buy from businesses. For example, electronic tendering systems using reverse auctions are becoming mandatory, in order to ensure the best price for government procurement of goods and services. Chen (2003) presents several specific e-government initiatives. For an example of one initiative in Australia.

6.1.1 Implementing E-Government

Like any other organisation, government entities want to move into the digital era, becoming click-and-mortar organisations. However, the transformation from traditional delivery of government services to full implementation of online government services may be a lengthy process. The business consulting firm Deloitte and Touche conducted a study (see Wong, 2000) that identified six stages in the transformation to e-government:

- Stage 1: Information publishing/dissemination.
- Stage 2: “Official” two-way transactions, with one department at a time.
- Stage 3: Multipurpose portals.
- Stage 4: Portal personalisation.
- Stage 5: Clustering of common services.
- Stage 6: Full integration and enterprise transformation.

The speed at which a government moves from stage 1 to stage 6 varies, but usually the transformation is very slow. Deloitte and Touche found that in 2000, most governments were still in stage 1 (Wong, 2000). The implementation issues that are involved in the transformation to e-government depend on which of the six stages of development a government is in, on the plan for moving to higher stages, and on the available funding. In addition, governments are concerned about maintaining the security and privacy of citizens’ data, so time and effort must be spent to ensure that security. According to emarketer.com (October 2, 2002), the number of U.S. government Web sites with security policies increased from 5 percent in 2000 to 34 percent in 2002; the percentage of those with privacy policies increased from 7 percent in 2000 to 43 percent in 2002. In general, implementation of G2B is easier than implementation of G2C. In some countries, such as Hong Kong, G2B implementation is outsourced to a private company that pays all of the start-up expenses in exchange for collecting future transaction fees. As G2B services have the potential for rapid cost savings, they can be a good way to begin an e-government EC initiative.
6.2 Customer to Customer E-Commerce

Customer to customer (C2C) e-commerce refers to e-commerce in which both the buyer and the seller are individuals not businesses. C2C is conducted in several ways on the Internet, where the best-known C2C activities are auctions.

6.2.1 C2C Auctions

Regardless where people are, in dozens of countries, selling and buying on auction sites is exploding. Most auctions are conducted by intermediaries, like eBay.com. Consumers can select general sites such as eBay.com or auctionanything.com, and they can use specialised sites such as buyit.com or bid2bid.com. In addition, many individuals are conducting their own auctions. For example, greatshop.com provides software to create C2C reverse auction communities online.

6.2.2 Classified Ads

People sell to other people every day through classified ads in newspapers and magazines. Internet-based classified ads have one big advantage over these more traditional types of classified ads: They offer a national, rather than a local, audience. This wider audience greatly increases the supply of goods and services available and the number of potential buyers. For example, infospace.com/info.cls2k contains a list of 3 million job openings and about 500,000 cars, compared with the much, much smaller numbers you might find locally. Another example is recycler.com. Often, placing an ad on one Web site brings it automatically into the classified sections of numerous partners. This increases ad exposure, at no cost. In addition, Internet-based classifieds often can be edited or changed easily, and in many cases they display photos of the product offered for sale. Like their counterparts in printed media, classified ad Web sites accept no responsibility for the content of any advertisement. Advertisers are identified by e-mail address. A password is used to authenticate the advertiser for future changes in an ad. Most classified ads are provided for free. The major categories of classified ads are similar to those found in the newspaper: vehicles, real estate, employment, general merchandise, collectibles, computers, pets, tickets, and travel. Classified ads are available through most Internet service providers (AOL, MSN, etc.), at some portals (Yahoo, etc.), and from Internet directories, online newspapers, and more. To help narrow the search for a particular item on several sites, shoppers can use search engines. Once users find an ad and get the details, they can e-mail or call the other party for additional information or to make a purchase. Classified sites generate revenue from affiliate sites.

6.2.3 Personal Services

Numerous personal services are available on the Internet (lawyers, handy helpers, tax preparers, investment clubs, dating services). Some are in the classified ads, but others are listed in specialised Web sites and directories. Some are for free, some for a fee. Be very careful before you purchase any personal services. Fraud or crime could be involved. For example, a lawyer online may not be an expert in the area they profess, or may not deliver the service at all.

6.2.4 Support Services to C2C

When individuals buy products or services from individuals, they usually buy from strangers. The issues of ensuring quality, receiving payments, and preventing fraud are critical to the success of C2C. One service that helps C2C is payments by companies such as Paypal.com. Another one is escrow services, intermediary services that take the buyer’s money and the purchased goods, and only after making sure that the seller delivers what was agreed upon, deliver the goods to the buyer and the money to the seller (for a fee).

6.3 E-Government in Western Australia

The focus of the Western Australian (WA) government agency Contract and Management Services (CAMS) is to develop online contract management solutions for the public sector. CAMS Online allows government agencies to search existing contracts to discover how to access the contracts that are in common use by different government agencies (for example, light bulbs or paper towels bought by various government units). It also enables suppliers wanting to sell to the government to view the current tenders (bids) on the Western Australia Government Contracting Information Bulletin Board, and download tender documents from that site. CAMS Online also provides government departments and agencies with unbiased expert advice on e-commerce, Internet, and communication services, and
how-to be on building a bridge between the technological needs of the public sector and the expertise of the private sector. The center also offers various types of support for government procurement activities. WA’s e-commerce activities include electronic markets for government buying. The WA Government Electronic Market provides online supplier catalogs, electronic purchase orders, and electronic invoicing, EFT, and check and credit card payments. The Victoria government and the new South Wales government in Western Australia spent over $500 million (U.S.) on e-procurement systems under the Government Electronic Market System (ecc.online.wa.gov.au/news, 19, September 2002).

Government-to-government e-commerce functions include Data Link, which enables the transfer of data using a secure and controlled environment. Data Link is an ideal solution for government agencies needing to exchange large volumes of operational information. Another G2G function is a videoconferencing service that offers two-way video and audio links, enabling government employees to meet together electronically from up to eight sites at any one time. In addition to G2B functions, the G2G Web site also offers online training to citizens. A service called West link delivers adult training and educational programs to remote areas and schools, including rural and regional communities.

The Institute for Prospective Technology Studies (IPTS) has asked TNO and the Danish Technological Institute (DTI) to carry out a study which aims to provide European policy makers with strategic insights for future policy on eGovernment. The study aims to analyse the potential of disruptive technology trends - and especially ICT - in providing challenges and opportunities for new models of eGovernment, public governance, public administration and democracy. It builds on a vision on eGovernment for 2010, which was developed by IPTS. The study acts within the political framework of the Lisbon objectives and the construction of the European Research Area. The IPTS eGovernment vision for 2010 was developed as a result of a workshop in March 2004 in Seville.

This vision points at the role of eGovernment as an enabler for better government, articulated around ‘two pillars’: the first being the pursuit of cost-effectiveness and efficiency, and the second the creation of public value. The approach in our study takes this vision as starting point and attempts to look further forward (to 2020). This study approaches the two pillars not as independent and equal pillars, but rather as ‘means’ and ‘ends’, with the interrelationship that this implies. This means that the creation of public value is the ultimate goal, and efficiency and effectiveness are only means to realise this higher end. Public value is related to the outcomes of eGovernment (on a broader economic, social and institutional level), and thus goes further than mere public sector or public service modernisation, which is the usual more narrow focus of eGovernment (research). The study also attempts to look beyond the current deployment and use of ICTs by governments and public administration, and particularly focuses on ‘disruptive’, or with a more positive connotation, ‘promising’ technologies: technologies which we assume will contribute to the transformation of (future) governmental tasks and activities. Promising technologies are those technologies which are both drivers and enablers of fundamental governmental change, needed to cope with future societal challenges.

Transformative technologies may lead to a significant change in the existing establishment, open the gate to new players, lead to new institutional arrangements, change the value chain and relationship between actors and bring in new solutions to the complex problems that current governments are facing. The general objective of the study can be broken down into the following more detailed goals and research steps: To build a taxonomy which describes the main existing and potential government activities, tasks and actions, which may be supported and enhanced by new applications and new use of ICT? To identify, select and analyse those disruptive ICT technology trends which may have a transformative impact on future governmental tasks and roles. To explore the potential innovation impact of new disruptive ICT technology for governmental roles and tasks (combination of 1 and 2). To build – through a scenario exercise – the potential institutional, economic and social changes in the ways in which governance, public administration and democracy might be fulfilled.

To study the adaptability of the tools for measuring the impacts and changes envisaged within eGovernment activities, to the scenarios the evolution of technologies. To draw research challenges and policy recommendations based on the hypotheses formulated by the study. European Commission (2004), “eGovernment in the EU in the next decade: vision and key challenges”, C. Centeno, R. van Bavel and J.C. Burgelman, Final Draft version, August 2004, DG JRC, Institute for Prospective Technological Studies, Seville, Spain. See Millard, J. 2003, ePublic services in Europe: past, present and future – research findings and new challenges, prepared for the European Commission’s Institute for Prospective Technological Studies (IPTS), Seville, Spain, September 2003. Each of these goals has been the
starting point for a specific study, which have been reported in six different research sub-reports containing most of the detailed and rich case-related material on which the analysis is based. The report you are reading now is the synthesis report, which brings together the main results and key conclusions of these different studies. The first step was to develop a taxonomy of key governmental roles, tasks and activities, which could be supported and enhanced by ICT. We have developed an overarching framework which reflects historical transformations in public values since the establishment of democratic constitutional states in Western countries. This framework is depicted as a ‘house of values’, an edifice to which new storeys and rooms have been added and furnished over the course of centuries. Each storey of this house originated as a result of the major societal transitions that occurred during previous centuries.

Whereas in the 18th century liberal values were central, in the 19th and the 20th centuries Western democracies evolved towards fully fledged welfare states. The dominant model on which these 20th-century welfare states were built is the Weberian bureaucracy of which functional division, centralisation and hierarchy are key characteristics. The characteristics of the Weberian bureaucracy, however, do not fit too well with ICT trends such as horizontalisation, decentralisation and the intertwining of activities and tasks. On the other hand, basic values of the foregoing centuries, such as integrity, legitimacy, accountability and equality remain of key importance for future government. Hence, a major challenge for governments is to reinvent models of government in such a way that they match current and future ICT trends and at the same time – ensure existing and future values of good governance. Each storey in our ‘house of values’ represents certain public values.

The value or ‘ends’-based framework is broken down at a highly detailed level into ‘means’, which refer to the roles, functions and activities of government. Inspired by among others: Bovens, M and Loos, E (2002) The digital constitutional state: democracy and law in the information society, Taxonomy of governmental role, Disruptive technologies, Hot spots for ICT-driven governmental transformation Tool for impact measurement, Scenarios for future eGovernment, Research and policy challenge government that contribute to the realisation of these layered ‘ends’. We have distinguished between the following values:

- **Liberal values (18th century):** covering constitutional and subsidiarity structures; the legal framework: law, regulations and rules; law enforcement, defence and security; personal justice; and individual rights.
- **Democratic values (19th century):** covering citizenship; democratic participation through representation; democratic participation through direct engagement; engaging private interests; and developing the plural society.
- **Social values (20th century):** covering how needs for and responses to socio-economic support are determined; service design and production; service delivery; inclusion of all; environmental sustainability; place development and quality of life.

**Empowerment values (21st century):** covering how citizens, communities, groups and interests in society can be empowered to further their own as well as collective benefits; extending subsidiarity and reciprocity; governance coherence and balance; transparency and openness; ethics and accountability; trust; empowering the public sector as an individual actor; empowering the private sector; personalising services for individual users; and empowering the individual service user. The fourth layer particularly represents the future 21st century model of public values and government roles and a stage of transformation, which is now – at the start of the 21st century – only rudimentarily beginning to take shape. Our first conclusion, therefore, is that a shift towards empowerment represents the most important transformation of governmental roles in the coming decades.

In step 2 we have identified ‘promising’ technologies that may contribute to the enhancement of (future) governmental tasks and activities. Obviously, what can be seen as promising depends on what one wants to accomplish. As stated, from our perspective promising means ‘creating public value’ (in an efficient and effective way). Due to, among other factors, technological changes, the context in which government has to ensure these values has changed. In the past century, the industrial society has transformed into an information society.
Traditional government, originally built on principles of the industrial society, is less and less able to face the complex demands and problems of the information society. The ‘stove-pipe’ architecture of public administration, but also a changing power balance in the political arena, hampers governments in fulfilling their tasks and in gaining citizens’ trust. In this light we consider promising technologies to be necessarily transformative technologies; technologies which enable the governmental scenery to change in such a way that societies are more able to cope with these emerging societal challenges.

Transformative technologies may lead to a significant change in the existing establishment; open the gate to new players, lead to new institutional forms, change the value chain and relationship between actors and bring in new solutions to the complex problems that current governments are facing. In literature the notion ‘transformative’ – when related to technologies – is often called ‘disruptive’. Which technologies have this potential? One way of looking at this is to say that particularly the (large scale) deployment of technology is transformative. However, not all technologies have a transformative When New Technologies Cause Great Firms to Fail, Harvard Business School Press, Boston, Massachusetts, 1997 In the FISTERA project disruptive technologies were defined as: technological evolutions that lead to a disruption; this is a significant change in the scenario involving actors and the rules of the game (WP2 Key European Technology Trajectories, First Report on Key European Technology Trajectories, 30 September 2003). 10 Carlota Perez, Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages, New York: when they are widely used; they must also have an intrinsic potential to become transformative. In our view, transformation can be enabled by high deployment of existing and by the introduction and use of new disruptive technologies.

However, in the governmental realm, a lot of existing technologies with transformative potential are not fully deployed yet and thus have not been able to fulfil their innovative potential yet. Therefore, we expect that in the coming 10 to 15 years transformation will largely result from a process of adaptation and assimilation of existing technologies. Whereas in other sectors far-reaching deployment of existing technologies (such as social software and mobile devices) is or has already taken place, the exploitation of these technologies in government lags behind. In short, in order to select technologies we have defined a transformative technology as a technology which:

• is broadly deployed,
• has an intrinsic transformative potential,
• has reached a certain stage of maturity and
• has the potential to stimulate disruption.

First we prepared a long list of technologies, with a group of technological experts from TNO, focusing on the disruptive potential of the technologies themselves. Then we clustered and reduced this long list focusing on the disruptive potential these technologies may have for governmental functions. This has led to the selection of the following key technologies:

• Mobile devices (PDAs, wearable computers, MP3-players, mobile phones)
• Intelligent agents (and robotics),
• Sensors
• Language processing technologies
• Semantic technologies
• Serious games
• RFID and biometrics,
• ICT infrastructures (WiFi, WiMAX, Broadband),
• Web 2.0 technologies (social software)
• GRID
The first two steps culminated in an analysis in which the roles and tasks of governments, as described in the taxonomy, were confronted with the characteristics of promising technologies. This has resulted in the identification of what we have labelled ‘hot spots’ of governmental transformation. The hot spots were selected using the following criteria:

- A combination of a mature technology with a governmental role
- Which leads to governmental transformation
- Within the majority of EU member states, and
- Within the timeframe of 15 years.

Deployment and maturity of technologies were studied by gathering in-depth data on usage and usage barriers, market perspectives, application range and technological maturity and disruptive potential has been understood as a complete change of someone or something. (An example is the emergence of new balances of power, the adoption of new paradigms, the engagement of new stakeholders or institutional changes). The significance of a change determines whether a change is transformative or not; changes have to be large enough, general enough, and durable enough to affect considerably the character of (a setting of) organisations and to be called transformative. The four layers of governmental roles and responsibilities we identified in task 1 were used to assess the transformative impact of the technology, while justifying our assessment with literature, argumentation or examples. This has resulted in the identification and clustering of combinations of roles and technologies into seven ‘hot spots’ of this report: Transparency provoking change ICTs are generally supposed to stimulate transparency. Promising technologies influence transparency in many ways: PDAs and mobile phones, which face a pervasive and still increasing popularity, enable ubiquitous access to all kind of information resources.

- Web technology, workflow and knowledge management systems stimulate the creation and dissemination of digital information.
- Technologies such as intelligent agents and semantic web support access to highly personalised information.
- Infrastructural technologies such as broadband, WiFi and WiMAX support high-speed and largebandwidth data exchange.

Technology-driven increased transparency will have a wide range of impacts. Firstly, it will affect the power balance between governments and citizens (G2C) which will be based more on information symmetry and thus will increase the possibilities of citizens to exert effective control over their governments. Secondly, transparency will impact the relation between governmental agencies (G2G): it will stimulate and sometimes force governmental organisations to align their policies and procedures. It may increase competition between governmental agencies as well. Transparency may furthermore transform governmental culture, as it pushes governments towards opening up their traditionally quite closed and hierarchical organisation culture. Transparency may finally weaken the position of governments, as it will become more vulnerable to criminal activities. Changing the accountability paradigm in line with increased transparency, ICTs will also force governments to continuously account for their policy and decision making. Furthermore, and more fundamentally, new – more distributed – forms of accountability need to be developed. A broad range of technologies are expected to impact accountability in several ways: The decentralising character of web technology and social software will stimulate cross boundary cooperation and the involvement of new stakeholders and therefore asks for new forms of accountability.

- Opportunities provided by technologies such as workflow, knowledge management systems and intelligent agents to computerise procedures and decision making may support a clear and unambiguous practice.
- The monitoring rationale of technologies such as workflow and knowledge management systems may increase the quantification of the accountability process.
- The growing deployment of these technologies drives a trend towards networked models of government.
This development will raise new questions on existing accountability constructions in EU Member states. Moreover, ICTs may strongly enforce accountability mechanisms. More and more accessible public sector information enables citizens to monitor government and to hold government practitioners and politicians accountable for their actions. Finally, ICTs may also provide governments with effective tools to fight corruption. Those EU member countries, which face a high level of administrative corruption, may profit from technologies, such as workflow systems, in order to combat corruption. New forms of policing and law enforcement Many of the promising ICTs we have distinguished increase the surveillance capabilities of governments, but also change the set of actors involved in law enforcement tasks. The large scale deployment of these technologies will affect the ability and the way in which the state exerts its role in the domains of law enforcement, defence and security.

PDAs, digital cameras, etcetera, extend existing the overall surveillance capacity and enable improved direct intervention in cases perceived to conflict with the prevailing rule of law. They enable new stakeholders in matters of law enforcement and security which may lead to a decentralisation of (police) tasks. Mobile infrastructures such as WiMax, WiFi, and Broadband enable operating staff of public authorities to remain fully connected to the virtual infrastructures present within offices, adding to the self-reliance capacity of operating staff and thereby changing work processes and the work flow within public authorities.

The decentralising character of social software enhances the opportunity for and capacity of individuals to actively engage in public affairs and influence decision making processes

Enabling technologies such as RFID and sensors provide the opportunity to create fully automated surveillance systems and thereby extend and improve existing surveillance and monitoring capacity. As a result, both private organisations (such as security firms) and citizens will be increasingly involved in law enforcement tasks. Boundaries between stakeholders will become blurry. Law enforcement is increasingly pervasive (cameras, photos, etc.) and can be carried out more effectively (by using robots, RFID, etc.). ICTs not only increase the possibilities to gather data but also to manipulate data (and thus evidence in court ruling). Changing the privacy paradigm

The majority of the technologies we selected affect privacy. Most of the mentioned technologies are enablers of sophisticated and unnoticed data and information gathering. They enable the gathering of very detailed personal data, the construction of profiles that may be used to identify specific groups of people, as well as the tracking and tracing of people. This may take place in real time or in virtual space, on the basis of aggregated data. The role of technology in safeguarding the right to privacy is ambiguous: technologies are both a potential protector and an offender of privacy. On the one hand, government will be able to monitor individual citizens in greater detail, which increases possibilities of privacy infringements. On the other hand, ICTs may empower citizens to combine forces and to promote and protect their privacy interests. The sophistication of developing ‘avoidance technologies’ and technologies to remain anonymous in electronic communication practices (or in search techniques) will also increase.

6.4 New Countervailing Powers

Many of the promising technologies show a potential to open-up traditional forms of democratic involvement in governance, and to develop new ways to engage with individual citizens, communities, and advocacy/interest groups. These may thereby be empowered to become a new type of countervailing power to government. This can both supplement and change existing power structures in government itself, as well as in established power centres in the private and institutional sectors.

Social software and social network tools are potentially revolutionary as they offer relatively cheap, easy to use and rapid means to informal as well as formal groups to organise themselves, develop common agendas, implement actions, and exert pressure on other power centres and stakeholders.

This effect is even enhanced by the use of mobile devices, which enable the organisation and coordination of interest group activities in a just in time, just in place way. Similarly, the use of gaming, language processing and semantic technologies by groups can be transformative in the sense that new competences and new types of understanding and interpretation of information can be developed, which can underpin collective action. The strengthening of
bottom-up, often informal democratic involvement and the countervailing power which this engenders may cause a shift in the existing power balance between individuals, civil society, social movements and government. In terms of more far-reaching impacts, these technologies contribute to an on-going fragmentation of interests and thus of the system of political representation and a shift towards a more fluid, single issue or single event based politics with less institutional coherence. This is coined by Bimber as ‘accelerated pluralism’. On the other hand the effect of this trend may also be that it will bind people more tightly together in social networks and thus enforce their position as countervailing power.

6.5 Networked Government

This hot spot points to the trend that the horizontal, decentralised and location/time-independent character of technologies will increasingly drive networked, decentralised and multi-stakeholder models of government. The key technologies which drive and support this trend are Infrastructural network technologies such as WiFi, WiMax, broadband and web technologies, which support the ubiquitous seamless connectivity and distribution of systems and services between stakeholders, including users. GRID, knowledge management and workflow technologies supporting the optimisation and interoperability of ICT resources amongst stakeholders by stimulating standardisation of languages, application, interfaces, etcetera, which could lead to organisational realignment, re-structuring and process innovation. The role of social software, social network tools, and technologies for decentralised service creation, all of which enhance bottom-up and personalised communication and information sharing. This promotes de centralised and networked collaboration, participation and alternative service provision, which in turn stimulates new forms of organisation and changes to power balances. When governments increasingly work together with other stakeholders, organisational and institutional arrangements and structures along the value chain have to change. A need for appropriate constitutional and political frameworks, legal and regulatory conditions, and mindsets and cultures will arise. The respective technologies can assist in transforming the organisational processes and resources of the actors and agencies involved, and, crucially, join them together to provide integrated and interoperable systems.

6.6 Intelligent and Responsive Government.

Here the focus is on the greater capacity of governments to collect, store, process and apply information. More and more useful information is being produced though knowledge-based, intelligent systems and is diffused in all kinds of societal networks, as well as across the public sector itself. This enables governments to design, produce and deliver higher quality and much better targeted and responsive services which are precisely tailored to meet the needs of specific individuals or groups. Promising technologies which are most relevant in this context are Wearables, sensors, intelligent agents, robots, RFID, biometrics, GRID, and new tools for storage and retrieval which identify, collect and store information and make it available to government for intelligent processing. Knowledge management systems, semantic web, web technologies, plus PDAs and other mobile devices enable governments to convert information to intelligent knowledge and services, and thus to increase the responsiveness of government through new product and service innovations, and to deliver services to different types of users in new ways.

The identification, data collection, storage and processing technologies described above could develop into an ambient technology and thus an ambient government environment. Here, public systems and services will be everywhere, fully interoperable (in both technical and non-technical terms), and instantly and unobtrusively accessible through constant monitoring via network sensors and receptors of who is where, and what their needs are in changing situations. In such an ambient intelligent space, it will be even more important that governments ensure the reliability, resilience and pervasiveness of networks. Open source and open standards will be essential ingredients. Moreover, ensuring inclusion of all and the development of new forms of digital rights management will be important issues here.

The Internet and Political Transformation: Populism, Community, and Accelerated Pluralism, Polity, We have concluded earlier that the shift towards empowerment represents the most important transformation of governmental roles in the coming decades. What we have seen by now is that ICTrelated innovations are particularly important for driving this shift: each hot spot clearly shows signs of this empowerment trend: taken together the transformations described in the seven hot spots all cumulatively contribute to this shift. Different technologies support individuals in acquiring knowledge, organising themselves, to create, to produce and to deliver anytime and anywhere –. And thus: to be informed about government, to participate in public debates, to hold government accountable and to produce and deliver services that hitherto were collectively provided.
It is particularly this empowerment trend which will affect the raison d’être of governments. In the seven hot spots we found the following strong indications for this shift:

- Transparency: as citizens and other stakeholders become better-informed and more aware of governmental activities they are better equipped (empowered) to directly address governments about their needs;
- Accountability: networked forms of governance enable citizens and other stakeholders to exert influence on the process of accountability but at the same time requires them to take responsibility for shared activities;
- Policing and law enforcement: both private and civic players are more and more enabled to take over policing and law enforcement roles, leading to co-production of roles or – in a more radical scenario – to a certain marginalisation of governments as law enforcers;
- Privacy: technologies are both a potential protector and offender of privacy; in the same vein, the role of government is ambiguous: intrusive in collecting more personal data; protective in offering protective measures; citizens become more empowered to keep control over personal data themselves;
- Countervailing powers: new forms of democratic participation contribute to enhancement of countervailing strategies; these forms are highly dynamic and volatile, highly pluralistic and fragmented and challenge the traditional mode of representative democracy;
- Networked government: by increased sharing of authority, bypassing of traditional hierarchies and vertical institutes, co-operation within government and with external stakeholders, external stakeholders are empowered and roles for government changes;
- Intelligent government: technological tools enable a shift towards a more responsive government, heading for service leadership, user-oriented character and context-awareness.

Future models of government depend upon the way future trends will manifest themselves. Therefore, in the next step we have explored four scenarios for which the time horizon is the year 2020. The scenarios describe the consequences of promising ICT-developments for new eGovernment services and new eGovernment models in the wider context of related social, economic, institutional and organisational trends. Based on desk research we have made a list of trends with a high degree of uncertainty, but with a possible high impact on eGovernment. Sixty European experts (see Appendix) participated in a survey to select the trends with the expected highest uncertainty and largest impact. Their input was used to construct the axes of the scenarios. The scenarios vary on two highly uncertain factors that may have a large impact on future models of government: ‘cultural diversity’ and ‘citizen involvement’. These two factors were selected by the experts as the most uncertain variables with the largest impact.

When combining the extreme manifestations of these two factors (cultural homogeneity versus cultural heterogeneity and low versus high involvement of citizens), four images of government emerge in which we have taken the future activity of the hot spots into account in terms of their potential impacts in 2020. Experts were invited to engage in the creation of the scenarios in a two-stage process. In the first round, they were invited to comment on the generic descriptions of the contextual factors in each scenario. In the second, ‘fine-tuning’ stage, we asked them to further reflect on the scenarios which were then complemented with descriptions of the 7 hot spots described in earlier reports for this project. We asked them to comment on the following issues:

In the Our Europe scenario, European culture in 2020 is coherent and homogeneous with a high degree of consensus on the future development of the European society. Democratic participation is high and citizens are overall quite involved in what their political representatives do: they are well informed and able to express their needs. They critically follow their governments but in a constructive manner. Ambient government increasingly anticipates citizen needs. Government is focused on being efficient and effective in delivering personalised services. Because individuals and action groups, empowered with advanced personal media tools, can easily scrutinise and expose government operations, transparency and accountability have become the norm in and across government operations. A major challenge is to balance flexibility in projects and operations with this increased accountability.

The potential for large-scale data mining by national governments and businesses is strongly regulated by EU privacy acts. eGovernment and eBusiness systems are designed around data sharing directives agreed at EU level. Intelligent devices comply with open EU standards to signal privacy incompatibilities when exchanging biodata. Governments
receive extremely fine-grained, geographically-specific feedback on all their actions from all stakeholders and a kind of continuous referendum on key issues is emerging. To ensure concerted action there is a great need for common pools of knowledge and consistent and balanced interpretation across all spheres of government.

In the We, the Market scenario, the private domain is by far the most important. People have come to rely on the structuring capacity of the market, which goes hand in hand with a transparent government that focuses on core tasks. Citizens are complacent and are hesitant to hold their governments responsible for their performance. Citizens have sacrificed their rights for data protection in exchange for job security in a volatile economic decade. Market parties manage this information to execute outsourced law enforcement tasks. Government’s role is reduced to being a watchdog, as more and more key services are delivered through public/private partnerships. Many public services (health, public transport, education) have been ‘outsourced’ to the market as well with only a marginal role for public authorities.

The market considers (personal) data as a commodity with a market value which skews the balance between privacy intrusion and market benefits. Privacy has become a trade-off mechanism between supply and demand. The market is in the lead when it comes to collecting, providing and exploiting the smart data needed to provide highly sophisticated and intelligent services and to create the ambient intelligent environment needed to support these. Companies use ‘Google’ business models, which can be characterised by smart ways of exploiting the collective intelligence present in societal networks. Democratic participation is low: people trust government. Checks and balances within the political system are primarily oriented towards enabling insight into costs and benefits. Government has outlawed the use of strong cryptography. The power of civil society groups to scrutinise business is curbed in new EU and national regulation.

Businesses can sue activist groups if their image is tarnished. In the My Community scenario, the key characteristic of society is cultural, religious and political diversity. Units of governments cooperate in instant and horizontal networks which cause complex constructions of shared responsibilities. Thus accountability structures are very complex and opaque. Participants in governmental networks and citizens dispute responsibilities. Governments have substantially decentralised their tasks and activities; local communities and municipalities are the key actors in the public arena. Highly networked individuals and action groups mesh with business, which together dominate formerly traditional government domains. Governments influence and budgets are shrinking, and working in government has an increasingly bad image. ICTs have provided citizens with powerful tools to blow the whistle on government in terms of law enforcement and have empowered them to organise counter-surveillance and alternative forms of law enforcement. Successful online security firms and citizens’ initiatives have taken over many traditional government functions in law enforcement.

Citizens endorse an approach that prevents the ability to centralise the storage of personal data. As a result, service provision is fragmented and best accessible to those who can afford it. New cryptography technologies make it easy to scramble and disrupt aging ambient government technologies. The traditional model of representative democracy has been abolished and replaced by models based on deliberation, direct democracy and minority interests. Small collectives of loosely organised non-state actors muster power beyond the control of government. Their power depends on widely dispersed communities that support them. These communities spring up and die out quickly making it difficult for government to develop any long term policies. The Me, myself and I scenario is characterised by low engagement and high – almost individualised – diversity.

Low engagement drives a general attitude of minding your own business. There is little room for consensus building and a general distrust among all actors in society. Citizens care little about transparency and accountability. Surveillance and law enforcement are the key roles of government. For government, security is a perfect excuse for lack of accountability. Privacy is increasingly sacrificed in favour of security. Citizens are reluctant to reveal personal data to government. For some, personal data is a market commodity: depending on the services offered, citizens are willing to let their personal data be used for specific purposes (profiling, tracking, social network analysis and the like). “Clientelism” and one-to-one politics have become the corner stones of the democratic system. The role of governments in networks for public service provision has become quite marginal. In this scenario individual citizens use their personal budgets to organising key services, often through inside tracks with government. ICTs have enabled
a high degree of personalisation of services which as a result are organised on a one-to-one basis in client-provider relationships between individual citizens and private companies or community providers. This fragmented services system makes good services hard to come by and expensive. Large sections of the aging European society have difficulties accessing key services such as dental care and affordable housing. Following the foregoing steps in the analysis, a future-oriented framework for measuring the benefits and impacts of government is presented. ‘Future oriented’ implies that this tool takes into account likely future transformations and new demands on eGovernment. In this case this means that the tool is specifically applied to the hot spots, as they represent our analysis of the key challenges for future eGovernment. This has been done in a concrete and pragmatic manner, providing a concrete indication of what could be measured when addressing the specific hot spots.

Finally, and taking together the key points from all the research steps in the other research work, we have set out to identify the research challenges related with the new developments of eGovernment and to formulate policy recommendations. By research challenges we mean scientific blind spots; research themes or questions that will be relevant for future models of government and that are relatively new and underexposed. Policy recommendations are understood here as key challenges for future policy that derive from the identified research themes or from the trends or questions arising from the previous research tasks. Because the subjects of the five previous steps are rather divergent (vary from inventories of tasks and technologies to scenarios and impact measurement tools) and the interrelations between the tasks are manifold and versatile, we have chosen to identify the key research and policy challenges by using the hot spots as structuring element. We have first used the hot spots to identify the research challenges and have also taken into account here how relevant they are for the four scenarios. As the seven hot spots show significant synergies, dependencies and overlap, and to bring a strong focus in the final concluding chapters, the hot spots have been further condensed into three relatively independent ‘extreme’ hot spots for ICT driven governmental transformation. For each ‘extreme’ hot spot we have first formulated the key research challenges (also based on input from experts taking part in a final validating workshop).

6.6.1 Extreme Transparency

Extreme transparency of government operations and functions on the one hand prompts close scrutiny of government accountability by citizens, business and civil groups. On the other hand, transparency of citizen activities raises serious issues of privacy. In both cases there are many new opportunities for due and undue police surveillance and other law enforcement strategies. This has raised the following key issues for research (broken down into more detailed challenges in the chapter): How can the performance of more qualitative tasks of government be measured? What new forms of accountability (e.g. being responsible, giving account, holding accountable) fit the new models of networked government? What are good indicators to monitor the potential threat to privacy as a result of networked and intelligent government?

6.6.2 Fading Boundaries

Fading boundaries between government and its main counterparts in society are a signpost of the new ways in which government functions are being shaped. Coalitions of state and non-state actors (countervailing powers) play an increasing role in the implementation of government tasks. In research terms the following challenges come to the fore: What are the ways in which government can facilitate eParticipation and eDemocracy?

6.6.3 Enhanced Intelligence

Enhanced intelligence embodies the hot spots of an intelligent and networked government that exploits but also guards the many new sources of information gathered through granular interactive networks that now reach into every corner of society. What are the ways in which government can manage the overload of information as a result of ‘ambient government’? Finally, in the last and concluding chapter we have also used these extreme hot spots as the starting point for identifying key policy challenges and recommendations. But apart from these hot spot-related recommendations, we have also formulated some more general policy recommendations, which can be seen as pre-conditional for realising the ICT-driven models of eGovernment which we have described in this study;
6.6.4 General Policy Challenges

Following are the policy challenges:

6.6.4.1 Political Challenges

Policy strategies and actions need to be based on an explicit value based vision on future eGovernment, which specifically takes into account the realisation of empowerment values. Future eGovernment models need to go beyond mere public service and public sector modernisation, and need to be based on a willingness to fundamentally change governmental operations, institutional arrangements and culture. In this sense the development of incremental transition paths is necessary, possibly based on different migration scenarios. This involves a need to look beyond short-term political agendas and implementation issues.

The trend towards an increasingly networked eGovernment, will involve cooperation and coordination at all levels of government and with new stakeholders and new intermediaries at (and across) the local, regional, national and European level. This stresses the need for administrative and regulatory trans-European harmonisation to ensure ‘interoperability’ both at the organisational and the technological level. This harmonisation is also important to address the potential risks of an ambient, all knowing government, particularly to ensure data protection (security and privacy) rights of citizens and businesses. These kind of long-term and integrative transitional approaches require univocal political commitment and strong leadership with an impact on every level of government.

6.6.4.2 Technological Challenges

Ensure technological interoperability and standardisation. Governmental transformation requires back office re-organisation and one-stop shop approaches, which in turn require substantial process and workflow redesign that needs to be translated into new information architectures. An extra challenge is that these new architectures need to be flexible and open in order to be sufficiently user-centred and dynamic. This also involves a stronger investment in technologies that enable smart ways of cooperating and sharing or producing knowledge (‘collective intelligence’, open source and open content, collaborative computing tools etc), among relevant stakeholders in this more networked environment.

- Ensure that networks and services are accessible to all both on the level of infrastructures as on the level of services and the necessary (user friendly) interfaces (usability).
- Stimulate the use of technologies which are designed to cope with potential information overload (e.g. use smart search engines, tagging technologies etcetera that are developed in social networks and in the context of user generated content)
- Reduce the dependency on ICT-infrastructures and related services or build in necessary safeguards (this requires an approach to cope with ‘critical information infrastructures’).

6.6.4.3 Socio-Economic Challenges

The most important challenge will be to create the conditions for a truly citizen- and user-centred public service provision, which addresses empowerment values. This involves: A highly developed awareness of citizens’ and businesses’ needs (‘ambient government’): ambient government involves deep, personalised and pro-active knowledge about quite diverse user needs and the ability to translate these into highly diverse services, interfaces and access channels. It also point to the need to constantly monitor user needs, user experiences and user satisfaction; Building trust through being transparent, responsive and accountable (‘transparent government’); but trust also depends heavily on the ability to ensure security and privacy of personal data. Diminishing the regulatory barriers for both citizens and businesses to be independent, self-organising and self-regulating (‘light government’). Ensuring that public services are equally accessible to all European citizens and business (‘inclusive government’). The latter also involves increasing the awareness of the potential benefits of eGovernment services.
Currently, the level of deployment of eGovernment services is low, and there is strong evidence that lack of awareness of eGovernment services is the main barrier to take-up. Carefully targeted promotion and awareness campaigns should promote the overall benefits, calm the fears, and give general information about what is involved technically, where to find and how to use services. One aspect should be wider use of charters / codes of conduct / SLAs, etc. Another important challenge will be to create the conditions for collaboration, coordination and knowledge sharing, necessary for ‘networked government’. Future government will increasingly be built on public-private partnerships and will involve new intermediaries in the public service delivery chain and in democratic processes. As a result, new governance structures and shared forms of accountability and transparency need to be designed. Furthermore, smart and efficient ways of sharing and producing knowledge between these different stakeholders will be increasingly important. The more specific hot spot related challenges (described and elaborated in greater detail in the chapter) are:

6.7 Policy Recommendations for ‘Extreme Transparency’

- Transparency of governmental actions should be embedded in the design of ICT systems.
- Simplify regulations and procedures.
- Avoid redundant private data collection.
- New charters and codes should be developed on distributed electronic public sector transparency, accountability and privacy, where and how it applies and for whom.
- Promote and develop ICT-supported systems building on the collective intelligence of different stakeholders to stimulate and enhance networked models of policing and law enforcement.

6.7.1 Policy Recommendations for ‘Fading Boundaries’

Engage citizens in the design of eGovernment applications in order to make them more citizen-centred. Develop charters and codes on public electronic access and input to the public sector decision- and policy-making process, feedback on that input including the results and reasons for use/non use, and the expected behaviour and skills of civil servants and elected representatives in this context. This should include the rights and responsibilities of all stakeholders.

6.7.2 Policy Recommendations for ‘Enhanced Intelligence’

Encourage cooperation and data sharing and cooperation between governmental departments and between government and other stakeholders (including citizens themselves). While encouraging cooperation between governmental departments/with other stakeholders (including the private sector and the civil society) in collecting, storing and exploiting data, at the same time develop policies on how these actors are allowed to use personally identifiable information. Policies need to be formulated in which the roles and responsibilities of government, civil society and business in the handling of potentially sensitive information are clearly articulated and in which shared standards for quality are articulated. Government needs to be at the vanguard of semantic web and intelligent agent technologies to manage the flows of information that are coming their way.
Summary

- E-government is the use of Internet technology in general and e-commerce in particular to deliver information and public services to citizens, business partners and suppliers, and those working in the public sector.
- It is also an efficient way of conducting business transactions with citizens and businesses and within the governments themselves.
- E-government offers a number of potential benefits: It improves the efficiency and effectiveness of the functions of government, including the delivery of public services.
- E-government also offers greater opportunities for citizens to provide feedback to government agencies and to participate in democratic institutions and processes.
- E-government applications can be divided into three major categories: government-to-citizens (G2C), government-to-business (G2B), and government-to-government (G2G).
- Governments also are using the Internet to sell to or buy from businesses.
- Like any other organisation, government entities want to move into the digital era, becoming click-and-mortar organisations.
- In general, implementation of G2B is easier than implementation of G2C.
- Customer to customer (C2C) e-commerce refers to e-commerce in which both the buyer and the seller are individuals not businesses.
- Regardless where people are, in dozens of countries, selling and buying on auction sites is exploding.
- People sell to other people every day through classified ads in newspapers and magazines.
- Advertisers are identified by e-mail address. A password is used to authenticate the advertiser for future changes in an ad.
- The issues of ensuring quality, receiving payments, and preventing fraud are critical to the success of C2C.

References


Recommended Reading

Self Assessment

1. E-government is the use of _______ technology in general.
   a. Internet
   b. Intranet
   c. Extranet
   d. Network

2. _______ in particular to deliver information and public services to citizens, business partners and suppliers, and those working in the public sector.
   a. E-Government
   b. E-mail
   c. E-Commerce
   d. E-Banker

3. _______ improves the efficiency and effectiveness of the functions of government, including the delivery of public services.
   a. E-Government
   b. E-mail
   c. E-Commerce
   d. E-Banker

4. E-government offers greater opportunities for citizens to provide feedback to _______ agencies and to participate in democratic institutions and processes.
   a. private
   b. public
   c. dealer
   d. government

5. E-government applications can be divided into _______ major categories.
   a. two
   b. three
   c. four
   d. five

6. The business consulting firm Deloitte and Touché conducted a study that identified _____ stages in the transformation to e-government.
   a. three
   b. four
   c. five
   d. six

7. _______ e-commerce refers to e-commerce in which both the buyer and the seller are individuals not businesses.
   a. B2B
   b. C2C
   c. B2C
   d. C2B
8. The issues of ensuring quality, receiving payments, and preventing fraud are critical to the success of _______.
   a. B2B
   b. B2C
   c. C2C
   d. C2B

9. Numerous personal services are available on the ________.
   a. Internet
   b. Intranet
   c. Extranet
   d. Network

10. ________ e-commerce functions include Data Link, which enables the transfer of data using a secure and controlled environment.
    a. Commerce to commerce
    b. Consumer to consumer
    c. Business to business
    d. Government to government
Chapter VII
E-Commerce Support Services

Aim
The aim of this chapter is to:

- explain e-commerce support services
- elucidate electronic payments
- explore logistics

Objectives
The objective of this chapter is to:

- define security in electronic payments
- explicate order fulfillment
- enlist e-wallets

Learning outcome
At the end of this chapter, you will be able to:

- understand limitations of traditional payment instruments
- enlist electronic checks
- describe electronic cash
### 7.1 Introduction

The implementation of EC may require several support services. B2B and B2C applications require payments and order fulfillment. Portals require content, etc. Figure 7.1 portrays the collection of the major EC services. They include: e-infrastructure (mostly technology consultants, system developers and integrators, hosting, security, and networks), e-process (mainly payments and logistics), e-markets (mostly marketing and advertising) e-communities (different audiences and business partners), e-services (CRM, PRM, and directory services), and e-content (supplied by content providers). All of these services support the EC applications in the center of the figure, and all of the services need to be managed. Here we will discuss only two of the above topics—payments and order fulfillment.

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**Fig. 7.1 E-commerce services**

(Source: http://www.mywbut.com)
7.2 Electronic Payments

Payments are an integral part of doing business, whether in the traditional way or online. Unfortunately, in most cases traditional payment systems are not effective for EC, especially for B2B.

7.2.1 Limitations of Traditional Payment Instruments

Non-electronic payments methods such as using cash, writing a check, sending a money order, or giving your credit card number over the telephone, have several limitations in EC. First, cash cannot be used because there is no face-to-face contact. Second, if payment is sent by mail, it takes time for it to be received. Even if a credit card number is provided by phone or fax, it takes time to process it. Nor is it convenient to have to switch from the computer to the phone to complete a transaction, especially if the same telephone line is used. Also, not everyone accepts credit cards or checks, and some buyers do not have credit cards or checking accounts. Finally, contrary to what many people believe, it may be less secure for the buyer to use the telephone or mail to arrange or send payment, especially from another country, than to complete a secured transaction on a computer. Another issue is that many EC transactions are valued at only a few dollars or even cents. The cost of processing such micropayments needs to be very low; you would not want to pay $5 to process a purchase valued at only a few dollars. The cost of making micropayments off-line is just too high. For all of these reasons, a better way is needed to pay for goods and services in cyberspace. This better way is electronic payment systems.

7.2.2 Electronic Payment System

As in the traditional marketplace, so too in cyberspace, diversity of payment methods allows customers to choose how they wish to pay. The following instruments are acceptable means of electronic payment: electronic checks, electronic credit cards, purchasing cards, electronic cash, stored-value cards, smart cards, and person-to-person payments. In addition we discuss electronic bill presentment and/or payment, both online and from ATMs. Here we will look at each of these payment mechanisms. In Online File W5.6 we consider how to make them secure.

7.2.2.1 Electronic Checks

Electronic checks (e-checks) are similar to regular checks. They are used mostly in B2B (see Reda, 2002). Here is how they work: First, the customer establishes a checking account with a bank. Next, the customer contacts a seller, buys a product or a service, and e-mails an encrypted electronic check to the seller. The seller deposits the check in a bank account, and funds are transferred from the buyer’s account and into the seller’s account. Like regular checks, e-checks carry a signature (in digital form) that can be verified (see echeck.net). Properly signed and endorsed e-checks are exchanged between financial institutions through electronic clearinghouses (see Eccho, 2002, and eccho.org for details). For the process of how e-checks work as done by eCheck Secure (echecksecure.com), see Figure 7.2.

7.2.2.2 Electronic Credit Cards

Electronic credit cards make it possible to charge online payments to one’s credit card account. It is easy and simple for a buyer to e-mail his or her credit card number to the seller. The risk here is that if the card number is not encrypted, then hackers will be able to read it and may use it illegally. Sender authentication is also difficult. (New technologies will solve this problem in 2 to 3 years, however.) Therefore, for security, only encrypted credit cards should be used. (Credit card details can be encrypted by using the SSL protocol in the buyer’s computer, which is available in standard browsers. This process is described in Online File W5.6.) Here is how electronic credit cards work: When you buy a book from Amazon, your credit card information and purchase amount are encrypted in your browser. So the information is safe while “travelling” on the Internet. Furthermore, when this information arrives at Amazon, it is not opened but is transferred automatically (in encrypted form) to a clearinghouse, where the information is decrypted for verification and for money transfer from the payer’s account to the payee’s bank account. The process is illustrated in Figure 7.3. Electronic credit cards are used mainly in B2C and in shopping by SMEs (small to medium enterprises).
7.2.2.3 Purchasing Cards
The B2B equivalent of electronic credit cards is purchasing cards. In some countries companies pay other companies primarily by means of purchasing cards, rather than by traditional checks. Unlike credit cards, where credit is provided for 30 to 60 days (for free) before payment is made to the merchant, payments made with purchasing cards are settled within a week. Purchasing cards typically are used for unplanned B2B purchases, and corporations generally limit the amount per purchase (usually $1,000 to $2,000). Purchasing cards can be used on the Internet much like regular credit cards. They expedite the process of unplanned purchases, usually as part of desktop purchasing described earlier.

7.2.2.4 Electronic Cash
Cash is the most prevalent consumer payment instrument. Traditional brick-and-mortar merchants prefer cash since they do not have to pay commissions to credit card companies, and they can put the money to use as soon as it is received. Also, some buyers pay with cash because they do not have checks or credit cards, or because they want to preserve their anonymity. It is logical; therefore, those EC sellers and some buyers may prefer electronic cash. Electronic cash (e-cash) appears in three major forms: stored-value cards, smart cards, and person-to-person payments.

**Stored-value money cards.**
A typical e-payment card is known as a stored value money card. It is the one that you use to pay for photocopies in your library, for transportation, or for telephone calls. It allows a fixed amount of prepaid money to be stored on it. Each time you use the card, the amount is reduced. One successful example is used by the New York Metropolitan Transportation Authority (MTA). Similar cards are used in many cities around the world. Some of these cards are
reloadable, and some are discarded when the money is depleted. The transportation card Octopus in Hong Kong is used in trains, buses, and shopping in stores and from vending machines (for details see Poon and Chan, 2001). Cards with stored-value money can be also purchased for Internet use. To use such cards, you enter a third-party Web site and provide an ID number and a password, much as you do when you use a prepaid phone card. The money can be used only in participating stores online.

**Smart cards**

Although some people refer to stored-value money cards as smart cards, they are not really the same. True smart cards contain a microprocessor (chip), which enables them to store a considerable amount of information (more than 100 times that of a stored-value card) and conduct processing. Such cards are frequently multipurpose; they can be used as a credit card, debit card, or stored-value card. In addition, when used in department store chains (as a loyalty card), they may contain the purchasing information of shoppers.

Advanced smart cards have the ability to transfer funds, pay bills, buy from vending machines, or pay for services such as those offered on television or PCs (see Shelter and Proaccino, 2002). Money values can be loaded onto advanced smart cards at ATMs, kiosks, or from your PC. For example, the VISA Cash Card allows you to buy goods or services at participating gas stations, fast-food outlets, pay phones, discount stores, post offices, convenience stores, coffee shops, and even movie theaters. Smart cards are ideal for micropayments.

Smart cards can also be used to transfer benefits from companies to their employees, as when retirees get their pension payments, and from governments that pay citizens various entitlements. The money is transferred electronically to a smart card at an ATM, kiosk, or PC.

**Person-to-person payments**

Person-to-person payments are one of the newest and fastest-growing payment schemes. They enable the transfer of funds between two individuals, or between an individual and a business, for a variety of purposes like repaying money borrowed from a friend, sending money to students at college, paying for an item purchased at an online auction, or sending a gift to a family member.

One of the first companies to offer this service was PayPal (paypal.com). PayPal (now an eBay company) claimed (on its Web site, accessed January 6, 2003) to have had about 20 million customer accounts in 2003, handling more than 35 percent of all transactions of eBay and funneling $8.5 billion in payments through its servers annually. Other companies offer similar services; Citibank c2it (c2it.com), AOL Quick Cash, One’s Bank eMoneyMail, Yahoo Pay Direct, and Web Certificate (webcertificate.com) are all PayPal competitors.

Virtually all of these person-to-person payment services work in a similar way. Assume you want to send money to someone over the Internet. First, you select a service and open up an account. Basically, this entails creating a user name, selecting a password, giving your e-mail address, and providing the service with a credit card or bank account number. Next, you add funds from your credit card or bank account to your account. Once the account has been funded you’re ready to send money. You access PayPal (for example) with your user name and password. Now you specify the e-mail address of the person to receive the money, along with the dollar amount that you want to send. An e-mail is sent to the payee’s e-mail address. The e-mail will contain a link back to the service’s Web site. When the recipient clicks on the link, he or she will be taken to the service. The recipient will be asked to set up an account to which the money that was sent will be credited. The recipient can then credit the money from this account to either his or her credit card or bank account. The payer pays a small amount (around $1) per transaction.
7.2.2.5 Electronic Bill Presentment and Payments
An increasing number of people prefer to pay online their recurring monthly bills, such as telephone, utilities, credit cards, and cable TV. The recipients of such payments are even more enthusiastic about such service than the payers, since online payments enable them to reduce processing costs significantly. The following are the major existing payments systems in common use: automatic payment of mortgages; automatic transfer of funds to pay monthly utility bills; paying bills from online banking account; merchant-to-customer direct billing; and use of an intermediary to aggregate bills into one payable Web site.

7.2.2.6 Paying Bills at ATMs
In some countries (e.g., Hong Kong, Singapore) customers can pay bills at regular ATMs. The bills are sent by regular mail or can be viewed online. When you receive the bills, you go to an ATM, slide in your bank card, enter a password and go to “bill payments” on the menu. All you need to do is insert the account number of the biller and the amount you want to pay; that amount will be charged to your bank card and sent to the biller. You get a printed receipt on the spot. In addition to utilities you can pay for purchases of products and services (e.g., for airline tickets). Merchants love it and many give a discount to those who use the service, since they do not have to pay 3 percent to Visa or MasterCard.

7.2.3 Security in Electronic Payments
Two main issues need to be considered under the topic of payment security: what is required in order to make EC payments safe, and the methods that can be used to do so.
7.2.3.1 Security Requirements

Security requirements for conducting EC are the following:

Authentication
The buyer, the seller, and the paying institutions must be assured of the identity of the parties with whom they are dealing.

Integrity
It is necessary to ensure that data and information transmitted in EC, such as orders, reply to queries and payment authorisation, are not accidentally or maliciously altered or destroyed during transmission.

Nonrepudiation
Merchants need protection against the customer’s unjustified denial of placing an order. On the other hand, customers need protection against merchants’ unjustified denial of payments made. (Such denials, of both types, are called repudiation.)

Privacy
Many customers want their identity to be secured. They want to make sure others do not know what they buy. Some prefer complete anonymity, as is possible with cash payments.

Safety
Customers want to be sure that it is safe to provide a credit card number on the Internet. They also want protection against fraud by sellers or by criminals posing as sellers.

7.2.3.2 Security Protection

Several methods and mechanisms can be used to fulfill the above requirements. One of the primary mechanisms is encryption, which is often part of the most useful security schemes. For coverage of security protection see Online Text Section W5.6 and Chapter 15. Other representative methods are discussed below:

E-wallets
E-wallets (or digital wallets) are mechanisms that provide security measures to EC purchasing. The wallet stores the financial information of the buyer, including credit card number, shipping information, and more. Thus, sensitive information does not need to travel on the Net, and the buyer and seller save time. E-wallets can contain digital certificates (see Online Text Section W5.6), e-loyalty information, etc. As soon as you place an order, say at Amazon.com, your e-wallet at Amazon is opened, and Amazon can process your order.

The problem is that you need an e-wallet with each merchant. One solution is to have a wallet installed on your computer (e.g., MasterCard Wallet). In that case, though, you cannot purchase from another computer, nor is it a totally secured system. Another solution is a universal e-wallet such as Microsoft’s Passport (Rosenbaum, 2002) and the Liberty Alliance (Costa, 2002). Universal systems are becoming popular since they provide a digital identity as well. For a description of how Microsoft’s Passport works, see Rosenbaum, 2002. At our Web site, in Online File W5.7, you can see how Liberty Alliance works.

Virtual credit cards
Virtual credit cards are a service that allows you to shop with an ID number and a password instead of with a credit card number. They are used primarily by people who do not trust browser encryption sufficiently to use their credit card number on the Internet. The virtual credit card gives an extra layer of security. The bank that supports your traditional credit card, for example, can provide you with a transaction number valid for use online for a short period. For example, if you want to make a $200 purchase, you would contact your credit card company to charge that amount to your regular credit card account, and would be given transaction number that is good for charges up to $200. This transaction number is encrypted for security, but even in the worst possible case (that some unauthorised entity obtained the transaction number), your loss is limited, in this case to $200. For another example of virtual credit cards, see americanexpress.com.
Payment using fingerprints
An increasing number of supermarkets allow their regular customers to pay by merely using their fingerprint for identification. A computer template of your fingerprint is kept in the store’s computer system. Each time you shop, your fingerprint matched with the template at the payment counter. You approve the amount which is then charged either to your credit card or bank account. See Alga (2000) for details.

7.3 Order Fulfillment
We now turn our attention to another important EC support service—order fulfillment. Any time a company sells direct to customers it is involved in various order fulfillment activities. It must: quickly find the products to be shipped, and pack them; arrange for the packages to be delivered speedily to the customer’s door; collect the money from every customer, either in advance, by COD, or by individual bill; and handle the return of unwanted or defective products. It is very difficult to accomplish these activities both effectively and efficiently in B2C, since a company may need to ship small packages to many customers, and do it quickly. For this reason, both online companies and click-and-mortar companies have difficulties in their B2C supply chain. Here, we provide only a brief overview; a more detailed discussion is provided in Turban et al. (2004) and in Bayles (2001).

Order fulfillment refers not only to providing customers with what they ordered and doing it on time, but also to providing all related customer service. For example, the customer must receive assembly and operation instructions to a new appliance. (A nice example is available at livemanuals.com.) In addition, if the customer is not happy with a product, an exchange or return must be arranged (see fedex.com for how returns are handled via FedEx). Order fulfillment is basically a part of a company’s back-office operations.

During the last few years, e-tailers have faced continuous problems in order fulfillment, especially during the holiday season. The problems resulted in inability to deliver on time, delivery of wrong items, high delivery costs, and the need to heavily compensate unhappy customers. Several factors can be responsible for delays in deliveries. They range from inability to forecast demand accurately to ineffective supply chains. Some such problems exist also in off-line businesses. One factor that is typical of EC, though, is that it is based on the concept of “pull” operations, which begin with an order, frequently a customised one. This is in contrast with traditional retailing that begins with a production to inventory, which is then “pushed” to customers. In the pull case it is more difficult to forecast demand, due to unique demands of customised orders and lack of sufficient years of experience.

For many e-tailers, taking orders over the Internet could well be the easy part of B2C e-commerce. Fulfillment to customers’ doors is the sticky part. Fulfillment is less complicated in B2B where several effective methods are in use (see Bayles, 2001). In-depth case studies were conducted of 25 rural and small town businesses and three small business service providers. The businesses were selected to provide diversity with respect to industry (manufacturing, wholesale, retail, services); business size (2 to 200 employees); application of e-commerce (e.g., marketing and sales, networking and information exchange, inventory and distribution management); reliance on e-commerce (virtual or storefront); and location (region and city size). The names, locations, and principal products of the 28 case-study businesses and service providers are presented in Table 2, and characteristics of the firms’ ecommerce activities (B2B vs. B2C, industry, virtual vs. storefront). On-site interviews were conducted with founders, owners, or managers of each business in 2006 and 2007.

The comprehensive case studies of the firms interviewed are provided in the companion publication, “Case Studies of E-Commerce Activity in Rural and Small Town Businesses” (Markley, Barkley, and Lamie, 2007). The reader will note that many of the case study firms are clustered geographically (e.g., four firms in Iowa, four in Minnesota, six in Maine, and three in Kansas). This clustering of case study businesses resulted from the attempt to maximise the number of on-site interviews for a limited travel budget. The firms were chosen because they provided varied examples of ecommerce activities in terms of business type, geographic location, e-commerce application, and success of e-commerce venture. The goals of the case studies are to provide instructional and motivational examples of the application of e-commerce to the business strategies of rural and small town firms. The case study firms likely are not a cross-section of rural and small town businesses that use e-commerce, and thus, the findings do not necessarily represent the typical experience with e-commerce.
The case study businesses are primarily manufacturers (nine) and retailers (nine). The manufacturers include home furnishings, pottery, and metal works produced locally by artisans and craftsmen, value added agriculture ranging from llama fibers to salsa to bio-based skin care products. The retailers are both virtual and storefront. Retail markets include art, art supplies, antiques, car top carriers, power tools, and appliances and consumer electronics. Finally, eight of the case studies are classified as merchant wholesalers or service providers. The two wholesalers include one firm that provides equipment for crop input dealers and another that sells supplies for making dolls. The services represented are advertising, real estate sales, outdoor recreation, and tourism promotion. In summary, the case study firms support the perception that e-commerce is a viable strategy for a wide variety of businesses in terms of products, sizes, history, and location.

### 7.4 Benefits of E-Commerce to Company

Many businesses adopt an e-commerce business plan because it provides the owner greater flexibility in terms of operating location and hours. That is, e-commerce may present an individual with the opportunity to be a “lifestyle entrepreneur” and locate the business where the entrepreneur wants to live. For some individuals this enhanced flexibility might result in a move, but in many cases e-commerce permits entrepreneurs to remain in place and benefit from proximity to family or other local assets. Our case study businesses include examples of lifestyle entrepreneurs in David Schaefer (Owner/Founder of Lakeland Enterprises), April Adams (Owner and Artist of Columbia Falls Pottery), Bernard Sund (Owner/Founder of Nautical Antiques), and Robin Hildebrand (Owner/Founder of Blue Smoke Salsa). Lakeland Enterprises designs and markets car top carriers and vacation gear. The business has two employees (the owner and his

### 7.5 Product Development

The availability of e-commerce and supportive computer software systems and services enabled Brush Art, Farmchem, and Mid West eServices to investigate new areas of business (products and customers). Brush Art, a Downs, Kansas advertising agency, now offers interactive websites for their clients that are designed so that a dealer for a company (e.g., retailer of lawn tractors) can download company approved marketing information yet customise the materials for the dealer’s specific needs (e.g., items on sale and location and date of sale). Thus each dealer can have easy access to professionally designed marketing materials with dealer specific details. Farmchem Corporation of Floyd, Iowa (equipment and service provider for crop input dealers) developed an electronic monitoring system for liquid levels in the bulk tanks of dealers and suppliers. Data on tank levels is transferred to a central server, and an Internet-based data management system provides the data in the desired form to the client. Mid West eServices (Salina, Kansas) evolved from an eBay seller of salvage and repossessions for banks and insurance companies to a leading Internet real estate marketer. Mid West eService’s product niche is the marketing of rural properties using a quality of online information not available elsewhere. Songer Whitewater’s (Fayetteville, West Virginia) website allows clients to customise their adventure packages in terms of selecting from a variety of recreational activities and lodging options. Many of the available options are provided through sub-contracts by other area businesses. E-Commerce assisted Songer Whitewater in transitioning from a whitewater rafting company to a full service outdoor recreation business.

### 7.6 Supply and Inventory Management

Grown Locally, a northeast Iowa grower’s cooperative, uses the Internet to maintain daily contact with members of the cooperative (farmers) to coordinate the farmers’ production with the consumers’ demands. Mountain One (Leland, Iowa) is a mail order facility with 7000 items for making and accessorising dolls and bears. The company uses an integrated software system for mail order businesses that manages the inventory and warehouse (including location of items in the warehouse) based on information from online sales. The software system also determines the preferred distribution system (e.g. postal service, UPS, FedEx) and shipping costs based on the number, size, and weight of the items ordered online. These increases in operational efficiencies reduced the company’s employment requirements from 15 to 5 full-time employees.
7.7 Reduce Manufacturing or Production Costs
Dessin Fournir of Plainville, Kansas designs and manufactures fine home furnishings. Many of the furniture pieces and fabric patterns are designed in Plainville, but the furniture is manufactured in California and the fabrics are produced in 13 fabric mills in 9 countries. The Internet permits Dessin Fournir to communicate directly with its production facilities thus reducing the need and expense for travel to the manufacturing facilities and for external agents to oversee production in the mills. Production costs also were reduced for the Brush Art advertising agency (Downs, Kansas) after the switch to e-commerce by cutting the average “cycle time” required to bring a marketing project to completion from four months to two weeks.

7.8 Expand Marketing Efforts
E-Commerce offers cost effective opportunities for expanding and targeting markets, and all of the case study businesses maintain websites designed to promote the companies’ products or services. For example, Blue Smoke Salsa (Ansted, West Virginia) has an attractive website for their (and their affiliates) sauces, salsas, and jellies that focus on the small town, homemade origin of its products. The Villages of Van Buren (Keosaqua, Iowa) and Songer Whitewater (Fayetteville, West Virginia) are tourism-related businesses that rely on the Internet to attract visitors to their area and businesses. The Villages was honored with an award at the 2004 Iowa Tourism Conference for the best website for areas with population less than 10,000. Songer Whitewater moved from 12th largest outfitter in the state to 4th largest, and much of this improvement is attributed to its website and accompanying focus on an e-commerce strategy. Finally, Mainely Metals and Eolian Farms are two Maine companies with historically limited market areas. Mainely Metals produces a snowplow-resistant mailbox for Maine residents and Eolian Farms raises llamas and Shetland sheep and sells the fiber at fairs throughout Maine. The use of websites enables the two companies to expand their markets geographically, and currently online purchases account for at least 40 percent of the companies’ sales. In summary, a well-designed website can provide potential customers with an image of a business that exceeds the business’ actual physical presence. This advantage is more important for rural businesses than urban companies because consumers may have the perception that the rural business is too small and isolated to provide quality products and good service. A “good” website places the rural firm on a more even footing for competing with urban business.

7.9 Increase Sales and Reduce Selling Costs
Business profits can be increased by increasing revenue through stronger sales and/or by decreasing the costs associated with constant sales. Gail Golden Jewelry of Arroyo Seco, New Mexico attributes about 25% of company sales to online customers, and Vann’s of Missoula, Montana (appliances and consumer electronics) reports that approximately 55% of the firm’s sales come from e-commerce. The use of e-commerce also helped to cut selling costs among case study firms by reducing the need for paper catalogs and sales flyers. The home furnishings manufacturer Dessin Fournir (Plainville, Kansas) spends approximately $250,000 a year on catalogs, thus the conversion to an e-catalog offers the potential for significant savings. Similarly, Mountain One of Leland, Iowa (distributor of supplies for making dolls and stuffed animals) traditionally mailed 15,000 to 20,000 catalogs a year at an annual cost of $30,000 to $35,000. Catalog mailings were changed to every other year because of the availability of a website with a shopping cart. Finally, both Lakeland Enterprises (Seneca, South Carolina) and Blue Smoke Salsa (Ansted, West Virginia) noted that profit margins were higher on items sold online than goods sold through merchant wholesalers. E-Commerce may permit retail businesses to “cut out the middle man costs.”

7.10 Improve Customer Service
Customer service can be provided before the sale by making it easy for the shopper to find what they want or after the sale in terms of addressing order returns, repairs, or operational questions. The company website can be helpful in providing both before- and after-sale service. Both Vann’s of Missoula, Montana (appliances and consumer electronics) and Louis Williams and Sons of Hendersonville, North Carolina (Makita power tools) are retailers in highly competitive Internet markets in which they hope to distinguish themselves through consumer service. Vann’s website provides services to potential customers in the form of extensive information on product features, product details and specifications, reviews by Vann’s consumers, comparisons to alternative products available at Vann’s, and accessories for the product. Louis Williams and Sons niche in the power tool market is service after the sale. The company elected not to compete on the Internet as the low cost provider of Makita tools. Instead, Louis Williams and Sons focuses on carrying the complete inventory of Makita tools (unlike their low cost competitors) along with providing parts and accessories and repair services for Makita tools. The company’s website contains thousands of pictures of tools and parts and accessories to assist the customer after the sale.
For many businesses dependent upon the tourism industry, an e-commerce site provides a way to maintain and even strengthen customer relationships. Through targeted marketing push strategies, businesses can reach out to customers even when they are no longer in the area. For example, Sivertson Gallery (Grand Marais, Minnesota) e-mails notices to customers who have purchased artwork by particular artists whenever new work by them is featured in the gallery. Linked with the shopping cart feature of the site, this direct marketing touch allows customers to purchase products beyond the tourist season and outside the region.

Businesses can also use the e-commerce features of their sites to emphasise customer service and develop an edge over their competitors. Voyageur Outfitters (Gun Flint Trail, Minnesota) features an online chat and daily blog to keep customers, old and new, up-to-date on conditions in the region. Customers can plan every aspect of their trip online, from routes to menus, and pre- and post-trip e-mails provide customers with information about their trip and the business owners with information about customer needs and experiences. The cases in this study are a diverse collection of businesses with varied experiences in e-commerce. They provide, interesting insights into the development of e-commerce activities and exhibit common experiences with respect to the lessons learned from their endeavors. A Marketing and selling products through a designed website on the Internet places companies in competition with a large number of firms and provides consumers with easy access to comparisons of competitors’ products and prices. Head-to-head competition with large Internet stores will occur on standardised, high-volume items such as books, shoes, sporting goods, and consumer electronics.

Smaller businesses generally do not have the ability to compete in these e-markets because the firms do not have (1) the volume or scale economies to match the low price, or (2) the marketing budget to get an early listing on web searches. Thus, it is recommended that smaller businesses concentrate on a niche market in order to reduce online competition. Numerous examples of product specialisation and market niches are provided in the case studies. Sterling Bio-Technologies (Sterling, Colorado) manufactures bio-based skin care products and focuses on the “natural” product market. Stained Glass Express (Waterville, Maine) targets its e-commerce activity at selling glass and supplies to hobbyists. Mid West eServices (Salina, Kansas) identified an underserved market in helping rural communities find buyers for surplus schools and other public buildings.

A narrow market focus also may enhance a business’ visibility on search engine rankings. The more specific the information provided on the firm’s website (e.g., nautical antiques vs. antiques) the more likely the website will be found by shoppers conducting highly targeted searches. A focus on a market niche provides the opportunity for placing the firm’s website higher on the search list of buyers with well-defined purchasing interests. In addition, the firm may be able to obtain a higher listing on Google or pay a lower bid if it is bidding against fewer businesses for more detailed product descriptions.

Effectively Use Service Providers A wide variety of programs and services are available locally and on the Internet to assist companies with their e-commerce. Services available include website design and hosting; software systems for integrating e-commerce with accounting, shipping, and inventory management; and business analytics software to provide data and statistical analysis on the company’s e-commerce activity. These services can be valuable in identifying a niche market, reaching customers in that market, and developing an efficient production and distribution system for serving customers.

Examples of the use of e-commerce support services are provided in the case studies of Vann’s, Mountain One, Stained Glass Express, Gail Golden Jewelry, Blue Smoke Salsa, and Songer Whitewater. Rural businesses, in particular, face challenges in using support services. In many cases, the services offered by private sector firms may be costly and the benefits to the business may not justify the expense. In addition, the market for these services and software is extensive and rapidly evolving, and a significant time commitment may be required of the rural business owner to keep up-to-date. In many rural areas, there are few alternatives to private sector service providers and even these may be hard to find. The three case studies completed about business service providers (Boreal Access in Gran Marais, Minnesota; WESST Corp in Albuquerque, New Mexico; the Women’s Business Center of Coastal Enterprises, Inc. in Wiscasset, Maine) show the role that non-profit organisations may play in providing e-commerce support services to rural businesses at reduced cost.
These organisations provide training in the basics of ecommerce, and even offer improved Internet access (Boreal Access) and a collective website (WESST Corp’s www.wesstartisans.com). Business owners who were clients of these service providers acknowledged the importance and usefulness of their support. As an alternative, rural businesses might come together to share e-commerce experiences and expertise. The owner of Lakeland Enterprises (Seneca, South Carolina) suggested the need for networks or organisations of area e-commerce businesses to share information. Support may also come from the local Chamber of Commerce or the area community college as was noted in the case studies of Louis Williams & Sons and Farmchem.

7.12 Creating a Website is the Beginning, not the End of an E-Commerce Strategy

Almost all of the case study businesses struggled with website optimisation, i.e., getting the business to appear on the first page of a search engine. Strategies for optimising a website are different from those needed to create an initial site and make it fully e-commerce capable, e.g., creating a shopping cart to handle online transactions. Many of the case study businesses did not initially plan or budget for the expenses associated with optimisation. These costs include purchasing ad words from Google and pay per click ads on search engines, and redesigning the website to focus on keywords often used in searches. For example, the original website developed for Columbia Falls Pottery (Columbia Falls, Maine) featured beautiful images and few words.

While this balance helped customers better experience the pottery, the site failed to show up on searches because search technology uses words not images. A revamping of the site with attention to text was necessary. Deciding how much to invest in site optimisation is difficult. A key question is whether sales will increase enough to cover the costs associated with optimisation. Taos Architectural Copper (Taos, New Mexico) experimented with the purchase of Google ad words, sharing the cost of this strategy with the regional service provider, WESST Corp. Sales of copper sinks went from one per month to one per week during this time, and the company appeared on the first search page. However, when faced with bearing the full costs of purchasing ad words, the business owner decided that the costs exceeded expected revenues and abandoned the strategy. The result was that the business dropped off the first page. The purchase of key words is akin to purchasing television commercials or large Yellow Page ads. Each business owner must determine the relative costs and benefits of site optimisation and should make this a consideration when developing an e-commerce strategy.

7.13 Be Prepared for Growth

The initiation of e-commerce may result in a significant increase in sales, and the business must be prepared to meet this demand or the e-commerce “window of opportunity” may be lost. The typical Internet customer expects quick and accurate responses to their online orders. The timely delivery of goods and services consistent with the quality perceptions of customers is critical to cultivating repeat customers, word-of-mouth advertising, and favorable online reviews. The Director of Multi-channel Marketing at Vann’s, Inc. recommended that a company needs to plan “a couple of steps ahead” in terms of hiring people, available production capacity, adequate warehouse space, inventory management capabilities, and customer service delivery as it transitions to e-commerce. In addition, the business can somewhat manage the pace of increasing product sales by limiting web-based promotions to targeted geographic areas or specific customer profiles.

Promise and challenge of affecting every aspect of a business’ operation from product design and production to distribution and service delivery. Businesses using or considering e-commerce should investigate the potential roles for e-commerce in all aspects of the businesses’ operations. The case studies provide examples of e-commerce applications in product development (Farmchem, MidWest e-Services), marketing (Nautical Antiques, Villages of Van Buren), inventory and warehouse management (Louis Williams & Sons, Mountain One), distribution and sales (Sterling Biotech, Blue Smoke Salsa), and service after the sale (Vanns). Businesses with e-commerce activities (B2B or B2C) may benefit by using the information provided through ecommerce (e.g. customer characteristics, location, and order size and regularity) to enhance efficiencies in other areas of operation. For example, online sales may create the opportunity for direct delivery to customers and reduce reliance on wholesalers. In addition, Internet marketing may attract customers from parts of the world not previously served by the company. Cultural differences between buyers and sellers might present unforeseen challenges; thus, understanding and planning for transactions with foreign customers will enhance the benefits from these opportunities.
7.14 E-Commerce is Not for all Businesses

In our opinion, most rural and small town businesses would benefit from having a website. Consumers increasingly rely on the Internet for information, and a website is a relatively inexpensive way to present information on a business’ products, hours, location, phone number, and sales. E-Commerce is, however, much more than maintaining an informational website, and the e-commerce related components and services (e.g., shopping carts, fraud protection, SEO, EDI, analytics software) may add more to the firm’s costs than they contribute to profits. That is, e-commerce may not be a profit maximising business strategy for a firm if the cost of implementing e-commerce exceeds the increase in net revenues or decrease in operating and marketing costs attributable to e-commerce.

There are two general situations where ecommerce provides only limited potential in enhancing sales and net revenues. First, businesses that sell “commodities” such as books, shoes, clothing, consumer electronics, and sporting goods will find the Internet markets extremely crowded. Online competition from big box stores and Internet retailers will be intense, and these larger companies likely have a competitive advantage in terms of volume buying and early listings on search engines. As noted previously, small town businesses are encouraged to find a niche market to minimise competition and increase market share. Second, some products require personal inspection by the customer (e.g., antique furniture) while other products may not “show” well on a webpage (e.g., fine art). The website may be helpful for getting the potential customer into the store or gallery for further inspection of the product, but an online sale is unlikely to occur.

The Missoula Artists’ Shop has received only a handful of online orders in the two years that it has maintained a shopping cart. The gallery is considering returning to an “information only” website if online sales do not increase significantly in the near future. In the final analysis, what is important to the firm is that e-commerce produces an acceptable return on investment. It is good business practice to forecast and monitor the resources (time, money, and other) devoted to implementing and conducting e-commerce and the benefits (increased sales and reduced costs) attributed to e-commerce strategies. If a business forecasts insufficient long-term return on investment, broadly defined to include financial and time commitments, then e-commerce as currently used is not a good fit for the company. In this situation, the business may elect to revise the scale and scope of its e-commerce program or it may decide to withdraw from e-commerce altogether.
Summary

- The implementation of EC may require several support services. B2B and B2C applications require payments and order fulfillment.
- EC services e-infrastructure (mostly technology consultants, system developers and integrators, hosting, security, and networks), e-process (mainly payments and logistics), e-markets (mostly marketing and advertising) e-communities (different audiences and business partners), e-services (CRM, PRM, and directory services), and e-content (supplied by content providers).
- Payments are an integral part of doing business, whether in the traditional way or online. Non-electronic payments methods such as using cash, writing a check, sending a money order, or giving your credit card number over the telephone, have several limitations in EC.
- The cost of making micropayments off-line is just too high.
- A better way is needed to pay for goods and services in cyberspace. This better way is electronic payment systems.
- As in the traditional marketplace, so too in cyberspace, diversity of payment methods allows customers to choose how they wish to pay.
- Electronic checks (e-checks) are similar to regular checks.
- Electronic credit cards make it possible to charge online payments to one’s credit card account.
- The B2B equivalent of electronic credit cards is purchasing cards.
- Smart cards can also be used to transfer benefits from companies to their employees, as when retirees get their pension payments, and from governments that pay citizens various entitlements.
- Person-to-person payments are one of the newest and fastest-growing payment schemes.
- E-wallets (or digital wallets) are mechanisms that provide security measures to EC purchasing.
- Virtual credit cards are a service that allows you to shop with an ID number and a password instead of with a credit card number.
- Any time a company sells direct to customers it is involved in various order fulfillment activities.

References

- Kumar, H.L., E-Government and Consumer to Consumer EC, [Video Online]: <http://www.youtube.com/watch?v=6SsMKfHmQ44>[Accessed 18 September 2012].

Recommended Reading

Self Assessment

1. B2B and _______ applications require payments and order fulfillment.
   a. B2C
   b. C2B
   c. G2G
   d. G2C

2. Portals require _______.
   a. images
   b. values
   c. content
   d. approval

3. _______ are an integral part of doing business, whether in the traditional way or online.
   a. Services
   b. Payments
   c. Goods
   d. Products

4. The cost of processing the micropayments needs to be very______.
   a. High
   b. Low
   c. Difficult
   d. Easy

5. _______ cannot be used because there is no face-to-face contact.
   a. Payment
   b. Card
   c. Services
   d. Cash

6. A better way is needed to pay for goods and services in _______.
   a. Cyber café
   b. Cyberspace
   c. Internet center
   d. Portals

7. _______ are similar to regular checks.
   a. Electronic checks
   b. Demand draft
   c. Blank checks
   d. Bond paper
8. _______ can be used on the Internet much like regular credit cards.
   a. Debit card
   b. Smart card
   c. Purchasing Card
   d. Discount card

9. A typical _______ card is known as a stored value money card.
   a. Smart
   b. Debit
   c. Credit
   d. E-payment

10. True _______ contain a microprocessor, which enables them to store a considerable amount of information and conduct processing.
    a. smart card
    b. debit card
    c. credit card
    d. discount card
Chapter VIII
Legal and Ethical Issues in E-Business

Aim
The aim of this chapter is to:

• explain legal issues in E-Business
• elucidate ethical issues in E-business
• explore the failures

Objectives
The objective of this chapter is to:

• define cyber squatting
• explicate market practices seller and consumer Protection
• enlist legal issues specific to e-commerce

Learning outcome
At the end of this chapter, you will be able to:

• enlist disintermediation
• identify reintermediation
• recognise failures and strategies for success
8.1 Introduction
Ethical standards and their incorporation into law frequently trail technological innovation. E-commerce is taking new forms and enabling new business practices that may bring numerous risks particularly for individual consumers along with their advantages. Before we present some specific issues, we discuss the topic of market practices and consumer/seller protections.

8.2 Market Practices and Consumer and Seller Protection
When buyers and sellers do not know each other and cannot even see each other (they may even be in different countries), there is a chance that dishonest people will commit fraud and other crimes over the Internet. During the first few years of EC, the public witnessed many of these, ranging from the creation of a virtual bank that disappeared along with the investors’ deposits, to manipulation of stock prices on the Internet. Unfortunately, fraudulent activities on the Internet are increasing.

8.2.1 Fraud on the Internet
Internet fraud and its sophistication have grown as much as, and even faster than, the Internet itself. In most of these stock-fraud cases, stock promoters falsely spread positive rumors about the prospects of the companies they touted. In other cases the information provided might have been true, but the promoters did not disclose that they were paid to talk up the companies. Stock promoters specifically target small investors who are lured by the promise of fast profits.

Stocks are only one of many areas where swindlers are active. Auctions are especially conducive for fraud, by both sellers and buyers. Other areas of potential frauds include selling bogus investments and phantom business opportunities. Financial criminals now have access to far more people, mainly due to the availability of electronic mail. The U.S. Federal Trade Commission (ftc.gov) regularly publishes examples of twelve scams most likely to arrive via e-mail or be found on the Web. There are several ways buyers can be protected against EC fraud. Representative methods are described next.

8.2.2 Buyer Protection
Buyer protection is critical to the success of any commerce where buyers do not see the sellers, and this is especially true for e-commerce. Some tips for safe electronic shopping. In short, do not forget that you have shopper’s rights. Consult your local or state consumer protection agency for general information on your consumer rights.

8.2.3 Seller Protection
Sellers, too, may need protections. They must be protected against consumers who refuse to pay or who pay with bad checks, and from buyers’ claims that the merchandise did not arrive. They also have the right to protect against the use of their name by others, as well as to protect the use of their unique words and phrases, slogans, and Web address (trademark protection). Another seller protection applies particularly to electronic media: Sellers have legal recourse against customers who download without permission copyrighted software and/or knowledge and use it or sell it to others.

8.2.4 Tips for Safe Electronic Shopping
- Look for reliable brand names at sites like Wal-Mart Online, Disney Online, and Amazon.com. Before purchasing, make sure that the site is authentic by entering the site directly and not from an unverified link.
- Search any unfamiliar selling site for the company’s address and phone and fax numbers. Call up and quiz the employees about the sellers.
- Check out the vendor with the local Chamber of Commerce or Better Business Bureau (bbbonline.org). Look for seals of authenticity such as TRUSTe.
- Investigate how secure the seller’s site is by examining the security procedures and by reading the posted privacy notice.
- Examine the money-back guarantees, warranties, and service agreements.
• Compare prices to those in regular stores. Too-low prices are too good to be true, and some “catch” is probably involved.
• Ask friends what they know. Find testimonials and endorsements in community sites and well-known bulletin boards.
• Find out what your rights are in case of a dispute.
• Consult the National Fraud Information Center (fraud.org).
• Check consumerworld.org for a listing of useful resources.

8.3 Ethical Issues

Many of the ethical and global issues related to IT apply also to e-commerce. These are in the Ethics Primer at our Web site. Here we touch on issues particularly related to e-commerce.

8.3.1 Privacy

Most electronic payment systems know who the buyers are; therefore, it may be necessary to protect the buyers’ identities. Another privacy issue may involve tracking of Internet user activities by intelligent agents and “cookies” (a string of characters stored on the user’s hard drive to record the history of the user’s visits to particular Web sites). A privacy issue related to employees also involves tracking: Many companies monitor employees’ e-mail and have installed software that performs in-house monitoring of Web activities. Yet many employees don’t want to feel like they are under the watchful eye of “Big Brother,” even while at work.

8.3.2 Web Tracking

By using tracking software, companies can track individuals’ movements on the Internet. Programs such as “cookies” raise a batch of privacy concerns. The tracking history is stored on your PC’s hard drive, and any time you revisit a certain Web site, the computer knows it (see NetTracker at sane.com). Programs such as Cookie Cutter, Cookie Crusher, and Spam Butcher are designed to allow users to have some control over cookies.

8.3.3 Disintermediation

The use of EC may result in the elimination of some of a company’s employees as well as brokers and agents. This result is called disintermediation—that is, eliminating the intermediary. The manner in which these unneeded workers, especially employees, are treated may raise ethical issues, such as how to handle the displacement.

8.4 Legal Issues Specific to E-Commerce

Many legal issues are related to e-commerce. Representative examples are discussed below.

8.4.1 Domain Names

Internet addresses are known as domain names. Domain names appear in levels. A top-level name is wiley.com or stanford.edu. A second level name will be wiley.com/turban or ibm.com.hk (for IBM in Hong Kong). Top level domain names are assigned by central nonprofit organisations that check for conflicts and possible infringement of trademarks. Obviously, companies who sell goods and services over the Internet want customers to be able to find them easily, so it is best when the URL matches the company’s name. Problems arise when several companies that have similar names compete over a domain name. For example, if you want to book reservations at a Holiday Inn hotel and you go to holidayinn.com, you get the Web site for a hotel at Niagara Falls, New York; to get to the hotel chain’s Web site, you have to go to holidayinn.com. Several cases of disputed names are already in court. An international arbitration organisation is available as an alternative to the courts. The problem of domain names was alleviated somewhat in 2001 after several upper-level names were added to “com” (such as “info” and “coop”).
8.4.1.1 Cybersquatting
Cyber squatting refers to the practice of registering domain names in order to sell them later at a higher price. For example, the original owner of tom.com received about $8 million for the name. The case of tom.com was ethical and legal. But in other cases, cybersquatting can be either illegal or at least unethical (e.g., see Stead and Gilbert, 2001). Companies such as Christian Dior, Nike, Deutsche Bank, and even Microsoft have had to fight or pay to get the domain name that corresponds to their company’s name. The Anticybersquatting Consumer Protection Act (1999) lets trademark owners in the United States sue for statutory damages.

8.4.2 Disintermediation and Reintermediation
One of the most interesting EC issues is that of intermediation. Intermediaries provide two types of services: (1) matching and providing information and (2) value-added services such as consulting. As seen in the Rosenbluth case (at the beginning of Chapter 3), the first type of services (matching and providing information) can be fully automated, and therefore, these services are likely to be assumed by e-marketplaces and portals that provide free services. The second type of services (value-added services) requires expertise, and these can be only partially automated. Rosenbluth decided to charge only for the second type of service. Intermediaries who provide only (or mainly) the first type of service may be eliminated, a phenomena called disintermediation. On the other hand, brokers who provide the second type of service or who manage electronic intermediation, also known as infomediation, are not only surviving, but may actually prosper, as Rosenbluth did. This phenomenon is called reintermediation.

The Web offers new opportunities for reintermediation. First, brokers are especially valuable when the number of participants is enormous, as with the stock market or when complex information products are exchanged. Second, many brokering services require information processing; electronic versions of these services can offer more sophisticated features at a lower cost than is possible with human labor. Finally, for delicate negotiations, a computer mediator may be more predictable, and hence more trustworthy, than a human. For example, suppose a mediator’s role is to inform a buyer and a seller whether a deal can be made, without revealing either side’s initial price to the other, since such a revelation would influence subsequent price negotiations. An independent auditor can verify that a software-based mediator will reveal only the information it is supposed to; a human mediator’s fairness is less easily verified.

8.4.3 Taxes and other Fees
Federal, state, and local authorities are scrambling to figure out how to get a piece of the revenue created electronically. The problem is particularly complex for interstate and international commerce. For example, some claim that even the state in which a server is located deserves to receive some sales tax from an e-commerce transaction. Others say that the state in which the seller is located deserves the entire sales tax (or value-added tax, VAT, in some countries). In addition to sales tax, there is a question about where (and in some case, whether) electronic sellers should pay business license tax, franchise fees, gross receipts tax, excise tax, privilege tax, and utility tax. Furthermore, how should tax collection be controlled? Legislative efforts to impose taxes on e-commerce are opposed by an organisation named the Internet Freedom Fighters. Their efforts have been successful so far: At the time this edition was written, there was a ban on taxing business done on the Internet in the United States and many other countries (sales tax only), which could remain valid until fall 2006.

8.4.4 Copyright
Intellectual property, in its various forms, is protected by copyright laws and cannot be used freely.

8.5 E-Commerce Failures
In this and other chapters of the book we presented dozens of examples that illustrate the success of the new economy and EC. Yet, failures of EC initiatives are fairly common. Furthermore, during 2000–2002, large numbers of dot-com companies failed. In this section we will look at some examples of failures and their causes. We will also look into some success factors that can be used to prevent failure.
8.5.1 Pre-Internet Failures

Failures of e-commerce systems should not seem surprising, since we have known about failures of EDI systems for more than 10 years. A typical example involved the attempt of the U.S. Food and Drug Administration (FDA) to install online collaboration systems to reduce drug review time (Williams et al., 1997). It was basically an electronic submission system and then an intranet-based internal distribution and review system. The system failed for various reasons. We present them in list form below; many of these reasons are typical of the reasons for EC failures in general, so we have highlighted the key words, for your future reference.

- No standards were established for submitted documents.
- There was resistance to change to the new system, and the FDA did not force reviewers to work electronically.
- The system was merely an electronic version of existing documents. No business process reengineering (BPR) was undertaken in planning (or improving) the new system.
- The FDA lacked technical expertise in interorganisational information systems and in collaborative commerce.
- No training or even information was provided to the FDA’s end users.
- There were learning curve difficulties, and no time was allowed to learn different document systems.
- Clients (the pharmaceutical companies) were not encouraged to make electronic submissions.
- There was no IS planning. The FDA knew that a business process design study was needed, but it did not do it.

In addition to sales tax, there is a question about where (and in some case, whether) electronic sellers should pay business license tax, franchise fees, gross receipts tax, excise tax, privilege tax, and utility tax. Furthermore, how should tax collection be controlled? Legislative efforts to impose taxes on e-commerce are opposed by an organisation named the Internet Freedom Fighters. Their efforts have been successful so far: At the time this edition was written, there was a ban on taxing business done on the Internet in the United States and many other countries (sales tax only), which could remain valid until fall 2006. However, the FDA learned from its mistakes. An improved EDI-based system was installed in 1998/1999—after a BPR was done, training was completed, and standards were provided. The system became a full success in 1999.

8.5.2 Internet Related EC Failures

Failures of e-commerce initiatives started as early as 1996. Early on, pioneering organisations saw the potential for EC, but expertise and EC business models were just developing. However, the major wave of failures started in 2000, as secondary funding that was needed by Internet-based EC began to dry up. Here are some examples (again, with key words highlighted). PointCast, a pioneer in personalised Web-casting, folded in 1998 due to an incorrect business model. Similarly, Dr. Koop, a medical portal, was unable to raise the needed advertising money, so the company folded. The diagnosis: death due to incorrect business model.

- An Internet mall, operated by Open Market, was closed in 1996 due to an insufficient number of buyers.
- Several toy companies—Red Rocket (a Viacom Company), eparties.com, and babybucks.com—failed due to too much competition, low prices, and lack of cash. Even E-toys, a virtual toy retailer that affected the entire toy industry, folded in 2001 due to its inability to generate profits and the need for additional funding for expanding its logistics infrastructure. It was sold to kbkids.com.
- Garden.com closed its doors in December 2000 due to lack of cash. Suppliers of venture capital were unwilling to give the company any more money to “burn.”
- Living.com, the online furniture store, closed in 2000. The customer acquisition cost was too high.
- PaperX.com, an online paper exchange in the U.K., folded due to lack of second-round funding (funding subsequent to a firm’s original funding but before it goes to the stock market with a stock offering).
- Webvan, an online grocery and same-day delivery company, invested over $1 billion in infrastructure of warehouses and logistics. But its income was insufficient to convince investors to fund it further. It collapsed in 2002. Kozmo, another same-day delivery company in New York, Boston, and other large cities was unable to show sufficient profit and collapsed in 2001.
In late 2000 Chemdex.com, the “granddaddy” of the third-party exchanges, closed down. Ventro.com, its parent company, said that the revenue growth was too slow and that a new business model was needed. Because of the difficulty in obtaining enough buyers and sellers fast enough (before the cash disappears), some predicted that as many as 90 percent of all 1998–2001 exchanges would collapse (Ulph, Favier, and O’Connell, 2001). And indeed, during 2001–2003 large numbers of exchanges folded or changed their business models.

Even Amazon.com, considered by many as one of the most successful ecommerce sites, did not reach profitability until the end of 2001. The major lessons of the Internet-based EC failures were summarised by Useem (2000) in his “12 truths” and by Agrawal et al. (2001). The major reasons for failure are incorrect revenue model, lack of strategy and contingency planning, inability to attract enough customers, lack of funding, channel conflict with distributors, too much online competition in standard (commodity) products (e.g., CDs, toys), poor order fulfillment infrastructure, and lack of qualified management. To learn more about EC failures, visit whytheyfailed.com and techdirt.com. Also, see Kaplan (2002).

8.5.3 Failed EC Initiatives
Whereas failing companies, especially publicly listed ones, are well advertised, failing EC initiatives within companies, especially within private companies, are less known. However, news about some failed EC initiatives has reached the media and been well advertised. For example, Levi Strauss stopped online direct sales of its apparel (jeans and its popular Dockers brand) on its Web site (livestrauss.com) after its major distributors and retailers put pressure on the company not to compete with their brick-and-mortar outlets (channel conflict). Another EC initiative that failed was a joint venture between Intel and SAP, two world-class companies, which was designed to develop low-cost solutions for SMEs. It collapsed in August 2000. Large companies such as Citicorp, Disney, and Merrill Lynch also closed EC initiatives after losing millions of dollars in them.

8.6 Success Stories and Lessons Learned
There are hundreds of EC success stories, primarily in specialty and niche markets (see Athitakis, 2003). One example is Puritan.com, a successful vitamin and natural health care product store. Another one is Campusfood.com, which serves take-out food to college students. Monster.com is doing very well, and so is Southwest Airlines Online (iflyswa.com). Alloy.com is a successful shopping and entertainment portal for young adults. Here are some of the reasons for EC success and some suggestions from EC experts on how to succeed:

- Thousands of brick-and-mortar companies are slowly adding online channels with great success. Examples are Uniglobe.com, Staples.com, Homedepot.com, Clearcommerce.com, 1-800-FLOWERS (800flowers.com), and Southwest Airlines (iflyswa.com).

- As of late 2000, more companies were pursuing mergers and acquisitions (e.g., Ivillage.com with Women.com, though each maintains its separate Web site). Mergers seem to be a growing trend (see Bodow, 2000).

- Peter Drucker, the management guru, provides the following advice: “Analyse the opportunities, go out to look, keep it focused, start small (one thing at a time), and aim at market leadership” (quoted in Daly, 2000).

- A group of Asian CEOs recommend the following factors that are critical for success: select robust business models, understand the dot-com future, foster e-innovation, carefully evaluate a spin-off strategy, co-brand, employ ex-dot- com staffers, and focus on the e-generation as your market (e.g., alloy.com and bolt.com) (Phillips, 2000).

- Consultant PricewaterhouseCoopers (pwgcglobal.com) suggests avoiding technology malfunctions (e.g., inability to handle a surge of orders quickly enough), which erode consumer trust.

- Many experts (e.g., The National Institute for Standards and Technology, NIST) recommend contingency planning and preparing for disasters (as reported by Buchholz, 2002).

- Agrawal et al. (2001) suggest that companies should match a value proposition with customer segmentation, control extensions of product lines and business models, and avoid expensive technology.

- Huff et al. (1999) suggest the following critical success factors for e-commerce: add value, focus on a niche and then extend that niche, maintain flexibility, get the technology right, manage critical perceptions, provide excellent customer service, create effective connectedness, and understand Internet culture.
Confidentiality is the term refer as the ethical and professional duty which is performed on not to disclose any inappropriate information to a third party. Certain professionals who hold Certified Confidentiality Officer (CCO) certification apply for the confidentiality because of their legal or ethical requirements. In business, it is used to protect the privacy of a business entity and its critical or sensitive business information. Policies and procedures are must for protection against spying and for intentional or unintentional disclosure of sensitive or owner’s information. These policies and procedures are being mandated by laws or regulations or by the professional ethical obligations of employees. These policies and procedures are also being implemented as a best practice to avoid insider or outsider access to critical business information. Inefficient preplanning of the flow of confidential and private information within the business organisation may result in false safeguarding of critical business secrets and thefts of intellectual property which includes property protected by copyrights, trademarks and patents. A confidentiality audit is a crucial step to business’s minimum requirements of being protected against danger or loss. This is a factfinding, non-fault-finding audit that involves: A search for vulnerabilities through information collection and analysis and a way to identify leaks, sources and indicators potentially exploitable by an adversary.

8.6.1 Reasons why Business Confidentiality can be Important
To keep Trade secrets and intellectual property away from business competitors. The improper dissemination of information about current business objectives or future projects may harm the business. For employee security and for the security of their families. For Job security. It encourages employees to make use of services which are being created to help them, such as counseling or other employee assistance programmers. It makes easier for the people to get help without any fear or damage to reputation or other relationships.

8.6.2 Confidentiality is Based on Four Basic Principles
Respect for a business’s right to privacy. Respect for human relationships in which business information is shared. Appreciation of the importance of confidentiality to both the business and its employees. Expectations that those who pledge to safeguard confidential information will actually do so. Confidentiality is must for the great interests of the organisation because disclosure of the information will cause great damage to the business or to other organisations. The confidentiality exists when information is designated as “confidential” (e.g. stamped or announced). It also applies where the need is obvious or evident (depending on the nature of the material or context of the situation) or when needed by applicable law-even when the information is not so important.

8.7 Business Needs and Security

8.7.1 Awareness
It does not depend solely on the individual to determine what is confidential or not. If the organisation treats the information as confidential, then the officials and employees of that organisation must understand the need for confidentiality. Also these individuals are not permitted to disregard their duty to maintain confidentiality. It is the duty of the Business officials and employees to keep certain business and personal information confidential. However this legal obligation exists even if officials and employees have not signed contracts or other documents related specifically to confidentiality. Board members are being trusted and it is their fiduciary duty to honor the business’s need to keep certain information confidential. A Board member or employee who discloses confidential information can create significant legal liability for the organisation if he/she is legally required to maintain confidentiality and may face personal liability in disclosing confidential information.

8.7.2 Security, Confidentiality and International Issues
The global market is vast having no unified regulatory guidelines or standards. Due to which e-commerce businesses must implement varied contingencies to ensure compliance with both domestic and foreign tax requirements regarding the sale of products and services. In the United States, firms are required to disclose any potential tax liabilities under the Sarbanes-Oxley Act of 2002, however there is no clear legislation of how state tax sales will be structured through e-commerce venues. In a polar opposite to the United States the European Union, issued a directive requiring “companies outside of the European Union to start paying value added tax on sales of electronically delivered goods and services to European customers” (Meller, 2002). Different national perspective regarding taxes requires individual e-commerce businesses to understand the global market and to develop internal controls to comply with the governing tax structure applicable to the areas in which they operate. In addition to tax concerns, U.S. firms must satisfy compliance with consumer protection and privacy legislation aimed at protecting individual consumers.
For example, the Gramm-Leach-Bliley Financial Modernisation Act requires companies to provide an option for consumers to determine if they want their information shared with third parties; the Children’s Online Privacy Protection Act (COPPA) Rule which applies to commercial web sites operators and an online services directed to children under age 13. The law makes parents to control the information that is being collected by their children online and how such types of information are used by them. (FTC, 2006) Industry practices of web developers in the United States, Canada and Europe were studied by the Federal Trade Commission (FTC). In a FTC report to Congress “four widely accepted fair information practices regarding the collection of personal identifying information from or about consumers online are Notice, Choice, Access and Security.” (FTC, 1998) FTC guidelines help the consumer-orientated commercial Web sites to adopt four widely accepted information practices:

- **Notice**: Web sites would provide clear and conspicuous notice of their information practices to the customers, including what information they collect, how they collect it (e.g. directly or through non-obvious means such as cookies), how they use it, how they provide Choice, Access and Security to consumers, whether they disclose the information collected to other entities or whether other entities are collecting information through the site.

- **Choice**: Web sites would offer choices to consumers to analyse them that how their personal information is being used beyond the use for which the information was provided (e.g. to consummate a transaction). Such choice would include both internal secondary uses (such as marketing back to consumers) and external secondary uses (such as disclosing data to other entities).

- **Access** – Web sites would offer consumers reasonable access to the information which has been collected about them, including a reasonable opportunity to review information and to correct inaccuracies or delete information.

- **Security** – Web sites would take reasonable steps to protect the security of the information they collect from the customers (FTC, 1998). The global marketplace has provided web-based firms with a larger customer community. However, charting the diverse domestic and international regulatory requirements will remain a challenge as independent nations develop legislation to regulate this medium.

### 8.8 Postulates about Confidentiality in the Business World

#### 8.8.1 The First Postulate
The first postulate says that a dynamic security mechanism is required to prevent losses (loss = cost) that will help to achieve objectives, i.e. the continued smooth operation of the business while ensuring: The security of both tangible and intangible elements of business. The security of employees and materials. The security of information, communications and information systems that are used to manage risk (risk = intention + ability + opportunity), whether the risk is personal, human, physical, technological or other has a great impact on the well being of the organisation.

#### 8.8.2 The Second Postulate
The second postulate says that these security mechanisms must involve: Prevention, Tracking ,and Corrective actions.

#### 8.8.3 The Third Postulate
The third postulate says that the security mechanism need real-time exposure and the tactical assessments that have been taken into account are: The risk or threat to the whole business; The acceptable level of risk or threat; The processes of reacting to a threat; The need to reduce the overall vulnerability.

#### 8.8.4 The Fourth Postulate
The fourth postulate says that the security mechanism must specially address the following policies and procedures to produce effective and tangible results. Policies for how to implement the security mechanism; Procedures detailing the implementation process.
8.8.5 The Fifth Postulate
The fifth postulate is to integrate the above issues in a coherent programme, call the “Security Programme” or “Security Master Plan”.

8.8.6 The Sixth Postulate
The sixth postulate says that the current business risks linked to each other create a complex co dependency. Therefore the management of initial frontline responses (e.g. guard actions and responsibilities at a building entrance) has passed into the arena of comprehensive security management.

8.8.7 The Seventh Postulate
The seventh postulate says that the security strategy must determine the nature of Legal and Ethical Issues risk in detail, in addition to specifying the response plan.

8.8.8 The Eighth Postulate
The eighth postulate says that the security mechanism must collect and spread information about security-related business processes as to manage the flow of information and the reputation of the business.

8.8.9 The Ninth Postulate
The ninth postulate says that if security mechanism become effective has to analyse recruiting information from different sources and use this information to protect the business.

8.8.10 The Tenth Postulate
The tenth postulate says that the security mechanism must be planned-in advance to analyse what happens on the next business day after a serious adverse event. Crises do not get anticipated or managed the vast majority of organisations and institutions once they occurred.

8.9 Crisis and Continuity
Business crisis interrupts the way an organisation manage business and attracts significant news media coverage and/or public scrutiny. These crisis are the forces that produce risk for the economics and well-being of the organisation and its employees. Most of the business crisis such as loss of critical/sensitive business information, either sudden or chronic, depends on the amount of advance notice and the chain of events in the crisis. These risks are rising continuously in domestic, foreign and private sectors. Sensitive Information Risk Analysis (SIRA) and Evaluation of Sensitive Information (ESA) is used by the business continuously to reduce and manage the risk of spying. The developed rules, policies, procedures, audits and continuing assessments are implemented to avoid the competitive loss of business secrets and is an important part of the overall framework of security. Confidentiality is referred to as a stand-alone process which helps to identify complete pathways that links to a potential “window of opportunity”.

Conservative assumptions can also be useful to estimate business exposure based on indicators and facts. The other important element is to gain support and commitment to the process from the organisation’s executive management. Confidentiality is prerequisite in any internal or external business transaction. A Certified Confidentiality Officer (CCO) can help and provide specific knowledge to avoid loss, to protect critical/sensitive business information, to safeguard proprietary information and to enrich a business’s awareness and training on confidentiality issues. A CCO can also integrate into philosophy of organization and recommends the idea that the “Nothingness Treaty” (nothing happened yesterday, nothing happened today, nothing will happen tomorrow) is a poor philosophy for protecting an organisation and its employees.
8.10 Legal, Ethical and Regulatory Issues

The Internet has reduced the geographic boundaries which help the organisations to conduct extensive research and planning to enter the e-commerce arena. Internet technology has a great effect on the global trade which includes multitude of products and services. E-Marketing tools used by the online travel industry helps the consumers to purchase travel services in convenient manner. However, many businesses and consumers are still worry of conducting their business over the Internet because of the shortfall of the predictable legal environment governing transactions.

8.11 Expedia Legal and Ethical Issues

Expedia is very much concerned with security and privacy of its customers. According to Expedia’s privacy policy, the company states “We understand that making purchases online involves a great deal of trust on your part; we take this trust very seriously and make it our highest priority to ensure the security and confidentiality of the personally identifiable information you provide us” (Expedia, 2006). In September of 2000, Expedia announced the successful completion of a privacy audit that was conducted by Pricewaterhouse Coopers. This audit took Expedia’s to an extensive inspection of its business practices and how it relates to the organisation’s privacy policy (Expedia, 2000). Expedia’s privacy policy explains how the organisation handles customer data, the confidentiality in which customer information is handled and how the company secures this information. Expedia.com has also setup regional offices that work with specific geographic locations across the world. Each local site reflects the laws and issues of that specific area. Every regional site has its own version of Expedia’s privacy policy and lists specific laws that apply to that country or area in which Expedia does business.

8.12 Travelocity

Security is Travelocity’s top priority which protects consumer personal information through security protocols within the company’s system infrastructure. Throughout the booking process, Travelocity ensures multiple security precautions after you completed your transactions. Firewall that act as shields to our computer networks makes the Travelocity systems very much protected. Travelocity ensure the protection of consumer’s credit card transactions and encrypts the consumer financial and personal data residing in these systems. Travelocity also shows concern about Privacy and confidentiality. Only third party travel service providers get the personal information when consumers reserve or purchase travels services through Travelocity Business. Customer private profile information is not sold to third parties. Occasionally, Travelocity Business will provide consumer information to a third party acting on their behalf for specialised projects such as market research surveys and contest entry processing. International issues and global barriers help the Travelocity to improve its infrastructure to provide support to global pricing and taxation by its leveraging parent company Sabre’s back-end system, which already ensures proper handling of international pricing. These improvements make Travelocity to offer services to customers in 94 countries. (Good ridge E, 2000).

8.13 Orbitz

Physical, administrative and technical safeguards are employed by Orbitz to protect the confidentiality and integrity of consumer information in its databases and reduce the risk of loss, misuse, unauthorised access, disclosures or modification of personal information. Any information transmitted electronically via the World Wide Web might not be secure. Orbitz makes the company to assume no liability for the loss of any information transmitted via the World Wide Web. However, personal financial data on credit cards used when making a booking, reservation or purchase on the site is encrypted for the transaction Orbitz’s privacy policy tells that consumer privacy is of great importance. Their privacy policy explains the principles and practices that apply to the Information collected from users which are personal in nature for services on the company site, in telephone or e-mail communications or in interviews, surveys, sweepstakes, contests or raffles. Simply put, without the consumer’s knowledge and permission Orbitz will not collect their Personal Information; nor disclose their Personal Information to third parties. Orbitz will make customers to view, correct or remove their Personal Information; and allow to takes reasonable steps to protect the
8.14 Awareness Personal Information

The international issues associated with Orbitz are managed by Travelport. Travelport solutions are a subsidiary of Cendant Corp. provides a global full service of strategic services and tools for mid and large corporations, providing access to online booking tools and global distribution services. Travelport’s International Rate Desk specialises in faring complex, multi-segment international itineraries. Using their experience and knowledge of customer contracts, specialised agents find the best options for international travelers and average savings of $550 per ticket (Cendant Corporate Travel, 2004). Research and planning must occur when an organisation decides to enter into e-commerce, because the Internet has changed the way organisations do business; these organisations must understand the legal, regulatory and ethical considerations of e-commerce before commencing an online website. A company could risk its success and livelihood by not abiding by the law or allowing private information or data to become compromised. Expedia, Travelocity and Orbitz, e-commerce sites do business in international markets and have addressed these issues by working with local countries and regions on how to best address the regulations of their respective geographic areas to ensure that each is compliant and are acting within the local laws.

8.15 Ethical Issues and Employer

The ethical issues are as follows

8.15.1 Monitoring Internet Usage

Internet monitoring put employers and employees at odds in the workplace because both are trying to protect personal interests. Employees want to maintain privacy and the employers want to ensure company resources not to be misused. Companies are trying to maintain ethical monitoring policies by avoiding indiscriminate monitoring of employees’ online activities.

8.15.2 Function

Some employers keep eye on the Internet use in the workplace area to protect their companies from legal problems that could arise if employees of the company misuse its computers for illegal online activities. Other employers measure the decline in productivity as some of the workers use the Internet to handle their personal business on company working time. The ethical challenges that are being faces by the company involve protecting their interests by monitoring the Internet while ensuring sense of privacy at the workplace.

8.15.3 Company Policies

Companies while monitoring workers’ Internet may install software on their computers to block access to specific sites that are unrelated to their jobs. A “PC World” article by Tony Bradley indicates that employers can establish respect for employees’ privacy by creating a written policy that clearly defines acceptable uses for company computers. The policy outlines the results for violating the policy and also the company’s right to monitor Internet users. Bradley notes that Internet monitoring could be a breach of privacy if employees never receive written notice on the appropriate use of company computers and the employer’s right to monitor online activities.

8.15.4 Company Rights

Some employees who fought against Internet monitoring in the workplace have tried to use the Fourth Amendment of the U.S. Constitution to support their case, according to Bradley. They claimed that Internet monitoring violates the Fourth Amendment because it is equal to an illegal search and seizure of property. Bradley also indicates that courts took side of employers, determining that employers own their company computers and related resources. Therefore, employers have the right to monitor the use of their property to guard companies against illegal activities.

8.15.5 Considerations

The Nolo law information website recommends that the Employers keep themselves on fine ethical and legal grounds by monitoring only Internet use for business-related reasons. For example, you may walk by an employee’s desk and notice a game site on the employee’s computer monitor however you would be able to analyse that employee is wasting company time by playing online games.
8.16 Advertising Issues

Following are the advertising issue:

8.16.1 Awareness List of Ethical and Legal Issues when Advertising

The advertising industry operates through strict regulations and is monitored by the legal agencies. Even having truth-in-advertising laws, advertisers have significant leeway to violate the ethical standards of a wide range of consumers. Advertisers have to take extra care when advertising to children, advertising potentially harmful products and using psychological tactics to stimulate demand. It helps to craft legal, responsible ad messages.

8.16.2 Truth in Advertising

The advertisements must be truthful not deceptive and unfair. The Evidences must be available for the advertisers for the backup claims. The FTC defines deceitful statements that are likely to misguide consumers who act reasonably under normal circumstances and that will affect purchase decisions of consumers. Unfair advertisements are proved to cause substantial, unavoidable injury while using a product, unless the injury is overcome by benefits.

8.16.3 Advertising to Children

Social development can impede or develop negative self images in children while building brand loyalty in them before they even understand what a brand is about. However the best way to act ethically in this area is to advertise to parents, not children.

8.16.4 Advertising Harmful Products

Different countries have different perception for advertising vice products and services and maintain a balance between placing personal responsibility on citizens and regulating what citizens are allowed to indulge in. For example, cigarette advertising is only permitted on specific media, excluding television and radio, while alcohol advertising is allowed on all media. Companies have to take a good look at the true nature of their product lines when deciding whether they are acting ethically as advertisers. Television ads for fast food hamburgers are completely legal and effective at building demand, for example, but doctors in the 21st century are beginning to find links between fast food and a national obesity epidemic. Pharmaceutical ads with lists of side effects, as another example, are often followed 10 years later by attorneys’ ads for class-action lawsuits against the companies for wrongful injury.

8.16.5 Advertising Tactics

Advertising tactics present more ethical challenges. Advertisers have a range of less-than-ethical yet legal tools at their disposal, including subliminal advertising, emotional appeals, taking advantage of less educated individuals, spreading propaganda for political campaigns and other tactics ethical advertisers consistently refrain from using. At the end we only can say that consumers will be more attracted to companies that do not use underhanded, psychologically manipulative tactics to gain their business.
Summary

- Ethical standards and their incorporation into law frequently trail technological innovation.
- Internet fraud and its sophistication have grown as much as, and even faster than, the Internet itself.
- Buyer protection is critical to the success of any commerce where buyers do not see the sellers, and this is especially true for e-commerce.
- Look for reliable brand names at sites like Wal-Mart Online, Disney Online, and Amazon.com. Before purchasing, make sure that the site is authentic by entering the site directly and not from an unverified link.
- Search any unfamiliar selling site for the company’s address and phone and fax numbers. Call up and quiz the employees about the sellers.
- Most electronic payment systems know who the buyers are; therefore, it may be necessary to protect the buyers’ identities.
- By using tracking software, companies can track individuals’ movements on the Internet.
- Garden.com closed its doors in December 2000 due to lack of cash. Suppliers of venture capital were unwilling to give the company any more money to “burn.”
- Living.com, the online furniture store, closed in 2000. The customer acquisition cost was too high.
- The FDA lacked technical expertise in interorganisational information systems and in collaborative commerce.
- Whereas failing companies, especially publicly listed ones, are well advertised, failing EC initiatives within companies, especially within private companies, are less known.
- Thousands of brick-and-mortar companies are slowly adding online channels with great success. Examples are Uniglobe.com, Staples.com, Homedepot.com, Clearcommerce.com, 1-800-FLOWERS (800flowers.com), and Southwest Airlines (iflys.wa.com).
- As of late 2000, more companies were pursuing mergers and acquisitions (e.g., Ivillage.com with Women.com, though each maintains its separate Web site). Mergers seem to be a growing trend (see Bodow, 2000).

References


Recommended Reading

Self Assessment

1. Ethical standards and their incorporation into law frequently trail ________ innovation.
   a. technological
   b. logical
   c. numerical
   d. illogical

2. Internet ________ and its sophistication have grown as much as, and even faster than, the Internet itself.
   a. usage
   b. fraud
   c. crime
   d. exploration

3. Stocks are only one of many areas where swindlers are ________.
   a. inactive
   b. enabled
   c. disabled
   d. active

4. ________ are especially conducive for fraud, by both sellers and buyers.
   a. Bartering
   b. Auctions
   c. Bargaining
   d. E-tendering

5. Buyer protection is critical to the success of any commerce where buyers do not see the sellers, and this is especially true for ________.
   a. e-tender
   b. e-retail
   c. e-tailing
   d. e-commerce

6. ________ have legal recourse against customers who download without permission copyrighted software and/or knowledge and use it or sell it to others.
   a. Buyers
   b. Sellers
   c. Customers
   d. Whole sellers

7. Internet addresses are known as ________ names.
   a. domain
   b. range
   c. ip
   d. computer
8. _________ refers to the practice of registering domain names in order to sell them later at a higher price.
   a. Cyber crime
   b. Internet fraud
   c. Cyber squatting
   d. Internet skating

9. Intermediaries provide _________ types of services.
   a. three
   b. two
   c. four
   d. six

10. When the automobile was invented, there were ______ startup companies between 1904 and 1908.
    a. 120
    b. 90
    c. 240
    d. 360
Case Study I

E-Bay – The World’s Largest Auction Site

E-Bay (ebay.com) is the world’s largest auction site, and one of the most profitable e-businesses. The successful online auction house has its roots in a 50-years old novelty Item—Pez candy dispensers. Pamela Kerr, an avid collector of Pez dispensers, came up with the idea of trading them over the Internet. When she expressed this idea to her boyfriend (now her husband), Pierre Omidyar, he was instantly struck with the soon-to-be famous e-business auction concept.

In 1995, the Omidyars created a company called AuctionWeb. Later renamed eBay, the company has since become the premier online auction house, with millions of unique auctions in progress and over 500,000 new items added each day. eBay is now much more than an auction house, as we will see. But its initial success was in electronic auctions. The business model of eBay was to provide an electronic infrastructure for conducting mostly C2C auctions, although it caters to small businesses as well. Technology replaces the traditional auctioneer as the intermediary between buyers and sellers.

On eBay, people can buy and sell just about anything. The company collects a submission fee upfront, plus a commission as a percentage of the sale amount. The submission fee is based on the amount of exposure you want your item to receive. For example, a higher fee is required if you would like to be among the “featured auctions” in your specific product category, and an even higher fee if you want your item to be listed on the eBay home page under Featured Items.

The auction process begins when the seller fills in the registration information and posts a description of the item for sale. The seller must specify a minimum opening bid. Sellers might set the opening bid lower than the reserve price, a minimum acceptable bid price, to generate bidding activity. If a successful bid is made, the seller and the buyer negotiate the payment method, shipping details, warranty, and other particulars. eBay serves as a liaison between the parties; it is the interface through which sellers and buyers can conduct business. eBay does not maintain a costly physical inventory or deal with shipping, handling or other services that businesses such as Amazon and other retailers must provide.

After a few years of successful operations and tens of million of loyal users, eBay started to do e-tailing, mostly in fixed prices. By 2003, eBay operated several specialty sites, such as eBay Motors, and made wireless trading possible. eBay also operates a business exchange in which small and medium-sized enterprises can buy and sell new and used merchandise, in B2B or B2C modes. In addition, half.com, the famous discount e-tailer, is now part of eBay and so is PayPal.com, the P2P payment company.

E-Bay operates globally, permitting international trades to take place. Country-specific sites are located in over 25 countries. Buyers from more than 160 other countries also participate. eBay also operates a business exchange in which small and medium-sized enterprises can buy and sell new and used merchandise, in B2B or B2C modes. Finally, eBay operates locally: It has over 60 local sites in the United States that enable users to easily find items located near them, to browse through items of local interest, and to meet face-to-face to conclude transactions. As of fall 2002, eBay had close to 50 million registered users, and according to company financial statements, eBay transacted over $14.87 billion in sales in 2002.

The impact of eBay on e-business has been profound. Its founders took a limited-access off-line business model—auctions—and, by using the Internet, brought it to the desktops of consumers worldwide. This business model consistently generates a profit and promotes a sense of community—a near addiction that keeps traders coming back. As a matter of fact, the only place where people are doing more online business than off-line business (and considerably more, at that) is auctions. For comparison, e-tailing is less than 2 percent of the total retailing.

Questions
1. Who is the avid collector of Pez dispensers?
   Answer
   Pamella Kerr is the avid collector of Pez dispensers.

2. Which company is created by Omidyars?
   Answer
   Auction Web is created by Omidyars

3. In which year the company Auction Web was created?
   Answer
   The company Auction Web was created in 1995

4. When does the auction start?
   Answer
   The auction process begins when the seller fills in the registration information and posts a description of the item for sale.

5. By the year 2003 what are all the specialty sites eBay operated?
   Answer
   By 2003, eBay operated several specialty sites, such as eBay Motors, and made wireless trading possible. eBay also operates a business exchange in which small and medium-sized enterprises can buy and sell new and used merchandise, in B2B or B2C modes. In addition, half.com, the famous discount e-tailer, is now part of eBay and so is PayPal.com, the P2P payment company.
Case Study II

Amazon.com: The King of E-Tailing

Entrepreneur Jeff Bezos, envisioning the huge potential for retail sales over the Internet, selected books as the most logical product for e-tailing. In July 1995, Bezos started Amazon.com, an e-tailing pioneer, offering books via an electronic catalog from its Web site. Key features offered by the Amazon.com “superstore” were broad selection; low prices; easy searching and ordering; useful product information and personalisation; secure payment systems; and efficient order fulfillment. Early on, recognising the importance of order fulfillment, Amazon.com invested hundreds of millions of dollars in building physical warehouses designed for shipping small packages to hundreds of thousands of customers. Over the years since its founding, Amazon.com has continually enhanced its business models and electronic store by expanding product selection, improving the customer’s experience, and adding services and alliances. For example, the company now offers specialty stores, such as its professional and technical store. It has expanded its editorial content through partnerships with experts in certain fields. It has increased product selection with the addition of millions of used and out-of-print titles. It also is expanding its offerings beyond books. For example, in June 2002 it became an authorised dealer of Sony Corp. for selling Sony products online.

In 1997, Amazon started an extensive affiliates program. By 2002, the company had more than 500,000 partners that refer customers to Amazon.com. Amazon pays a 3 to 5 percent commission on any resulting sale. Amazon.com has undertaken alliances with major “trusted partners” that provide knowledgeable entry into new markets, such as cars, health and beauty aids, toys, and even wireless phone service providers. In yet another extension of its services, in September 2001 Amazon signed an agreement with Borders Group Inc., providing Amazon’s users with the option of picking up books, CDs, etc. at Borders’ physical bookstores. Amazon.com also is becoming a Web fulfillment contractor for national chains such as Target and Circuit City.

Amazon.com is recognised as an online leader in creating sales through customer intimacy and customer relationship management (CRM), which is cultivated by informative marketing front-ends and one-to-one advertising. In addition, sales are supported by highly automated, efficient back-end systems. When a customer makes a return visit to Amazon.com, a cookie file identifies the user and says, for example, “Welcome back, Sarah Shopper,” and then proceeds to recommend new books from the same genre of previous customer purchases. The company tracks customer purchase histories and sends purchase recommendations via e-mail to cultivate repeat buyers. These efforts usually result in satisfactory shopping experiences and encourage customers to return. The site has an efficient search engine and other shopping aids.

Customers can personalise their accounts and manage orders online with the patented “One-Click” order feature. This personalised service includes an electronic wallet, which enable shoppers to place an order in a secure manner without the need to enter their address, credit card number, etc., each time they shop. One-Click also allows customers to view their order status and make changes on orders that have not entered yet the shipping process.

Annual sales for Amazon.com have trended upward, from $15.7 million in 1996 to $600 million in 1998 to about $4 billion by 2002. With over 17 million book, music, and DVD/video titles (including over 1 million Japanese language titles), Amazon.com has sold products to some 20 million customers. According to Retail Forward’s study, Top E-Retail 2001 (emarketer.com, August 1, 2002), Amazon was the number 1 e-tailer in 2001, generating $3.12 billion. This level of sales represented 22 percent of the total online sales for all 50 companies in the study. According to Bayers (2002), Amazon is becoming very successful in reducing its costs and increasing its profitability.

In January 2002, Amazon.com declared its first ever profit—for the 2001 fourth quarter—and followed that by a profitable first quarter of 2002. Yet the company’s financial success is by no means assured: The company sustained operating losses in the second and third quarters of 2002, though those losses were smaller than losses in the same quarters in preceding years. In the fourth quarter of 2002, the company again made a profit. Like all businesses, and especially all e-tailing businesses, Amazon.com will continue to walk the fine line of profitability for the foreseeable future.
Questions
1. What are critical success factors of Amazon?
2. What advantages does it have over other e-tailers (e.g. Wal-Mart online or toysrus.com)?
3. What are the disadvantages of Amazon.com?
4. What is the purpose of alliances Amazon.com has made?
Case Study III

E-Procurement at Schlumberger

Schlumberger is an $8.5 billion company with 60,000 employees in 100 countries. That makes it the world’s largest oil-service company. In 2000 the company installed a Web-based automated procurement system in Oilfield Services, its largest division. With this system, employees can buy office supplies and equipment as well as computers direct from their desktops. The system replaced a number of older systems, including automated and paper-based ones. The single desktop system streamlined and sped up the purchasing operation, reducing costs, as well as the number of people involved in the process. The system also enables the company to consolidate purchases for volume discounts from vendors. The system has two parts:

- The internal portion uses Commerce One’s Buy Site procurement software and runs on the company’s intranet. Using it is like shopping at an online store: Once the employee selects the item, the system generates the requisition, routes it electronically to the proper people for approval, and turns it into a purchase order.
- Commerce One’s Market Site transmits the purchase orders to the suppliers. This B2B Internet marketplace connects Schlumberger with hundreds of suppliers with a single, low-cost, many-to-many system.

Negotiation of prices is accomplished with individual vendors. For example, Office Depot’s entire catalog is posted on the Market Site, but the Schlumberger employees see only the subset of previously negotiated products and prices. (In the future, the company plans to negotiate prices in real time through auctions and other bidding systems.)

The benefits of the system are evident in both cost and processes. The cost of goods has been reduced, as have the transaction costs. Employees spend much less time in the ordering process, giving them more time for their true work. The system is also much more cost efficient for the suppliers, who can then pass along savings to customers. By using one system worldwide, Schlumberger saves time for employees who are transferred—they don’t spend time learning a new system wherever they go. Procurement effectiveness can be increased because tracing the overall procurement activity is now possible.

Getting the system up and running was implemented in stages and ran at the same time as existing systems. There were no implementation issues for employees (once the system was in place, the old system was disabled), and there were no complaints in regard to the old system being shut down (no one was using the old system anymore).


Questions
1. What are the benefits of e-Procurement system to Schlumberger?
2. How does the e-procurement system empower the buyers?
3. Why would real-time price negotiations be beneficial?


"Kumar, H.L., E-Government and Consumer to Consumer EC, [Video Online]:<http://www.youtube.com/watch?v=6SsMKfHmQ44>[Accessed 18 September 2012].


Recommended Reading

## Self Assessment Answers

### Chapter I
1. b  
2. a  
3. c  
4. c  
5. d  
6. c  
7. b  
8. a  
9. c  
10. c

### Chapter II
1. a  
2. b  
3. d  
4. c  
5. c  
6. d  
7. a  
8. c  
9. c  
10. b

### Chapter III
1. a  
2. b  
3. b  
4. d  
5. c  
6. d  
7. c  
8. b  
9. b  
10. a

### Chapter IV
1. a  
2. b  
3. d  
4. c  
5. b  
6. b  
7. d  
8. c  
9. b  
10. b
Chapter V
1. b
2. a
3. d
4. b
5. c
6. b
7. c
8. b
9. a
10. b

Chapter VI
1. a
2. c
3. a
4. d
5. b
6. d
7. b
8. c
9. a
10. d

Chapter VII
1. a
2. c
3. b
4. b
5. d
6. b
7. a
8. c
9. d
10. a

Chapter VIII
1. a
2. b
3. d
4. b
5. d
6. b
7. a
8. c
9. b
10. c