Technical University Of Liberec
Faculty of Economics

Study Program: Economics and Management
Specialisation: Business Administration

Electronic Commerce

Business to Consumer & Business to Business
BP-PE-KMG-200105

Supervisor: Ing. Jozefina Simova
Consultant: Ing. Jozefina Simova

Number of pages: 56
Number of Figures: 16
Number of Appendixes: 1
Date of Submission: 25.5.2001

Nader A.Ali Asad Ebrahim

TECHNICKÁ UNIVERZITA V LIBERCI

Hospodářská fakulta

Katedra marketingu

Akademický rok: 2000/01

ZADÁNÍ BAKALÁŘSKÉ PRÁCE

pro **Nader Abd Ali Asad Ebrahim**

obor č. 6208 R Podniková ekonomika

Vedoucí katedry Vám ve smyslu zákona č. 111 / 1998 Sb. o vysokých školách a navazujících předpisů určuje tuto bakalářskou práci:

Název tématu: **„E – Commerce"**
Business to Business & Business to Consumer

Pokyny pro vypracování:

- What e-commerce is.
- Challenges in implementing e-commerce.
- Benefits and problems of e-commerce.
- Recommendations for companies for implementation of e-commerce.
- Electronic commerce market size projections.

KMG/PE-MG
56 s. / 1 s. příl.

TECHNICKÁ UNIVERZITA V LIBERCI
Univerzitní knihovna
Voronežská 1329, Liberec 1
PSČ 461 17

V 159/02 H.

Rozsah grafických prací:

25 - 30 stran textu + nutné přílohy

Rozsah průvodní zprávy:

Seznam odborné literatury:

- Efraim Turban – Jae Lee – David King, H. M. Chung: Electronic commerce, (A Managerial Perspective) Prentice Hall, USA, 1999
- Peter Fingar – Harsha Kumar: Enterprise e-commerce, Meghan Kiffer pr, UK, January 2000
- Timmers, J., J.: Electronic Commerce, John Wiley & Sons, USA, May 2000
- Smith, R.; Thompson, M.; Speaker, M.: The Complete Idiot's Guide To E – Commerce, Macmillan Computer Publishing
- Enternet web sites: http//www.e-commerce technology inc.com
  http//www.valu.net/corpover.htm
  http//www.unisys.com
  http//members.nbci.com/etoung/constellation/e-commerce.html

Vedoucí bakalářské práce: Ing. Jozefína Simová

Konzultant: Ing. Jozefína Simová

Termín zadání bakalářské práce: 31.10.2000

Termín odevzdání bakalářské práce: 25.5.2001

L.S.

Technická univerzita v Liberci
Hospodářská fakulta

doc. RNDr. Pavel Strnad, CSc.
vedoucí katedry

prof. Ing. Jan Ehleman, CSc.
děkan Hospodářské fakulty

I declare that this Bachelar work has been done independent with using Some literatures and Knowledge of Supervisor and Consultation.

.....

In Liberce
..25.-5.-2001

Acknowledgement

I Would like to express my thanks to every single person who gave me the help and the time to complete this project especially to Ing. Jozefina Simova Deputy head of marketing department in Technical University of Liberce for being very helpful and for her guidance toward the completion of this project Also Mr. Bharat Jashanmal the managing Director of Jashanmal office in Bahrain and the staff for their Co-operation and kindness.

Summary

This Project is to describe what Electronic Commerce is by describing the two kind of E-Commerce, Business to Consumer and Business to Business Electronic Commerce.

And I described the benefits and limitations of Electronic Commerce and the strategy and implementation of E-Commerce, and how retailing works through Electronic Commerce.

Electronic Commerce to be clearly understands I explain it with an example of our real life by the bookstores in the Web sites like Jashanmal & Sons, Bahrain.

Tento projekt se zabývá otázkou elektronického obchodování, které je vyjádřeno dvěma typy: podnikání – spotřebitel a podnikání – podnikání.

Dále jsem se zaměřil na prospěchy a omezení v elektronickém obchodování, na strategii a realizaci elektronického obchodování, a jak do tohoto obchodování zasahuje maloobchodní činnost.

Pro lepší vysvětlení elektronického obchodování jsem použil příběh ze života týkající se nabídky knih na internetových stránkách. Pro upřesnění jsem si vybral firmu Jashanmal & Sons,Banhrain, zabývající se tímto prodejem.

Content

Summary
Acknowledgement
Introduction

Chapter 1 Foundation of Electronic Commerce....1
1.1 Definition and content of the field....2
1.2 Benefits of Electronic Commerce....8
1.3 The limitations of Electronic Commerce....9
1.4 Impact of Electronic Commerce....10
1.5 Putting it all togather....12
1.6 Electronic Commerce Strategy and Implementation....13

Chapter 2 Business to Consume Electronic Commerce....15
2.1 Business to Consumer Electronic Markets....16
2.2 Types of Business to Consumer Electronic Commerce....18
2.2.1 Direct Marketing....18
2.2.2 Electronic Intermediaries....19
2.2.3 Procedure for Internet shopping....21
2.2.4 The impact of EC on traditional retailing system....22
2.3 Business to Consumer market and market research....23

Chapter 3 Business to Business Electronic Commerce....25
3.1 Characteristics of Business to Business EC....26
3.1.1 Supply chain....26
3.1.2 Entities of Business to Business EC....27
3.2 Models of Business to Business EC....30
3.3 Electronic Marketing in Business to Business EC....34
3.3.1 Direct marketing to reach functional buyers....35
3.3.2 Relationship Marketing....35
3.3.3 Audience strategy and mailing lists....35
3.3.4 Electronic/Interactive Media....35
3.3.5 How to build your e-mail lists and marketing database....36
3.4 Comparative Analysis of B2C and B2B EC platforms....36

Chapter 4 Intranet and Extranet....40
4.1 Architecture of the Internet, Intranet and Extranet....41
4.1.1 The Intranet....41
4.1.2 The Intranet: An Intra-Business Delivery System....41
4.1.3 The Extranet....42
4.2 Intranet Software....43
4.3 Application of Intranets....43
4.3.1 Generic function of Intranet....43

4.3.2 Intranet Application Areas....44
4.3.3 Industry-Specific Intranet Solutions....45
4.4 Basic concept of Extranets....46
4.4.1 The Extranets....46
4.4.2 Potential of the Extranet Market....46
4.4.3 Planning Extranets: Coordination and Security....47
4.5 The Structure of Extranets....47
4.6 Extranet products and services....48
4.7 Applications of Extranets....48
4.7.1 Benefits of Extranets....49

Chapter 5 Electronic Commerce in real life....50
5.1 Methods....51
5.2 Electronic Commerce Market Size projections....54

Conclusion....55
References....56

Introduction

Recently, international marketing has become a necessary way of life for firms that wish to survive and grow in the dynamic world economy of the new millennium. New markets are opening and old markets are evolving. New competitors are growing through alliances, acquisitions, mergers, and virtual offices - electronic-business. The global village is becoming a global marketplace. This continuing globalization has forced both business and business schools to become more sophisticated about international marketing.

As Internet-based network reality, speed and security have improved in recent years and as more businesses have connected to the Internet, traditional business are beginning to use the Internet to conduct electronic business and exchange information with customers, suppliers and distributors.

Companies pay a lot of lip service to the importance of Electronic Commerce in an organization's business strategy. It is the key for the companies to communicate their understanding of how the Internet will change the way they conduct business and innocent employees to break out of their current mode of conducting business and find better ways of streamlining operations and/or satisfying customers.

The aim of my project is preparing a proposal for companies about the use of Electronic Commerce (EC). It will provide an overview and description of the Electronic Commerce its Benefits and Limitations, characterizes Business-to-Business and Business-to-Consumer Electronic Commerce, Retailing in Electronic Commerce, Electronic Commerce Strategy and Implementation, and Electronic Commerce in our real life with an example of Jashanmal & Sons in Bahrain.

CHAPTER 1

Foundation of Electronic Commerce

1.1 Definitions and Content of the Field

Electronic commerce (EC) could become a significant global economic element in the next century. The infrastructure for EC in networked computing, which is emerging as the standard computing environment in business, home, and government. Networked computing connects several computers and other electronic devices by telecommunication networks. This allows users to access information stored in several places and to communicate and collaborate with others from their desktop computers. Although some people still use a stand-alone computer exclusively, the vast majority of people use computers connected to a global networked environment known as the Internet, or its counterpart within organizations, called an Intranet. The Intranet is a corporate network that functions with Internet technologies, such as browsers using Internet protocol. Another computer environment is an Extranet, a network that links Intranets of business partners over the Internet.

Why are companies restoring to EC? The reason is simple, information technology in general and EC in particular have become a major facilitator of business activities in the world today. Electronic commerce is also a catalyst of fundamental changes in the structure, operations, and management of organizations.

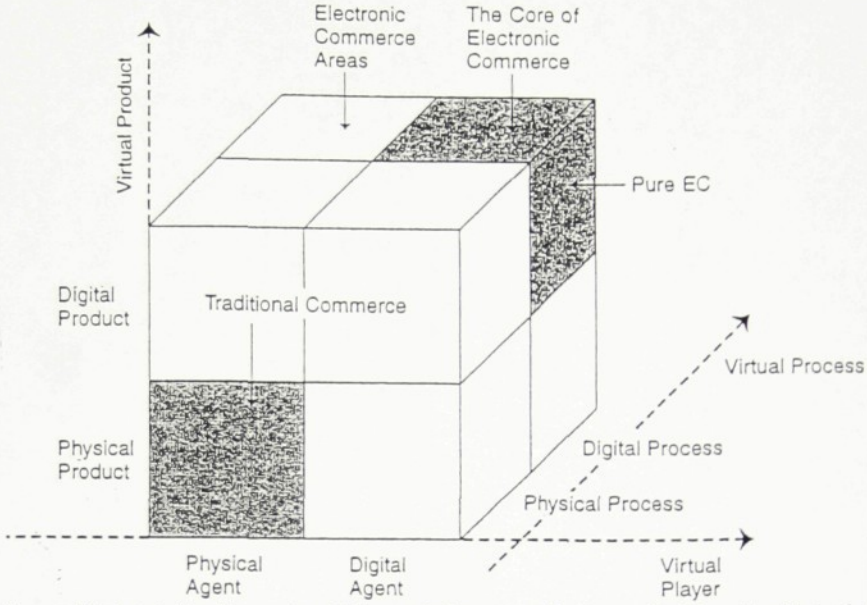
Definitions:

Electronic commerce is an emerging concept that describes the process of buying and selling or exchanging products, services, and information via computer networks including the Internet. Kalakota and Whinston (1997) define EC from these perspectives:

- From a communication perspective, EC is a delivery of information, products/services, or payments over telephone lines, computer networks, or any other electronic means.
- From a business process perspective, EC is an application of technology to ward the automation of business transactions and work flow.
- From a service perspective, EC is a tool that addresses the desire of firms, consumers, and management to cut service costs while improving the quality of goods and increasing the speed of service delivery.
- From an online perspective, EC provides the capability of buying and selling products and information on the Internet and other online services.

Electronic commerce can take many forms depending on the degree of digitization of the products sold, the process, and the delivery agent. Choi et. al (1997) created a model that explains the possible configurations of these three dimensions see (Figure 1). A product can be physical or digital, an agent can be physical or digital, and the process can be physical or digital. These create eight cubes, each of which has three dimensions. In additional commerce all dimensions are physical, and in pure EC all dimensions are digital. All other cubes include a mix of digital and physical dimensions.

igure 1:The Dimensions of Electronic Commerce.

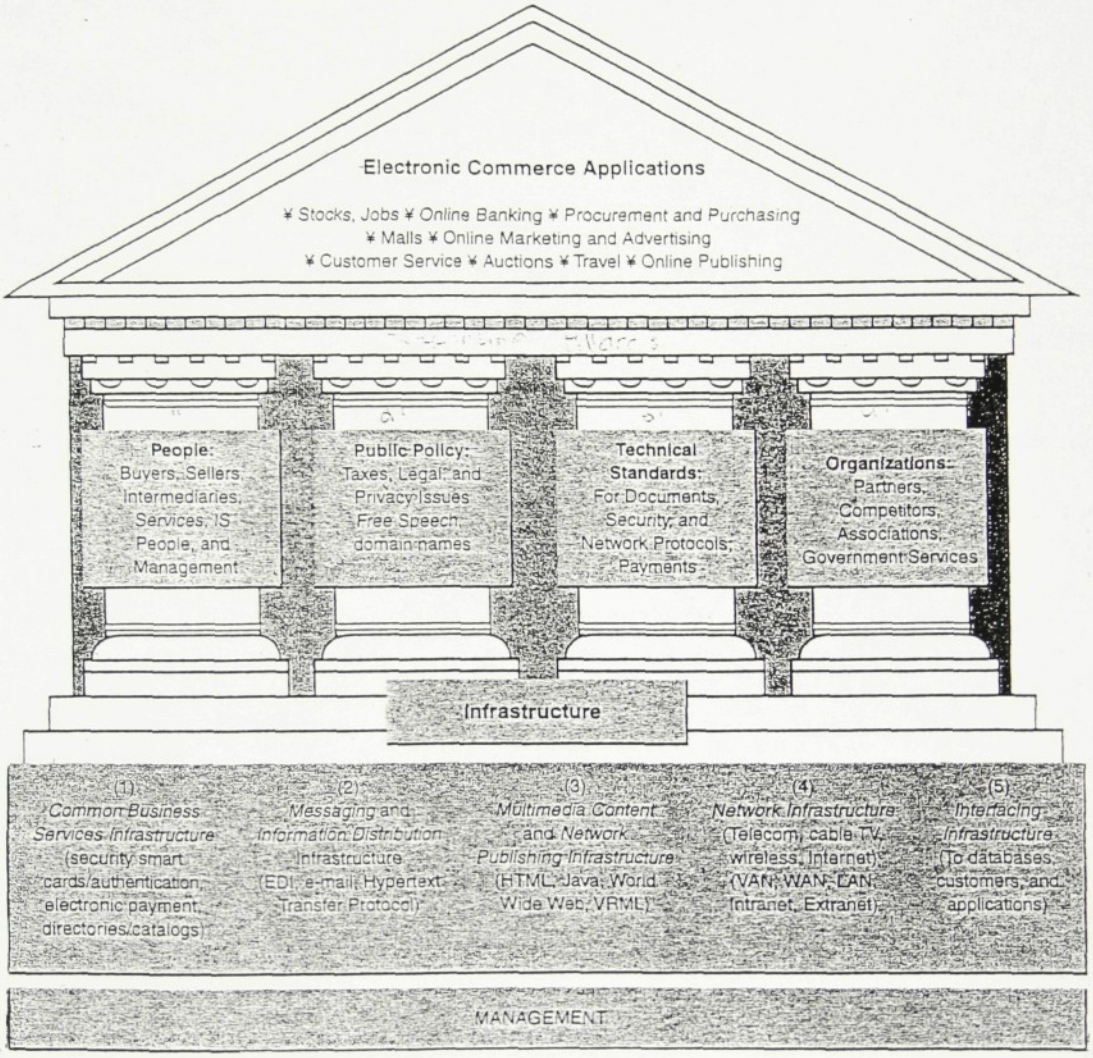


Source: Choi et al, *The Economics of Electronic Commerce* (Indianapolis: Macmillan Technical Publications, 1997), p. 18.

The EC Field:
The Framework of EC

Many people think EC is just having a Web site, but EC is much more than that. There are dozens of applications of EC such as home banking, shopping in online stores and malls, buying stocks, finding a job, conducting an auction, and collaborating electronically on research and development projects. Figure 2 shows that the EC applications are supported by infrastructures, and their implementations are dependent on four major areas: people, public policy, technical standards and protocols, and other organizations.

Figure 2: A Framework for Electronic Commerce.



Source: Turban et al. 1999.

Electronic Markets:

A market is a network of interactions and relationships where information, products, services, and payments are exchanged. When the marketplace is electronic, the business center is not a physical building but rather a network-based location where business interactions occur. As can be seen in the Figure 3, the electronic market is the place where shoppers and sellers meet. The market handles all the necessary transactions, including the transfer of money between banks.

Overview of Electronic Marketing Structure:

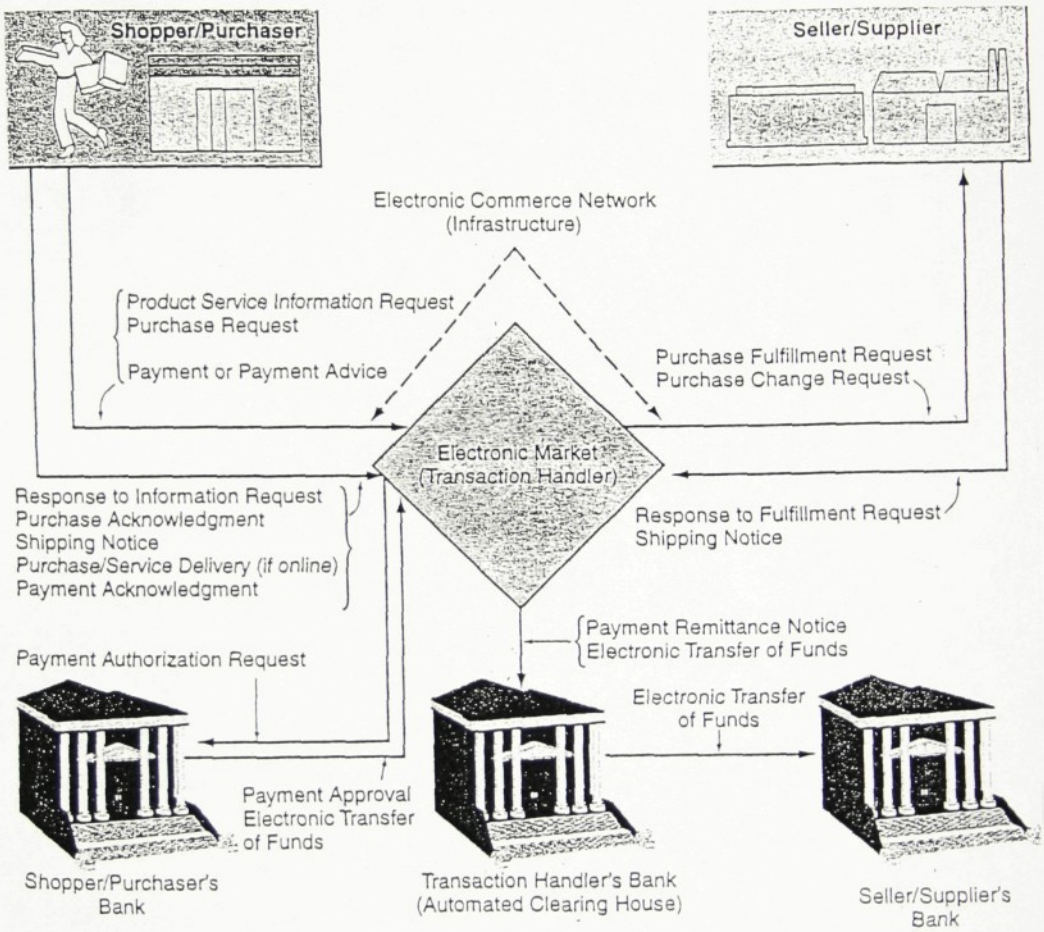
The opening vignette has demonstrated a competitive structure of electronic retailers. Electronic marketing can be classified as **consumer-oriented (B2C)** and **business-oriented electronic marketing (B2B)**. This chapter focuses on consumer-oriented marketing over the Internet.

By using the Internet, manufactures can directly contact customers without using intermediaries. The manufacturers direct marketing can be realized as long as they sell established brands and their home site is well known. If manufacturers site does not have high visibility, just opening a home page and passively waiting for customers access may not contribute greatly to sale. Therefore, it is necessary for companies to heavily advertise their Web sites addresses. Any cost-effective advertisement method can be employed for this purpose. One example is to link the site to well known electronic directories, and most manufactures use the directory service of intermediaries. These intermediary sites are called electronic shopping malls (or e-mall). We can observe two types of electronic shopping malls: electronic distributors and electronic brokers, if the e-mall takes responsibility for order fulfillment, it is an electronic distributor. In contrast, electronic brokers only help the search process.

During the initial EC stage, established distributors like department stores and discount stores were not the major players in electronic retailing. The traditional distributors used their home pages and electronic catalogs to attract customers to the physical stores, although large distributors like Wal-Mart and JCPenny take orders over the Internet as well. Initially, the main concern for electronic marketing involved securing technologies necessary to implement Internet-based marketing, such as powerful search capability and secure electronic payment.

Today the main concern of management is shifting to how to utilize the opportunity of Internet-based marketing to enhance competitiveness in harmony with existing marketing channel.

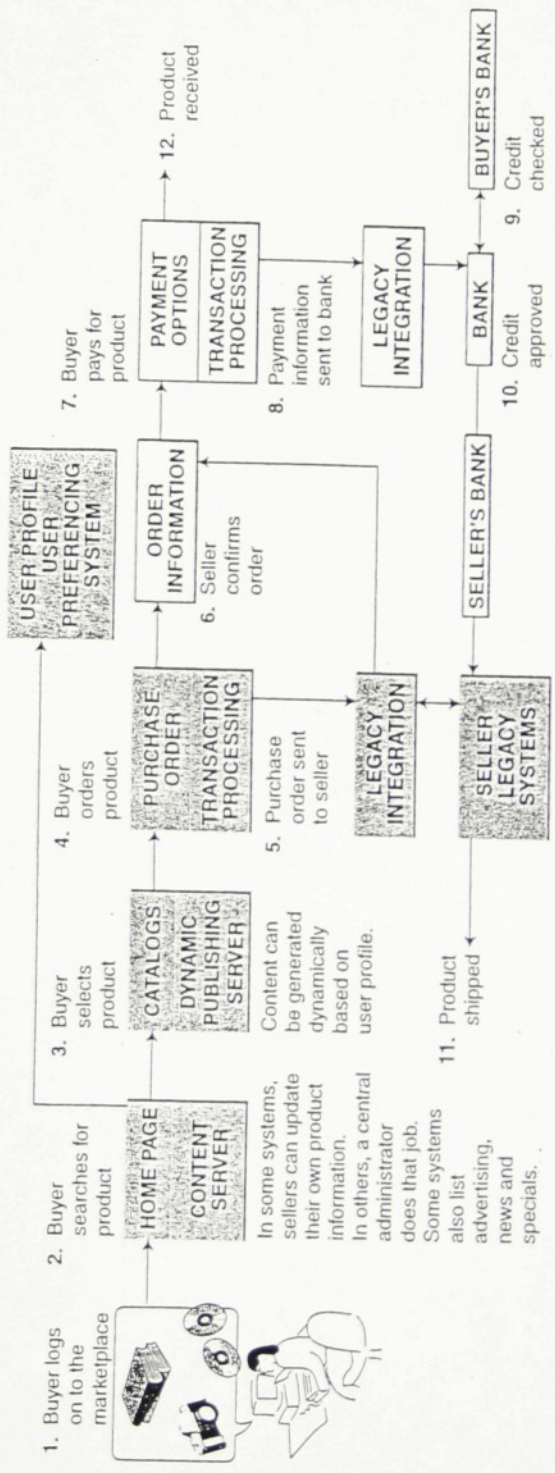
igure 3: Electronic Markets.



Source: Modified from Senn (1996), p. 19.

Structure Of Electronic Market:

Figure 4: How Does an Electronic Market Work?



Source: Copyright April 28, 1997, by ComputerWorld, Inc., Farmingham, MA 01701. Reprinted with permission from *ComputerWorld*.

.2 Benefits of Electronic Commerce

ɜenefits of Electronic Commerce can be evaluated as benefits to organisations, consumers nd the society that are discussed below.

-Benefits to Organizations:

- Electronic commerce expands the marketplace to national and international markets. With a minimal capital outlay, a company can easily and quickly locate more customers, the best suppliers, and the most suitable business partners worldwide.
- Electronic commerce decreases the cost of creating, processing, distributing, storing, and retrieving paper-based information.
- Ability for creating highly specialized businesses.
- Electronic commerce allows reduced inventories and overhead by facilitating "pull"-type supply chain management. In pull-type system the process starts from customer orders and uses just-in-time manufacturing.
- Electronic commerce reduces the time between the outlay of capital and the receipt of products and services.
- Electronic commerce initiates business processes reengineering projects. By changing processes, productivity of salespeople, knowledge workers, and administrators can increase by 100 percent or more.
- Electronic commerce lowers telecommunication cost- the Internet is much cheaper than VANs.

2-Benefits to Consumers:

- Electronic commerce enables customers to shop or do other transactions 24 hours a day, all year round, from almost any location.
- Electronic commerce provides customers with more choices; they can select from many vendors and from more products.
- Electronic commerce frequently provides customers with less expensive products and services by allowing them to shop in many places and conduct quick comparisons.
- In some cases, especially with digitized products, EC allows quick delivery.
- Customers can receive relevant and detailed information in seconds, rather than days or weeks.
- Electronic commerce makes it possible to participate in virtual auctions.
- Electronic commerce allows customers to interact with other customers in electronic communities and exchange ideas as well as compare experiences.
- Electronic commerce facilitates competition, which results in substantial discounts.

3- Benefits to Society:

- Electronic commerce enables more individuals to work at home and to do less traveling for shopping, resulting in less traffic on the roads and lower air pollution.

- Electronic commerce allows some merchandise to be sold at lower prices, so less affluent people can buy more and increase their standard of living.
- Electronic commerce enables people in the Third World countries and rural areas to enjoy products and services that are otherwise not available to them.
- Electronic commerce facilitates delivery of public services, such as health care, education, and distribution of government social services at a reduced cost and/or improved quality.

1.3 The Limitations of Electronic Commerce

Limitations of Electronic Commerce are as follows:

1. Technical Limitations of EC:

- There is a lack of system security, reliability, standards, and some communication protocols.
- There is insufficient telecommunication bandwidth.
- The software development tools are still evolving and changing rapidly.
- It is difficult to integrate the Internet and EC software with some existing applications and databases.
- Vendors may need special Web servers and other infrastructures, in addition to the network servers.
- Some EC software might not fit with some hardware, or may be incompatible with some operating systems or other components.

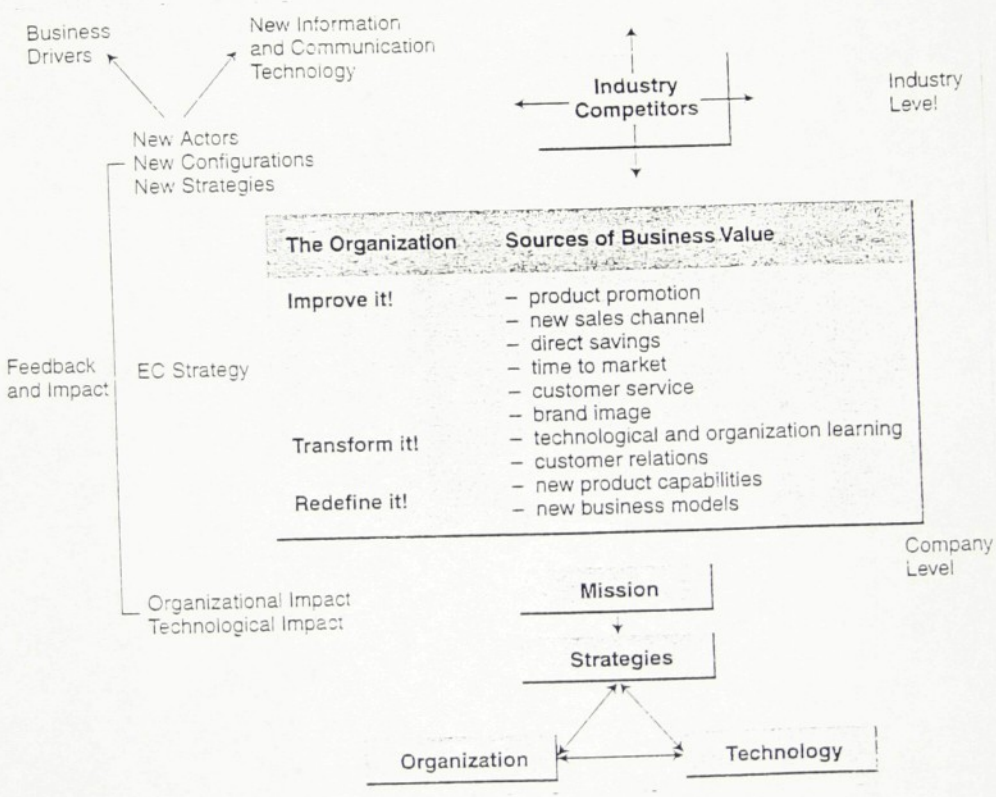
1. Nontechnical Limitations of EC:

- Cost and justification.
- Security and privacy.
- Lack of trust and user resistance.
- Many legal issues are yet unresolved, and government regulations and standards are not refined enough for many circumstances.
- There are not enough support services.
- In most applications there are not yet enough sellers and buyers for profitable EC operations.
- Electronic commerce could result in a breakdown of human relationships.
- Accessibility to the Internet is still expensive and /or inconvenient for many potential customers.

.4 Impact of EC: Everything Will Be Changed

'he field of EC is relatively new; as such, little statistical data or empirical research is vailable. Therefore, the discussion in this section is based primarily on experts' opinions, ogic, and some actual data. The discussion here is also based in part on the work of Bloch nd Segov (1998), who approached the impact of EC from a value-added point of view. Their nodel divides the impact of EC into three major categories: EC improves direct marketing, C transforms organizations, and EC redefines organizations.

'igure 5: The Analysis Framework.



mproving Direct Marketing:

'raditional direct marketing is done by mail order (catalogs) and telephone (telemarketing). In 998, $ 75 billion in sales were estimated in the United States. In 1998, direct marketing via omputers reached about $ 2 billion in the United States.

- Product promotion.
- New sale channels.
- Direct savings: the cost of delivering information to customers over the Internet results in substantial savings to senders. Major savings are also realized in delivering digitized products versus physical delivery.
- Reduced cycle time.
- Customer service.
- Brand or corporate image.

Transforming Organizations:

The EC can transform organizations at the following two levels:

- Technology and Organizational Learning: Rapid progress in EC will force companies to adapt quickly to the new technology and offer them an opportunity to experiment with new products, services, and processes.
- Changing Nature of Work: The nature of work and employment will be transformed in the digital age, which is already happening. Driven by increased competition in the global marketplace, firms are reducing the number of employees down to a core of essential staff and outsourcing whatever work they can to countries where wages are significantly less expensive. The upheaval brought on by changes is creating new opportunities and new risks and forcing us into new ways of thinking about jobs, careers, and salaries.

Redefining Organizations:

As a result of a spread of EC, organizations will redefine by the following categories:

- New Product Capabilities: Electronic commerce allows for new products to be created and/or for existing products to be customized in innovative ways.
- New Business Models: These changes affect not only individual companies and their products but, entire industries. This will lead to the use of new business models, based on the wide availability of information and its direct distribution to consumers.

Impacts on Manufacturing:

Electronic commerce is changing manufacturing systems from mass production to a demand-driven and possibly customized, just-in-time manufacturing.

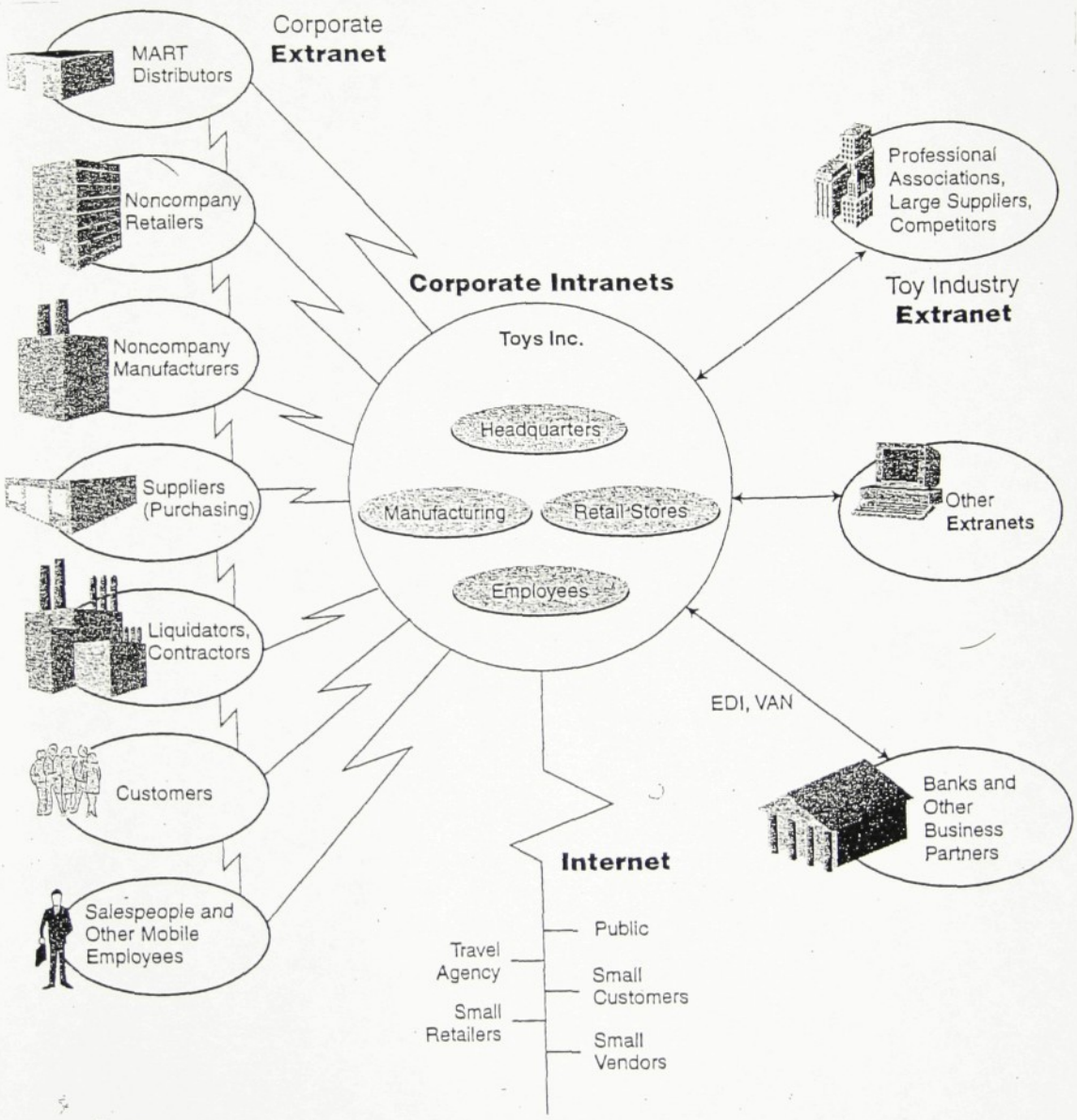
Impact on Finance and Accounting:

Electronic commerce requires special finance and accounting systems. Most notables are the payment systems. Traditional payment systems are ineffective or inefficient for electronic trade.

.5 Putting It All Together

'ompanies today are using the Internet, Intranet, and Extranets in an integrated manner to onduct various EC activities, which is schematically depicted in Figure 6 below.

igure 6: The Network Organization: How a Company Uses the Internet, Intranet, Extranet.

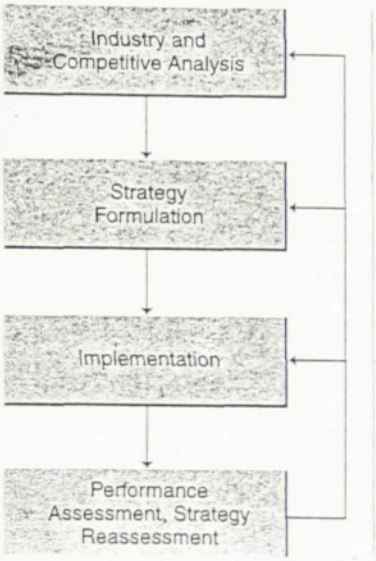


1.6 Electronic Commerce Strategy and Implementation:

The process of EC strategy and implementation can be divided into the following steps:

1. **Importance of strategic planning for EC**. Strategic planning clarifies what an EC project should do or focus on, with respect to the company's mission and the given business environment. Because of the comprehensiveness of EC, conducting formal strategic planning is a must.

Figure 7: The Strategic Planning Cycle.



2. **EC strategy formulation.** The strategy formulation process involves understanding the industry and competition as well as analyzing cost-benefit and return on investment. It further gives guidance on whether to compete against others or to cooperate, such as forming an alliance in the market.

3. **Critical Success Factors (CSF) and EC justification.** Identifying the CSFs such as the indispensable business, technology, and human factors that help to achieve the desired level of organizational goal, and relating them to the EC project is a critical step in strategic planning. Without such factors, an EC project is likely to fail.

4. **Competitive intelligence on the Internet**. Intelligent agents can help execute business intelligence in the market more efficiently. Intelligence on the web can be done in many ways, such as environmental scanning, analyzing message of news groups, carefully reviewing competitors' web pages and analyzing publicly available online documents.

Implementation steps and plans. Creating a web team representing various functional areas and planning for detailed technology tasks including web hosting, security and control are important parts of an implementation plan. Other implementation issues are whether or mot to outsource.

Web assessment. Feedback and corrective actions (if needed) for EC strategies are critical before launching a large project or expanding a pilot one.

CHAPTER 2

Business to Consume

.1 Business-to-Consumer Electronic Markets:

.ccording to the Organization for Economic Co-operation and Development (OECD) report, ıany research institutions have attempted to forecast the B2C electronic market size as ıown in Table 2.1 (OECD 1997) that notice a large variance in the forecasts with a mean alue of $134,906 million. That can not explain the high variation in forecasts due to lack of istorical data. But evens past data (1997) are reported differently. One explanation is the xistence of different definitions of what EC is, depending upon the purpose of the study. ,arge figures may include the investment cost in the Internet infrastructure, whereas small ıgures include merely the pure transactions conducted via the Internet.

'ABLE 2.1 Forecast of B2C Electronic Market Size:

'orecasting Institutions	*1997*	*2000*
)C	1000	117000
/SA Comm	48	3500
/eriFone	350	65000
\ctif Media	436	46000
(illen & Assoc.		775000
'ankee	850	144000
lupiter	45	580
E-land	450	10000
EU		228000
JSA	200	
EITO	363	200000
AEA/AU	200	45000
Hambercht &Quest	1170	23200
Forrester	518	6579
mean value	469	134906
median value	399	46000

Source: Compiled from OECD (1997 Unit: Millions of U.S. Dollars)

Another issue is the kinds of items sold on the Internet. According to the report in The Wall Street Journal (Anders 1998), the expected order of sales volume in 2002 is: travel, PC hardware, books, grocery, apparel and accessories, software, ticketing, music, and speciality gifts, as listed in Table 2.2.

TABLE 2.2 Online Sales by Category (In Millions of U.S. Dollars):

	1997	2002
Travel	911	11699
PC hardware	986	6434
Grocery	63	3529
Software	85	2379
Books	152	3661
Apparel and accessories	103	2844
Ticketing	52	1810
Specialty gifts	100	1357
Music	37	1591

ideos	15	575
oyes	2	555
onsumer electronics	15	792
ealth and beauty	2	1183
ther	485	2689

ource: Compiled from Anders (1998)

nother useful source of electronic market surveys is the Graphics, Visualization, & Usability GVU) Center at Georgia Institute of Technology. A summary of the tenth survey conducted 1 October 1998 by market segments and by the size of amount purchased is found in Table .3, the order of items purchased online are software, books, hardware, music, travel, video, nd so forth.

ABLE 2.3 Items Purchased Online (number of respondents:645):

Order	Items	Percentage of Responses	Count of Responses
	Software	58	374
2	Books	52,6	339
3	Hardware	48,5	313
4	Music	41,4	267
5	Travel	30,2	195
6	Video	15,6	102
7	Magazines	14,9	96
8	Electronics	14	90
9	Apparel	13,6	88
10	Flowers	13,3	86
11	Banking	12,1	78
12	Investments	11,8	76
13	Concerts	9,9	64
14	Quotes	9,1	59
15	Recreation	5,3	34
16	Autos	4,3	28
17	Generic	2,5	16
18	Insurance	2,5	16
19	Wine	2,3	15
20	Real Estate	2	13
21	Jewelry	1,6	10
22	Brand	1,2	8
23	Legal	1,1	7
24	Metals	0,8	5
	Others	2,2	79

Source: Compiled from GVU center's 10th WWW User Survey 1998.

Within the same product category, the items that meet the following characteristics are expected to sell more:

- Items with high brand recognition.
- Hard goods that can be transformed to digitized goods, like books, music, and videos.
- Items with a security guarantee given by highly reliable or known vendors.

- Relatively cheap items.
- Repetitively purchasing items such as groceries.
- Packaged items that are well known to customers and that cannot be opened even in a traditional store.

Retailers have to offer satisfactory merchandise, service, promotion, and convenience.

2.2 Types of Business-to-Consumer Electronic Commerce:

2.2.1 Direct Marketing:

One business models of Electronic Marketing is Direct Marketing that manufacturers advertise and distribute their own products to customers via the Internet-based electronic store without intervention of any intermediaries. As an example of a proactive and full direct marketing model, let us see the case of Dell Computer Corporation described below will be used as an example:

1. **Founding spirit of Dell: Telemarketing**

   Headquartered in Round Rock, Texas, Dell Computer Corporation was founded in 1984 when Michael Dell pioneered the idea of selling custom-built computers through the mail directly to customers. Telemarketing has been the major business strategy since the birth of the company. Therefore, with the emergence of the Internet, it was natural to consider using it as direct marketing channel.

2. **Astonishingly High Growth and Return**

   Net revenue of Dell for fiscal year 1998 had increased to $18.2 billion, a 48 percent rise from 1997 and four times the industry rate. Net income had risen 82 percent, and the return on invested capital was 186 percent for the year. The stock price had risen more than 1,000 percent during the past two and a half years and recorded the largest share-price gain in the industry.

1. **Revenue via the Internet**

   In July 1996, Dell launched Internet-based online sales and services at www.dell.com. In Fall 1999, Ell sold $15 million per day through the Internet, and Internet sales have reached about 27 percent of total revenue.

2. **Dell's Products on the Internet**

   Dell sales all the items it produces on the Internet: desktops, workstations, notebooks, network servers and storage device, software, and add-ons. Service, support, and introduction to the company are also prepared on the home page.

3. **Dell's Critical Success Factors**

   Dell's success story is very impressive, so competitors must have a desire to imitate Dell's strategy. But why is it so hard to copy? We can observe six reasons:

   - Advanced Web applications.
   - Price competitiveness owing to mass customization.
   - Database marketing and customer intimacy.
   - Global reach and value-added services at a single contact point.

- High reliability and reputation.
- Delivery support.

We have seen how Dell becomes successful, and why it is not easy for other manufacturers to duplicate the success. Nevertheless, no major manufacturers can neglect the opportunity of direct marketing. Managerial concern is the degree of strategic change. In this process, the ultimate measure will be the economics of EC.

2.2.2 Electronic Intermediaries:

The retailers can be classified as pure and partial electronic intermediaries depending upon the level of commitment to the electronic retailing business.
Pure e-mall implies that the company's retailing business exists only on the Internet, so the company has full commitment to electronic retailing. In contrast, a company with a partial e-mall strategy regards the e-mall as one of the distribution business. The pure e-mall can be classified into two categories: electronic distributors or electronic brokers (e-brokers). An electronic distributor takes full responsibility for fulfilling orders and collecting payment, in contrast, an electronic broker just assists the search for the appropriate product and its vendors. So a broker does not need to execute the order fulfilment, guarantee, and payment collection. Brokers may receive commissions from vendors to whom the orders are channelled. The expertise that e-brokers need involves computer and network technology, security, and search capability.

GENERALIZED E-BROKERS

Open Market (www.openmarket.com) Internet Mall (www.internet–mall.com), and imall (www.imall.com) are typical examples of e-brokers. In November 1996, more than 47.000 electronic shops world-wide registered with Open Market, hoping to generate orders through Open Market's directory service. Electronic brokers must provide a directory, keyword search engine, message encryption, optional Web site hosting service and a common platform of electronic payments in order to attract electronic shops. Many technology-driven companies jumped into this kind of business in the early stage of EC.

- **Screening for Assurance**

Obviously the most critical success factor of Business-to-Consumer Electronic Commerce is consumer behaviour in cyberspace. Will consumers order unknown brands? Will they even explore the site of an unknown company? It seems that without advanced knowledge and assurance, few customers are willing to seek the unfamiliar brand of an unfamiliar company, especially in a foreign country. In this sense, providing a wide range of options by itself is not sufficient. Customers need a way to assess the quality and reliability of brands and companies, as the established department stores do. But this was not the expertise of technology-intensive brokering companies.

- **Competing Electronic Channels**

Another point is that e-brokers are not the only electronic channel of finding items in need. For instance, to buy a book, will customers visit Amazon, Barnes & Noble, or Shopnow? To buy a Dell computer, will customers visit Dell's site or the Choice Mall or JCPenney Online? If the URLs of the sites that deal with personal computers are not known, will customers

consult Yahoo, Alta Vista, or the Shopnow? If the Shopnow is not the choice in the answer to these questions-which seems the case at the moment e-brokers like the Shopnow should provide some differentiated attraction. Otherwise, the role of e-broker may diminish further. Nevertheless, the directory capability of generalized malls is useful for customers in searching for new suppliers and retailers. Typical sites for this purpose include www.aol.com, www.shopper.com, www.virtualemporium.com. and www.yahoo.com.

SPECIALIZED ELECTRONIC DISTRIBUTORS

Some specialized electronic distributors that sell one or a few groups of products are very successful. Typically, successful speciality stores sell books, CDs, flowers, consumer electronic products, computer hardware and software, automobiles, and clothing. In addition, there are successful online services such as online stock trade brokers, travel agents, and online banks.

Cyber Bookstores

As described in the opening case, Amazon competes with Barnes & Noble, which has an advertisement linkage on the search engine site Lycos Inc. although there are more competitors in the book market. Recall the following factors that will determine long-term competitiveness in cyber-book-store: scope of titles, price competitiveness, provision of not only book sales but also information about books, relationship marketing support with the registered customer community, a reliable recommendation center, many categories of books, and so forth. Another challenge comes for a software agent for seeking the lowest price, as in BestBookBuys.com and Buy.com do. We also need to consider the impact of electronic publishing on the cyber book retailing business with a long-term perspective. Other factors that we should not neglect are language and cultural barriers. For example, neither Amazon nor Barnes & Noble carry Korean books, so the popular bookstores in Korea can go online without any competition from these English sites.

Cyber CD Stores

Columbia House (www.columbia.house), Music Boulevard (www.n2k.com), CD Universe (www.cduniverse.com), and CDNow (www.cdnow.com) are the most successful (in 1999) CD dealer in cyberspace. CDNow earned a$6 million profit in 1996. Columbia House and Music Boulevard had 3.1 million and 2.3 million visits respectively during October 1998. These sites usually provide online sample music service.

Digitized Products and Services Stores

Software, games, CDs, and videos are usually sold in the same sites, but www.intraware.com, www.egghead.com (up to 1999), and www.softwarebuyline.com are dedicated mainly to software sales. Even though they sell most software via diskettes at the moment, they will mainly be distributing through the Internet in the future. The sites www.hotwired.com and www.real.com are examples of real audio-augmented sites. With the advent of MP3 technology, quality music can be directly delivered over the Internet, so CDs may no longer have a monopoly on storing and distributing music.

Cyber Flower Shops

As a case of a specialized electronic store, let us review 1-800-Flowers. The company is the world's largest florist with sales of $300 million in 1997 and an average 40 percent compound

growth rate during 1995-1997. The company handled 9 million orders per year through 1-800-Flowers stores, a toll-free telephone number, and their interactive Internet service. To meet the demand, 150 shops are company owned or franchised, and 2.500 shops are in business partnership. Internet-based sales through www.1800flowers.com contributed approximately 13 percent of overall sales in 1999. In this case, the traditional toll-free order-receiving model is well aligned with the business model of the e-store.

2.2.3 Procedure for Internet Shopping: The Consumer's Perspective

To understand the procedure of electronic shopping, let us examine the purchasing steps with illustrative cases. One factor that we must pay attention to be that the number of storefronts on the Internet is several millions. How can customers find what they need? To answer this question, it is first necessary to examine the purchasing procedure on the Internet from the consumer's point of view. Consumer's mercantile activities can be classified into seven steps, and let us illustrate each step with examples of Tom's purchasing a personal computer and Judy's purchasing a book:

- **PRELIMINARY REQUIREMENT DETERMINATION**

Suppose Tom wants to buy a personal computer with which to access the Internet, but he also needs a word processor and spreadsheet software. If the price is reasonable, he may buy a notebook computer with the options of high-quality multimedia and wireless connectability. He also needs a color printer. Next, suppose Judy wants to give the book Monica's Story by Andrew Morton to her friend. In this case, Judy's requirement is clearly known and fixed. This means Tom needs more comparison between functionality and price than Judy does.

- **SEARCH FOR AVAILABLE ITEMS**

Tom may want to visit several online department stores, discount stores, auction sites, and factory outlets, Judy may access either Amazon or Barnes & Noble. Suppose Tom already knows that online JCPenney, Wal-Mart, and Dell Computer sell personal computers, and he also wants to survey stores that are not known to him yet. In addition, Tom has to compare the alternatives, considering functions and price. On the other hand, all that Judy seeks is the bookstore that sells the book at the lowest price because the book is the same no matter where one buys it.

- **COMPARE THE CANDIDATE ITEMS WITH MULTIPE PERSPECTIVES**

Tom noticed that many e-malls tried to keep him as an eternal customer, asking him to register and provide personal data. This bothers him very much. To help Tom, the e-broker compare.net searches for the products that meet the requirements and display the comparing table in terms of specification and price. Upon selection after this comparison process, Compare.net links you to the e-store, which actually takes the order. In contrast, Judy does not hesitate to put the book in to the shopping bag because she does not need to compare functionalities, and she selected the lowest price.

- **PLACE AN ORDER**

Suppose Tom has selected a PC from JCPenney. Tom can then place the items in the shopping cart and click the checkout button to order. Judy can of course order her book in a similar way at a cyber-bookstore like Amazon.

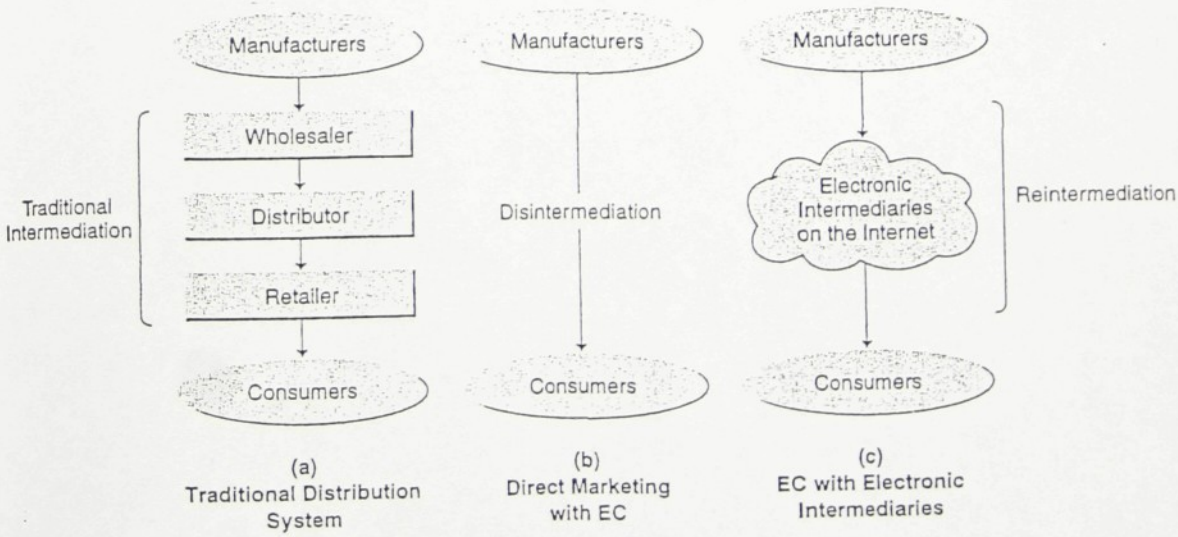
- **PAY FOR THE GOODS**
  Now both Tom and Judy have to pay for the merchandise they purchased. To pay with a credit card, buyers select a card type and key-in the name of the card, card number, and expiration date, much as when shopping over the phone.

- **RECEIVE THE DELIVERED ITEMS AND INSPECT THEIR QUALITY**
  As the selected items are ordered and paid for, the vendor will arrange the delivery. In this example, JCPenney may use its own truck, whereas Amazon will ask FedEx to deliver. Suppose Judy wants to read only several chapters from the book, so she decides to order an electronic version from the publisher. Then, the digitized book will be delivered over the Internet. This electronic delivery of digitized goods can really automate the entire process of EC-order, payment, and delivery without any intervention of human agents.

- **CONTACT THE VENDOR TO GET AFTER-SERVICE AND SUPPORT, OR RETURN THE GOODS IF DISAPPOINTED**
  If Tom needs support in installing the system, the JCPenney service department may provide it. In contrast, his neighbour, who bought a computer from Dell, consulted Dell's service corner on Dell's home page and found there may be no need for a physical visit. This procedure illustrates how to purchase on the Internet from the customer's point of view. This procedure also illustrates how storefronts and e-malls should be designed so that they can optimally meet the customer's needs.

2.2.4 The Impact of EC on Traditional Retailing Systems

- **DISINTERMEDIATION AND REINTERMEDIATION**
  By using the Internet, manufacturers can sell directly to customers and provide customer support online. In this sense, the traditional intermediaries are eliminated. Let us call this phenomenon disintermediation. However, new electronic intermediaries e-mall and product selection agents are emerging instead. Occurrence of a new breed of electronic intermediaries is called reintermediation.
  Figure 8: Disintermediation and Reintermediation by EC.



Disintermediation is a new term that refers to the removal of organizations or business process layers responsible for certain intermediary steps in a given value chain. In the traditional distribution channel, there are intermediating layers, such as wholesaler, distributor, and retailer, between the manufacturer and consumer. Owing to the presence of the Internet as a marketing and product selection vehicle, customers are beginning to question the value offered by the distribution channels, when they can theoretically obtain the same products directly from the manufacturer. If manufacturers are able to connect directly with consumers and shorten the traditional distribution chain they used to depend on, it is theoretically possible to get rid of the inefficiencies of the current structure.

IMPACT ON MANUFACTURER'S DISTRIBUTION STRATEGY

In addition to disintermediation and reintermediation, the following interesting manufacturer's distribution strategy ware emerged:

- **Manufacturer's monopolistic Internet-based distribution.** Levi's does not allow anyone else to sell the Levi's product on the Internet. This is possible because Levi's has such a name value, and customers like to have a single contact point in cyberspace. (In late 1999, Levi's changed its policy).
- **Coexistence with the dealer.** This is the case in car distribution. Automakers need to keep the traditional dealers as test-drive servers even though they sell on the Internet.
- **Regionally mixed strategy.** In a certain region a particular company may sell on the Internet, while in another region it sells through the traditional retailer. For instance, Nike sells on the Internet but only in the United State. Nike provides physical retailing stores abroad. The policy depends upon the maturity of Internet-based customer groups.
- **Mass customization for make to order.** Manufacturers have to be adaptive to the cutomized orders of ultimate consumers. This means that manufacturer should be ready for mass customization.
- **Powerful suppliers.** According to Fortune, Aug. 16/1999, Home Depot sent a letter to its major suppliers (e.g. www.whirlpool.com), reminding them that Home Depot has the right not to carry their products if they will sell online, directly to customers.

2.3 Business-to- Consumer Market and Market Research

- **Essentials of consumer behaviour:** Consumer behaviour in EC is similar to that of any consumer behaviour. It describes a stimuli-decision process-purchasing decision model. However, it also includes a significant vendor-controlled component that deals with logistics, technology, and customer service.

- **Characteristics of customers:** Customers are the most critical factor for the success of business to consumer EC. Knowing what they are, what they need, and how to address those needs is important. Although most of the available data relates to Internet surfing in general rather than to EC in particular, we can make inferences from general Internet usage.
- **Consumer decision-making process:** Understanding the process of consumer decision making and formulating an appropriate strategy to influence their behavior is the essence of marketing effort. For each step in the process, sellers can develop appropriate

strategies. Also, it is possible to use intelligent agents to automate some activities in three steps. Various models are available to describe or explain this process.

- **Building one to one relationships with customers:** In EC there is an opportunity to build one to one relationships that do not exist in other marketing systems. Of special interest are the approaches to boost loyalty and increase trust. Product customization, personalized service, and getting the customer involved are all practical in cyberspace.

- **Implementing customer service:** Retailing customers by satisfying their needs and even creating new needs is the core of customer service. Customer service on the Web is provided by e-mail, in the corporate Web site, in customized Web pages, in integrated call centers, and by intelligent agents. Online customer service is media rich, effective, and less expensive than the services offered offline.

- **EC market research:** Understanding market segmentation and grouping consumers into different categories is a necessity of effective EC market research. Several methods of Internet market research are available. They provide for fast, economical, and accurate research due to large sample involved. The two major approaches for data collection are to get information voluntarily or to use cookies to track customers movements on the Internet. Finally, Internet-based market research has several limitations, such as data accuracy.

- **Intelligent agents:** Gathering and interpreting data about consumer purchasing behavior can be done with software agents. Intelligent agents can also generate automatic e-mail replays, analysis customer movement on the Internet, and support customer service and market research. Advanced agents can even learn about customer behavior and needs.

- **Organizational buyer behavior:** Organizational buyers must cosider organizational factors in their purchasing decisions. For large-ticket items the decision may be made by a group. Also, interpersonal variables, such as authority and status, affect the decision.

CHAPTER 3

Business to Business Electronic Commerce

3.1Characteristics of B2B EC

Business-to-business electronic commerce implies that both the sellers and buyers are business corporations, while *business-to-consumer electronic commerce* implies that the buyers are individual consumers. Business-to-business EC is expected to grow to $1330.9 billion by 2003 and continue to be the major share of the EC market (Freeman 1998, Retter and Calyniuk 1998). The percentage of Internet – based B2B EC compared to total B2B commerce will expand from 2% in 1997 to 2.1% in 2000 and 9.4 % in 2003. Computing electronics, utilities, shipping and warehousing, motor vehicles, petrochemicals, paper and office products, food, and agriculture are the leading items in B2B EC.

Business – to – business EC covers a broad spectrum of applications that enable an enterprise or business to form electronic relationships with their distributors, resellers, suppliers, and other partners. As Handfield and Nichols (1999) suggest, B2B applications will offer enterprises access to the following sorts of information:

- ***Product*** – specifications, prices, sales history
- ***Customer*** – sales history and forecasts
- ***Supplier*** – product line and lead times, sales terms and conditions
-
- ***Product process*** – capacities, commitments, product plans
- ***Transportation*** – carriers, lead times, costs
- ***Inventory*** – inventory levels, carrying costs, locations
- ***Supply chain alliance*** – key contacts, partner's roles and responsibilities, schedules
- ***Competitor*** – benchmarking, competitive product offerings, market share
- ***Sales and marketing*** – point of sale (POS), promotions
- ***Supply chain process and performance*** – process descriptions, performance measures, quality, delivery time, customer satisfaction

By using B2B EC, business can reengineer their supply chain and partnership.

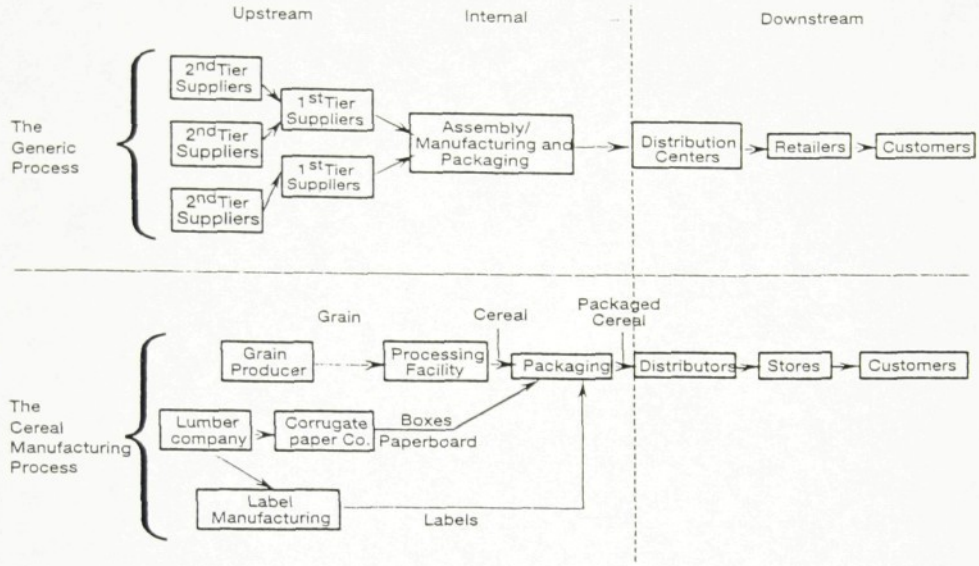
3.1.1 Supply Chain

Even though there are many B2B applications, the relationships between businesses can be best understood in the supply chain context. Consider something as mundane as the manufacture and distribution of cereal. The process actually consists of a number of interrelated processes and roles: all the way from the acquisition of grain from farmers (or some other grain suppliers), to the processing of the grain into cereal, the packaging of the cereal into boxes, the transportation of the packaged cereal to distributors and grocers, and eventually the purchase by end customers.

Taken together these processes and roles are called a *supply chain*. The supply chain encompasses all the activities associated with the flow and transformation of goods from the raw material stage all the way to the end user. The supply chain can be broken into three parts: *upstream activities* involving material and service inputs from suppliers, *internal activities* involving the manufacturing and packaging of goods, and *downstream activities* involving the distribution and sale of products to distributors and customers. In the 1990's business managers have come to recognize that management and control of the upstream and downstream activities which involve relationships with partners who are technically outside the enterprise – are as important as the internal activities involved in the actual production of products.

Historically, many of the processes in the supply chain, especially the upstream and downstream activities, have been managed with paper transactions (e.g. purchase requisitions and orders, invoices, and so forth). This is where B2B EC applications come into play. They can serve as supply chain enablers that can offer a distinct competitive advantage.

Figure 9: Supply Chain of Cereal.



3.1.2 Entities of Business-to-Business Electronic Commerce.

The internet can provide the most economical B2B EC platform for linking companies without additional network implementation. This chapter will describe the various applications and architectures of B2B EC on the Internet. Since **supply chain management** encompasses "the coordination of order generation, order taking and order fulfillment/distribution of products, services or information" (Kalakota and Whinston 1997), the involved companies can be studied both from the customers' and from the purchasers' point of view. Thus, B2B EC can contribute to lower purchase costs, reduced inventory, enhanced efficiency of logistics, as well as to increased sales and lowered sales and marketing costs.

The key entities in B2B EC and their concerns as follows:

- Selling company – with marketing management perspective
- Buying company – with procurement management perspective
- Electronic intermediary – a third – party intermediating service provider (the scope of service may be extended to include the order fulfillment)
- Deliverer – who should fulfill the JIT delivery
- Network platform – such as the Internet, intranet, and extranet

- Protocols and communication – such as EDI and comparison shopping, possibly using software agents
- Back-end information system – possibly implemented using the intranet and Enterprise Resource Planning (ERP) systems

The content of these entities will be covered one by one in the following sections of this chapter. Now the relationship between B2B EC and the following perspectives: electronic marketing, procurement management, electronic intermediary, JIT delivery, EDI, Intranet, Extranet, integration with back – end information systems, and online services to business will be discussed.

- Electronic Marketing

The B2B EC platform can be used to sell the company's products and services to business customers on the Internet. This business model can be named supplier – oriented marketing (or seller oriented marketing) because the customers visit the Web site that the supplier has prepared. The concept of this model is described in the Cisco case later in this chapter. From the supplier's point of view, a Web site equipped with an electronic catalog is basically the same as that for B2B EC. The only differences are that:

(a) The customers are companies to whom the integration of order information with the procurement management system is crucial.
(b) Each corporate buyer may have its own catalog and price schedule.
(c) The corporate buyer behavior differs from that of an individual one. In these cases the customers can be both individual consumers and business owing to the nature of the items sold. However, certain groups of items, such as industrial equipment, are purchased only by businesses. Network router is an example, because it is used only in business.

- Procurement Management

From the purchasing company's point of view, B2B EC is a medium of facilitating **procurement management** such as reduced purchase price and reduced cycle time. To implement B2B EC from the procurement management's point of view, the buyer – oriented marketplace (customer – oriented marketplace) can be used in this model – where the buyers announce the RFQs to potential suppliers for competitive purchasing. The concept of this model is described in a case study with GE Trade Process Network later in this chapter. To the suppliers, participating to the customer – oriented marketplace and winning the bid is the major concern.

- Electronic Intermediaries

The electronic intermediaries can also be referenced for B2B EC, replacing the consumers with business customers. Both individual consumers and businesses purchase a group of items such as books, stationery, and personal computers. In this case, consumers and business buyers can share the intermediary. However, certain item, such us industrial equipment and parts, are purchased only by businesses. For instance, the parts for jumbo jets are purchased only by businesses. An example in which Boeing plays the role of intermediary between airline customers and 300 part suppliers is described later in this chapter. This business model is an example of an intermediary – oriented marketplace. Since the purchasing party is a business who has to deal with many suppliers and intermediaries, an integrated and tailored buyer's directory linked with relevant suppliers and intermediaries is needed.

- Just – in – Time Delivery

The **just – in – time (JIT) delivery** of parts to manufacturing buyers is crucial to realize JIT manufacturing. Since online direct marketing requires an internal JIT manufacturing system, the JIT delivery and advanced confirmation of suppliers' inventory are essential elements for B2B EC. JIT delivery was not a critical issue in B2B EC, so it was not handled as a central theme of EC yet. However, as the importance of B2B grows, The study on JIT delivery should be emphasized. This issues is covered later in this chapter with discussion of a FedEx case.

- Electronic Data Interchange

Electronic data interchange (EDI) is the electronic exchange of specially formatted standard business documents such as order, bills, approval of credit, shipping notices, and confirmation sent between business partners. EDI is used primarily to transfer electronically repetitive business transactions. The EDI translator is necessary to convert the proprietary data into standard format. In the past, EDI ran on expensing **value added networks (VANs)**. The VAN is, however, confined to large trading partners. As a result, large companies doing business with thousands of small companies were unable to use EDI. However, the situation is changing rapidly with the emergence of Internet – based EDI as we describe later in this chapter. So Internet – based EDI is an important part for B2B EC.

- Intranet

The intranet is a dedicated Internet to a company whose access is protected by a server called a *firewall*. Since the intranet is an effective platform of implementing Web – based workflow and groupware, this platform is becoming a standard for the corporate information systems. Therefore, integration of a B2B EC platform with an intranet – based corporate information system is a very important issue.

- Extanet

The B2B EC platform may be either a dedicated network between the associated parties or a public network similar to the Internet. The Internet is the most economical and seamlessly accessible platform for B2B EC. However, a security is a concern. The extranet, which can implement the virtually private network (VPN) technology between involved companies on the Internet, answer the concern.

- Integration with Back – end Information Systems

Back – end information systems may be implemented using intranet – based work flow, database management systems (DBMS), application packages, and ERP. In the supplier oriented marketplace setting, the **integration of EC** with suppliers' **back – end information systems** is relatively easy because the suppliers keep the platform for both EC and their back – end systems in their servers. However, it is not easy for the buyers to trace their transactions that are scattered in various suppliers servers. By the same token, in the customer – oriented marketplace setting, business buyers, but not suppliers, can integrate EC with their back – end information systems easily. In the intermediary – oriented marketplace setting, neither buyers nor sellers can organise their transactions easily. This difficulty is a challenge to the participating buyers and sellers in B2B EC but is a good opportunity for the intermediary.

- Online Services to Business

The online services for travel and tourism, employment placement and job market, real trading, trading stocks, cyberbanking, insurance, and auctions these online services can be used both by consumer and by businesses. In addition there are services that supply B2B, such as matching buyers and sellers.

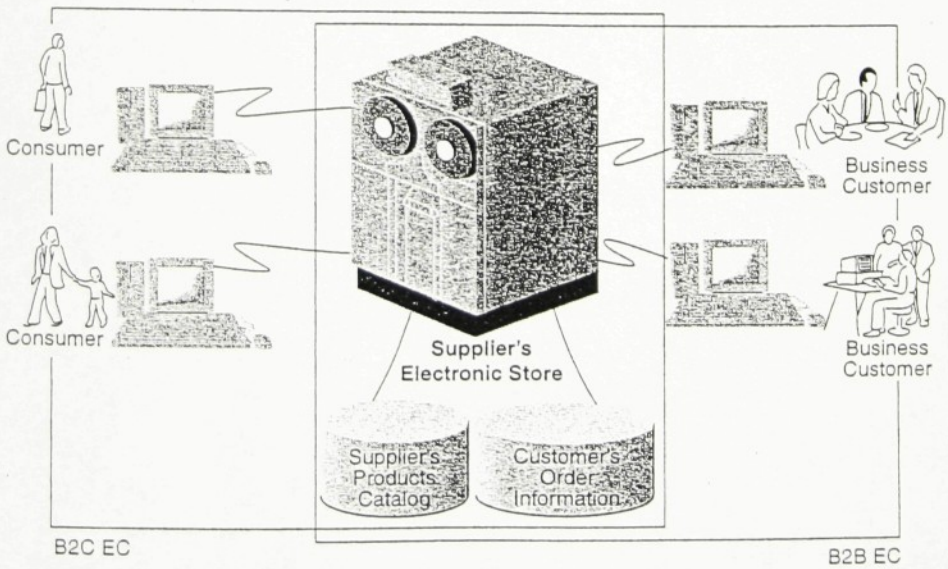
3.2 Models of Business-to-Business Electronic Commerce

In this section, the business models of B2B are described. The first three models are classified depending upon who controls the marketplace: the supplier, customer, or intermediary. Other important business models are virtual corporation, networking between headquarter and subsidiaries, and online services to business.

- Supplier – Oriented Marketplace

The most common B2B model is the **supplier – oriented marketplace**. Most of the manufacturer driven electronic stores belong to this category. In this model, both individual consumers and business buyers use the same supplier provided marketplace. The architecture of this B2B model is basically the same as that for B2B EC, and the purchasing process is similar.

Figure 10: Supplier-Oriented B2B Marketplace Architecture.



- Successful Cases and Challenge

Successful examples of this business model are Dell, Intel, and Cisco and IBM. It is reported that Dell sold 90% of their computers to business buyers, and Cisco sold $1 billion

worth of routers, switches, and other network interconnection devices in 1998 mainly to business customers through Internet. The sites with this model may be sustained as long as the vendor has a superb reputation and in the market and a group of loyal customers. Thousands of other companies are using this model. One of the major issues for smaller companies is how to find buyers. This issue is described in electronic marketing in B2B section.

However, this model may not be convenient to large and repetitive business buyers, because the buyers' order information is stored in the suppliers' servers and is not easily integrated with the buyers corporate information system. So it is necessary to provide a buyer – owned shopping cart, which can store the ordered information and can be integrated with the buyers' information system. This is particularly important, because buyers have to visit several sites for comparison shopping. This characteristic requires that the B2B EC platform will differ from the B2C EC platform.

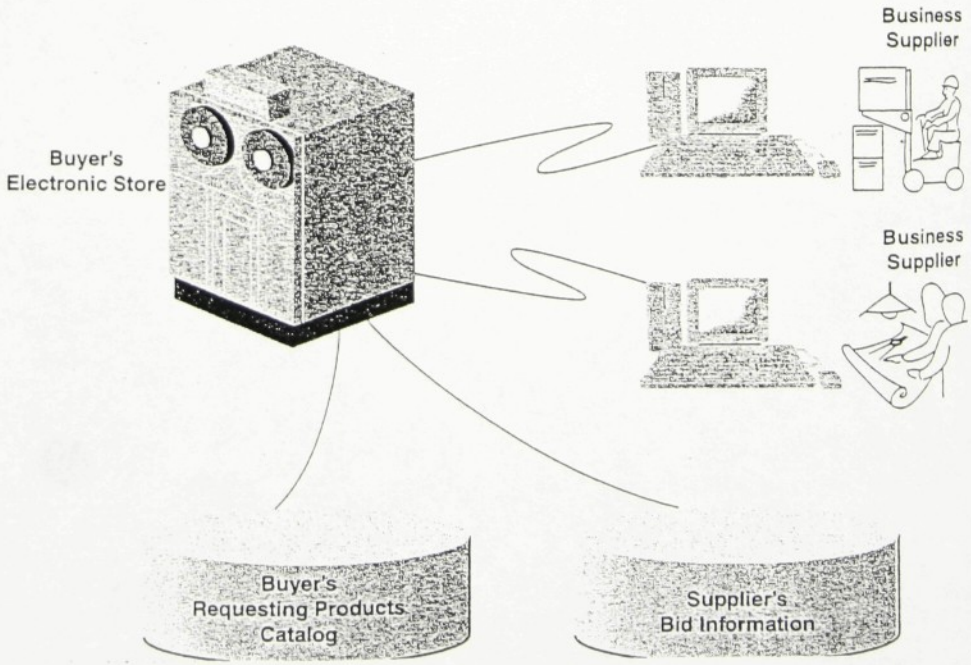
- Electronic Auctions

Another application of the supplier – oriented marketplace is the proprietary auction site like the computer reseller Ingram Micro (www.ingram.com). These sites are open only to approved customers. They are designed to cement relationships between the company and its regular buyers. Sellers can get rid of surplus goods, and business customers can realise deep discounts. Also, liquidators can get 600 % more than if they use offline auctions.

- BUYER - ORIENTED MARKETPLACE

Under the platform of supplier - oriented marketplace, the buyer's acquisition department has to manually enter the order information into its own corporate information system. Searching e- stores and e- mails to find and compare suppliers and products can be very costly to companies like GE, who purchase thousands of items on the Internet. Therefore, such big buyers would prefer to open their own marketplace, which we call the **buyers - oriented marketplace.** Under this model, a buyer opens an electronic market on its own server and invites potential suppliers to bid on the announced RFQs. This model offers a greater opportunity to committed suppliers.

Figure 11: Buyer-Oriented B2B Marketplace Architecture.



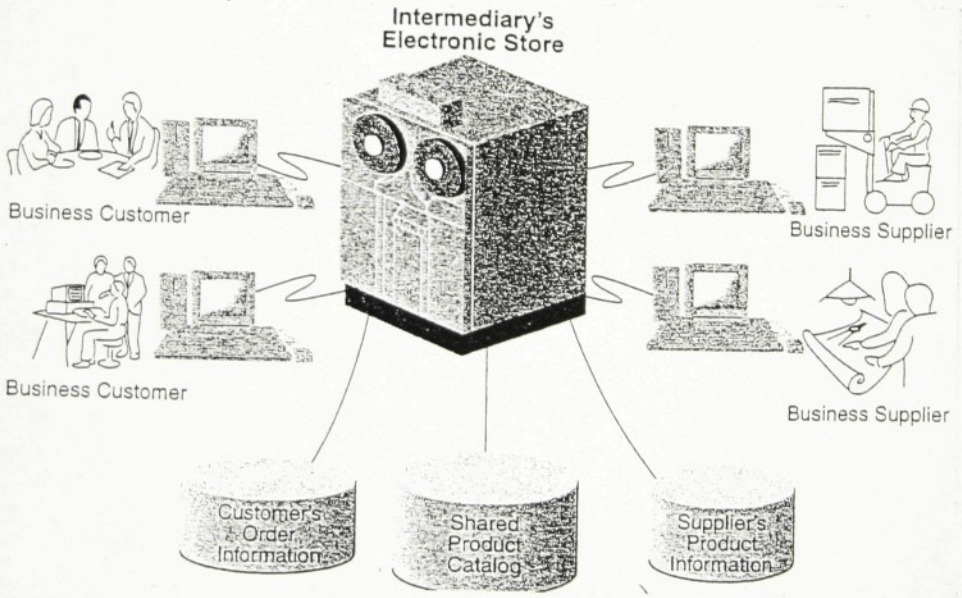
- Successful Case and Challenge

An example of a successful case of this category is GE as illustrated earlier. Boeing Inc. is another example. Finally, www.shoppoint.co.kr invites suppliers to bid on many parts, all over the web. As the number of such sites increases, suppliers will not be able to trace all such tender sites. The situation will be improved with the introduction of online directories that list the open RFQs. Another way how to solve this problem is the use of software agents, which can reduce the human burden in the bidding process.

- Intermediary- Oriented Marketplace

The third business model is establishing an electronic intermediary company, which runs a marketplace where business buyers and sellers can meet. This concept is similar to intermediary - based e-malls or e - stores developed for B2B EC. Let us call these sites the **intermediary - oriented marketplace**.

Figure 12: Intermediary-Oriented B2B Marketplace Model.



- Successful Cases and Challenge

Typical cases of intermediary malls are Boeing's PART, ProcureNet, Manufacturing.net and Industry.net. Boeing's PART links airlines with 300 key suppliers of Boeing maintenance parts.

ProcureNet was launched by Fischer Technology Group in Pittsburgh, a major industrial distributor, and its target MRO (maintenance, repair, and operations) purchases. ProcureNet, which went online in March 1996, has 30 seller sites with 100 000 products listed in electronic catalog. The service gets about 1 million hits a month. ProcureNet does not require registration, however, only buyers whose company information has been validated in advance

can place orders with selling companies. The service also offers contract pricing (Blankenhorn and Strazewski 1997).
Industry.net had about 275 000 members from 36 000 organizations in 1998. The service receives about 10 000 visitors a day directed to 53 seller company sites. Industry.net charges participating sellers from $2,000 to $250,000 for the Web home site searchable online catalogs and ordering links with corporate buyers. Buyers with contractual relationships can place orders using e - mail forms (Blankenhorn 1997b).
When the participating buyers and sellers are businesses, coupling the intermediary oriented B2B EC, platform with their corporate information systems is a must, particularly for large an repetitive buyers and sellers. Most B2B electronic intermediaries are not equipped with this capability yet, but it should be developed in the next generation of B2B EC platform. Intermediary marketplace is frequently delivered on an Extranet.

- Third - Party Electronic Bidding, Auctions and Bartering

The third - party intermediary can run the electronic bidding and auction sites. GE's TPN Post opened its own bidding site to other buyers so that they can post their requests for quotations. The TPN can also, therefore, be regarded as the intermediary - oriented marketplace. Auction sites like A - Z used computers and FairMarket belong to this category.

1. Virtual Corporation: Networking Between Business Partners

One of the most interesting reengineered organization structures is the virtual corporation (VC). A **virtual corporation** is an organization composed of several business partners sharing costs and resources for the purpose of producing a product or service. According to Goldman et al. (1995), permanent virtual corporations are designed to assemble or create productive resources rapidly, frequently, concurrently or to create or assemble a broad range of productive resources. The creation, operation, and management of a VC are heavily dependent on the B2B EC platform.
However, VCs are not necessarily organized along the supply chain. For example, a business partnership may include several parts, each creating a portion of product or service in an area in which they have special advantage, such as expertise or low cost. So the modern VC can be viewed as a network of creative people, resources and ideas connected by online services and/or the Internet.
The major goals that VCs pursue are:

- Excellence: each partner brings in core competence, so an all - star winning team is created
- Utilization: Resources of the business partners are frequently underutilized. A VC can utilize them more profitably.
- Opportunism: A VC can find and meet market opportunity better that an individual companies.

The B2B EC platform, like the Internet and Extranet, makes the VC more successful, because the communication and collaboration among the dispersed business partners are key to making it happen. On this platform, the business partners can use e - mails, desktop video conferencing, knowledge sharing, GroupWare, EDI, and EFT.
For instance, IBM Ambra formed a VC to take advantage of an opportunity to produce and market a PC clone. Each of five business partners played the following roles: engineering design and subsystem development, assembly on a build - to - order basis, telemarketing, order fulfillment and delivery, and field service and customer support. As the B2B EC

platform propagates, more companies will be able to make VC. More examples can be found in Turban et al. (1999).

- Online Services to Business

There are many online services available for businesses, although individual customers can share some of the services. Among the various online services, the ones mostly used by businesses are:

- *Travel and tourism services*: Many large corporations have special discounts arranged with travel agents. To further reduced costs, company's ca makes special arrangements that enable employees to plan and book there own trip online. For instance, Carlson Travel Network of Minneapolis provides an agent less service to corporate clients like GE. The GE employees can fill out the application at their Intranet. The system allows a special rate for booking airline tickets, rental cars and hotels.
- *Real estate*: Since business real estate investment can be very critical, the Web site can not replace the existing agents. Instead, the Web site helps in finding the right agent. However, some auctions on foreclosed real estate sold by the government may be opened online only to businesses. Similarly, used cars are auctioned to dealers only.
- *Electronic payments*: Firm banking on the Internet is an economical way of making business payments. The Electronic Fund Transfer (EFT) using financial Electronic Data Interchange (EDI) on the Internet is the most popular method business uses. The payment transaction cost on the Internet is cheaper than that of any other alternatives.
- *Online stock trading*: Corporations are important stock investors. Since the fees for online trading are very low. (as low as $5.00) and fixed, regardless of the trading amount, the online trading brokerage service is a very attractive option to business investors.
- *Electronic auction to business bidders*: Some electronic auctions are open only to dealers, for instance, used cars and foreclosed real estate sold by the government. The comprehensive list of auction sites is available at www.usaweb.com/auction.html.
- *Online publishing and education*: Online education is not the monopolistic asset of business. However, businesses subscribe to certain professional magazines. The on - demand electronic education program can provide a useful training opportunity for busy employees.
- *Online loan and capital makers*: Business loans can be syndicated online from the lending companies. IntraLink Corp. provides solution for syndicates, and BancAmerica offers IntraLoan's matching service to business loan applicants and potential lending corporations. Moreover, some sites, like www.garage.com, provide information about venture capital.
- *Other online services*: Business is the major user of online consulting, legal advice, health care, delivery requests, electronic stamping, escrowing and so forth.

3.3 Electronic marketing in B2B

In the previous sections various models of B2B business and discussed several issues of B2B marketing, namely, how a company can find customers for its products ware discussed. In fact, companies compete strongly in the B2B market.

3.3.1 Direct Marketing to Reach Functional Buyers

In the typical business organization, buying decisions, especially for products over a few thousand dollars, are made by groups of individuals. As a result, direct markets need to extend the reach of their programs to different functional areas and perhaps even different levels within a functional area.

There are multiple buyers and influencers in any organization who play a role in the buying decision. You may know with reasonable certainty that your primary target is, but secondary targets may be just as important to reach. You may have to reach business buyers and influencers in three basic management areas (functional management, financial management, and general management) and to do it at middle and upper managerial, as well as technical, levels. To do it companies need accurate e - mail lists, which they can develop by viewing companies Web sites and reviewing annual reports and other public documents.

3.3.2 Relationship Marketing

Business buyers are not always ready to buy products or services when you are ready to sell them. Factors you can not control, such as the company's budgeting process, the need for additional approvals, or purchasing procedures, may have a direct impact on plans to purchase. There may be a casual interest in the product but not an immediate need.

The smart B2B direct marketer compensates for this uncertainty by making sure a program for regular, ongoing communications is in front of prospects periodically. This can be done by direct e - mail and by placing the information on the Web site.

3.3.3 Audience Strategy and Mailing Lists

Audience strategy drives the process of evaluating and selecting mailing lists. There are three basic kinds of lists:

- *Your house list:* The house list is typically made up of customer and prospect names collected by a variety of methods: input from the sales force, trade shows, leads from various media and so on.
- *Response list:* These are lists with names of individuals who responded to you by e - mail, filling out Web questionnaires and so forth. Typical response list include subscribers, buyers, and member lists.
- *Compiled list:* These list are compiled from a variety of sources, including telephone directories.

3.3.4 Electronic/Interactive Media

Electronic or interactive media presents the B2B direct marketer with the most exciting creative potential. There are three basic media, each with its own creative considerations: CD - ROMs, e - mails, and the Web. Electronic mail and the Web are Internet - based media. The CD - ROM medium offers opportunities to execute full - fledged multimedia promotions with scripted copy, music and full motion video. From a direct marketing perspective, CD -

ROMs should incorporate plenty of interactivity and, if appropriate, facilitate response. They are also being increasingly used to "connect" to the Internet, for example, an electronic catalog can be housed on a CD and, through a link to a Web address, can be automatically updated. This technique draws a prospect or customer to the marketer's Web site for additional information.

Currently, e - mail is a text - only medium, although graphic e - mail is on the horizon. The Web is the interactive area receiving the most attention from the direct marketers. Creatively, the Web combines the qualities of several direct marketing media with some of its own unique ones. It is similar to direct mail in that it can accommodate integrated copy and graphics. Like broadcast and CD - ROM, the Web also facilitates the use of sound and multimedia, but the web is unique in its construction and its instant interactivity.

3.3.5 How to build your e-mail lists and Marketing Database

Perhaps the area with the most pay back potential is your house list - or what should be your marketing database. The list can be enhanced with marketing intelligence about each of the individuals on it. In building e - mail lists make sure to avoid:

- Entries that have wrong contacts
- Lists that are composed of many different unorganized lists
- A list that is embarrassingly out of date
- A list that can not be segmented
- A list that is not being used often enough

- Internet Marketing Strategy

Several potential marketing strategies can be used in B2B. Silverstein (1999) classifies them into the following five categories:

1. Generating and qualifying leads with the Internet
2. Using Internet events to promote products and services
3. Executing instant fulfillment on the Internet
4. Generating orders through the Internet
5. Enhancing customer relationships with the Internet

3.4 Comparative Analysis of Business-to-Consumer and Business-to-Business Electronic Commerce Platforms

We have seen several business models and architectures useful for B2B EC. Now let us compare the key **required features of B2B EC** to those of B2C EC. Currently, most B2B EC platforms are mainly developed with the idea of supplier - oriented marketplaces, so this platform for B2B EC is not significantly different form the platform of B2C EC (Davis1997). In the future, however, B2B EC needs to be equipped with the following eight features to distinguish it from B2C EC. These eight features also provide a fertile opportunity for B2B EC research (Lee1998). These features are discussed below.

1. *Management of buyer information at buyer sites to integrate with corporate information systems:* The platforms for the supplier oriented marketplace store the customers information in the suppliers' server. Business buyers can not effectively manage the

procurement information at their servers, resulting in poor integration with the buyer's information system. Thus, the B2B EC platform needs to store the buyer's ordered information in the buyer's server.

B2C EC Platform	B2B EC Platform
▪ Buyer's information stored in the Seller's server	Buyer's information needs to be stored in the buyer's server to integrate with the buyer's information system, such as intranet, work flow and ERP
▪ Limited bookkeeping is supported	Complete bookkeeping is supported
▪ Web technology using a thin client is Usually in use	Web technology with thick client is needed Java and External Helper Programs at client PC is necessary

2. *Comparison-shopping with buyer's own e – card:* The supplier oriented marketplace stores the shopping cart in the supplier's server. However, to compare the items from multiple e – stores, it is convenient to pick the items for the buyer's e – cart tentatively so that the buyer's organizational decision making can be supported by the information in the cart.

B2C EC Platform	B2B EC Platform
▪ Customers need to visit many e-mail	Meta - malls architecture is needed for Customers to reduce the effort of visiting Many sites (Lee and Lee 1998b)
▪ Every e – mail asks customers to use the proprietary shopping bag and digital wallet	Standard shopping bag and digital wallet that can work independently of e - mails are necessary
▪ A software agent merely helps the search process	Comparison shopping needs to be treated as multiple criteria decision support
▪ Customer membership registration Is requested for each mail	Shared customer membership is necessary to allow the comparison of multiple mails With a single registration

3. *Just – in – time delivery:* The business who operates the assembly line in JIT manner needs JIT delivery.

B2C EC Platform	B2B Platform
▪ Inventory availability is not displayed	Dynamic inventory availability should be displayed to customers
▪ Precise delivery date is less critical	Precise delivery date should be dynamically confirmed at ordering time
▪ Ordering system is separated from inventory system	Integration of orders with inventory,production scheduling and delivery scheduling system is essential

4. *Buyer – oriented directory:* The supplier – oriented directory is not easy to use from the business buyer's point of view. The buyer needs to construct a buyer – oriented directory that will be maintained by software agents.

B2C EC Platform	B2B Platform
▪ Seller – oriented directory is popular	To big buyers, buyer – oriented directory should be offered
▪ Major motivation of EC is sales Promotion	Additional motivation is reengineering the acquisition process
▪ Either buyer or seller – oriented directory Is developed	Intermediary directory is necessary to coordinate seller or buyer - oriented directories

5. *Formal contract with bidding process:* Business contract needs more formal documentation and protocol. The buyer may need to attach an electronic invoice for their organizational decision and audit.

B2C EC Platform	B2B Platform
▪ Ordering without formal contract is sufficient for order fulfillment	Formal contract with electronic documents that include specific terms and conditions is necessary
▪ Free contract protocol	Legitimate contract protocol needs to be conformed
▪ Electronic versions of traditional bidding and auction are implemented	More creative contract protocol can be innovated

6. *Organizational purchasing decision:* To assist the organizational purchasing decision – making process, the workflow should be integrated with the B2B EC platform.

B2C EC Platform	B2B Platform
▪ Purchasing is an individual buyer's decision	Purchasing is an organizational buyer's decision
▪ Buying decision process does not need coordination	Buying decision is made as a combination of synchronous group decision and synchronous group decision

7. *Agent – based commerce:* Agents need to be more intelligent to understand and respond appropriately. The language for agent based commerce needs to be standardized for global B2B EC.

B2C EC Platform	B2B Platform
▪ Human interactively involved in the buying decision	Buyer's and seller's software agents assist communication to minimize human involvement
▪ Software agent in one site may not understand the norm of the counterpart agents	Mutually agreed contract type conformation is necessary to establish understandable communication among agents
▪ Buyers have to search around the sellers	Seller agents assist the configuration process

Products catalog, configuring manually ▪ Seller's data mining is popular	based on the buyer's requirement specification Buyer's data mining is additionally necessary

8. *Secure large payment:* Business purchase needs large payment and the credit card is too expensive for electronic payments. Electronic fund transfer with a small – card – based certification seems an appropriate payment method for B2B EC.

B2C EC Platform	B2B Platform
▪ Credit card is popular, which charges The relatively high fee to sellers Security, become delivery record	Electronic check and EFT will become popular fees are traditionally paid by payer. Security, Certification and non-repudiation will become More critical. Therefore, registered delivery, Which keeps the important transaction record At the third party will become popular.

CHAPTER 4

Intranet and Extranet

4.1 Architecture of the Internet, Intranet and Extranet

The Network Exchange (ANX) vignette illustrates how the major players and competitors in an industry may team up to create a unified industry – wide Extranet that benefits everyone. The Internet, Extranet and Intranet are the most popular platforms for EC. This chapter, aims to investigate these technologies, their benefits, costs, deployment strategies, and case studies. The Internet is the most common platform for the B2C EC, the Intranet is the most common platform for corporate internal management, and the Extranet is the most common platform for the B2B EC. It will be beneficial to provide definitions of the Internet, Intranet and Extranet and contrast them. The common protocol that provides interoperability between The Internet, Extranets and Intranets is Transmission Control Protocol (TCP)/Internet Protocol (IP).

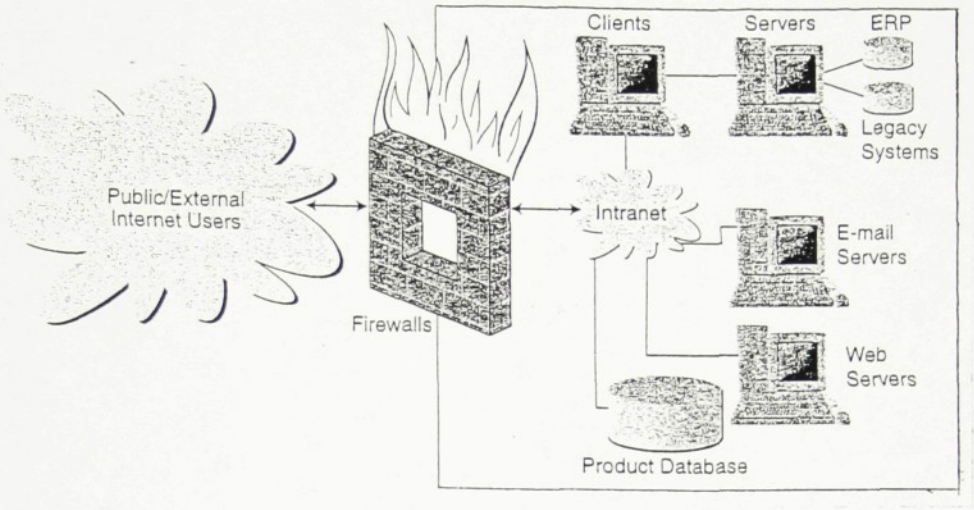
4.1.1 The Intranet:

The **Internet** is a public and global communication network that provides direct connectivity to anyone over a Local Area Network (LAN) or **Internet service provider. (ISP).** The Internet is a public network that is connected and routed over gateways. End users are connected to local access providers who are connected to Internet access providers, to network access providers and eventually to the Internet backbone. Since access to the Internet is open to all, there is a lack of control that may result in an unruly proliferation of information. Owing to the vast scope of public and advertising information, users need effective and efficient search engines to navigate the sea of information.

4.1.2 The Intranet: An Intra-Business Delivery System:

An Intranet is a corporate LAN or Wide Are Network (WAN) that uses Internet technology and is secured behind companies firewalls. The intranet links various servers, clients, databases and application programs like Enterprise Resource Planning (ERP). Although Intranets are developed on the same TCP /IP protocol as the Internet, they operate as a private network with a limited access. Only authorized employees are able to use it. Intranets are limited to information pertinent to the company and contain exclusive and often proprietary and sensitive information. The firewall protects the Intranet from unauthorized outside access; the Intranet can be used to enhance the communication and collaboration among authorized employees, customers, suppliers and other business partners. Since the Intranet allows access through the Internet, it does not require any additional implementation of leased networks. This open and flexible connectivity is a major capability and advantage of Intranets. Intranets provide the infrastructure for many Intra-business commerce applications.

Figure 13:Architecture of Intranet.

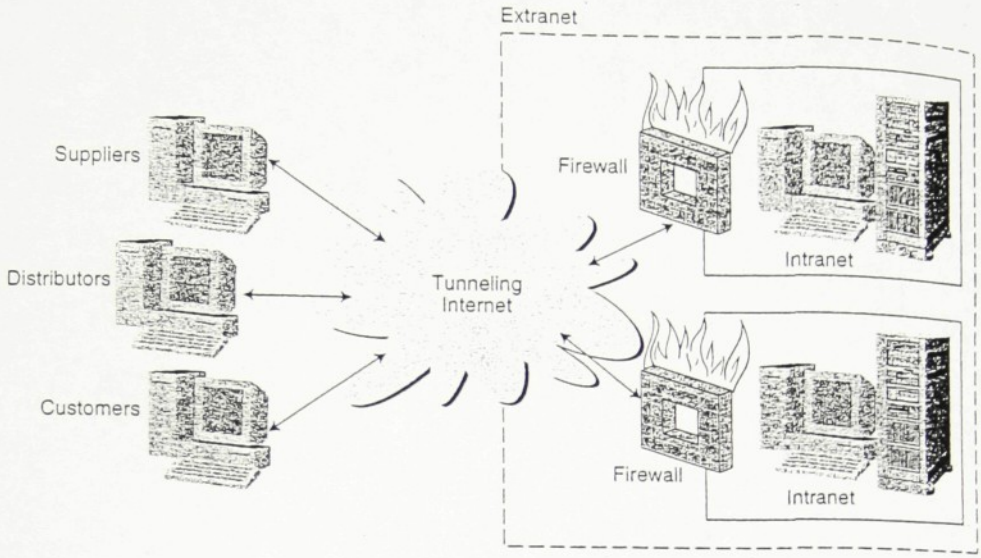


4.1.3 The Extranet:

An Extranet, or "extended Intranet" uses the TCP/IP protocol networks of the Internet, to link intranets in different locations. Extranet transmissions are usually conducted over the Internet, which offers little privacy or transmission security. Therefore, when using an Extranet, it is necessary to improve the security of the connecting portions of the Internet. This is done by creating tunnels of secure data flows, using cryptography and authorization algorithms. The Internet with tunneling technology is known as a **virtually private network (VPN)**.

Extranets provide secure connectivity between a corporation's Intranets and the intranets of its business partners, material suppliers, financial services, government and customers. Access to Intranets is usually limited by agreements of the collaborating parties, is strictly controlled and it is only available to authorized personnel. The protected environment of the Extranet allows groups to collaborate, to share information exclusively and exchange it securely. Since an Extranet allows connectivity between businesses through the Internet, it is an open and flexible platform suitable for supply chain management. To increase security, many companies replicate the databases they are willing to share with their business partner and separate them physically from their regular Intranets. However, even separated data needs to be protected. This protection is provided by special architecture shown in Figure 14.

Figure 14: Diagrammatic Control of the Internet, Intranet, and Extranet.



4.2 Intranet Software

According to Forrester Research Conducted in April 1997, 64% of Fortune 1,000 companies already had an intranet. Another 32% were building them (Maddox 1997). According to tracking of Zona Research Inc., sale of Intranet software in 1996 was $476 million and by 1998 had topped $8 billion. With such rapid growth, many software developers were trying to capture part of this business.

To build an Intranet, we need Web servers, browsers, Web publishing tools, backend databases, TCP/PI networks (LAN or WAN), and firewalls. A **firewall** is a software and/or hardware that allows only those external users with specific characteristics to access a protected network. Additional software may be necessary to support the Web – based workflow, groupware, and ERP, depending upon the company's individual needs.

4.3 Application of Intranets

In this section a review of the applications of Intranets from three perspectives: generic functions, application areas, and specific Intranet solutions are presented.

4.3.1 Generic Functions of Intranet:

The major generic functions that intranets can provide (SurfCONTROL 1997) are:

- Corporate/department/individual Web pages
- Database access: web – based database

- Search engines and directories: assist keyword – based research
- Interactive communication: chatting, audio, and video conferences
- Document distribution and workflow: Web – based download and routing of documents
- Groupware: fancy e – mail and bulleting board
- Telephony: intranets are the perfect conduit for computer based telephony
- Integration with EC: interface with Internet – based electronic sales and purchasing
- Extranet: linking geographically dispersed branches, customers and suppliers to authorized sections of intranets creates happier customers, more efficient suppliers and reduced staff costs

These functions are provided for a large number of applications

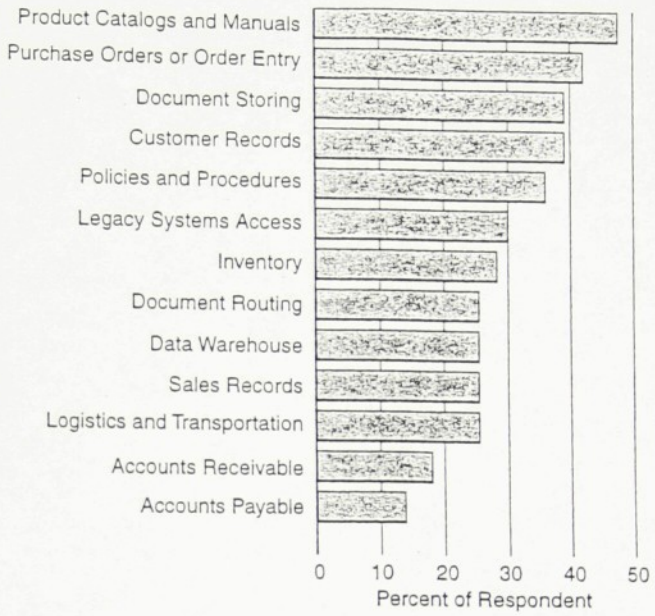
4.3.2 INTRANET APPLICATION AREAS

According to a survey conducted by Information week with 988 responding managers (Chabrow 1998), information that is most frequently included in intranets are corporate policies and procedures, document sharing , corporate phone directories, human resource forms, training programs, customer databases, product catalogs and manuals, data warehouse and decision support access, image archives, purchase orders, enterprise suits, and travel reservation services. Among the above applications, customer databases, product catalog and manuals, purchase orders, and travel reservation services are directly related to electronic marketing and purchasing.

Using the above information, intranets can be applied to (Robinson 1996):

- Electronic commerce: sales and purchasing can be done online
- Customer service: UPS, FedEx, and other pioneering companies have proved that information about product shipments and availability make customers happier
- Reduced time to market: easy online access for product development speeds teamwork
- Enhanced knowledge sharing: Web pages can enhance knowledge sharing
- Enhanced group decision and business process: Web – based groupware and workflow is becoming the standard intranet platform
- Empowerment: everything should be available to everyone with the right to know
- Virtual organizations: Web technology at both ends removes the barrier of incompatible technology between businesses
- Software distribution: use the intranet server as the application warehouse and avoid many maintenance and support problems
- Document management: employers can access pictures, photos, charts, maps and other documents regardless of where they are stored
- Project management: share the reports and check the project's progress
- Training: the Web page is a valuable source of providing knowledge to novices
- Facilitate transaction processing: the data are entered efficiently through the intranet Web only once, and internal control can be applied consistently through out the system
- Eliminate paper-based information delivery: eliminating the paper in the firm can result in lower cost, easier accessibility and greater efficiency
- Administrative process support: the internal management of production, inventory, procurement, shipping, and distribution can be effectively supported by linking these functions in a single threaded environment – intranet – and these function can also be seamlessly integrated with the inter-organizational Extranets.

Figure 15:Information on Intranets.



4.3.3 Industry-Specific Intranet Solutions:

Intranet solutions are frequently classified by industry instead of technology, because the technology is no longer a bottleneck of implementation. The development of business models has become a critical concern for the managerial success of Intranets. According to the classification of Information Week Online, the top 100 Intranet and Extranet solutions can be classified by industry as follows (Solution series 1998):

- Financial services: banking, brokerages and other financial services, insurance
- Information technology
- Manufacturing: chemicals and oils, consumer goods, food and beverage, general manufacturing and pharmaceuticals
- Retail
- Services: construction/engineering, education, environmental, health care, media, entertainment, telecommunications, transportation and utilities

Internet applications are very diversified. There is no limit to industries using the Intranet. It is interesting to note that the Extranet has become the best user of Intranets in 1999. This implies that the internal use of the Intranet has matured, changing the focus to the Extranet as of 1999.

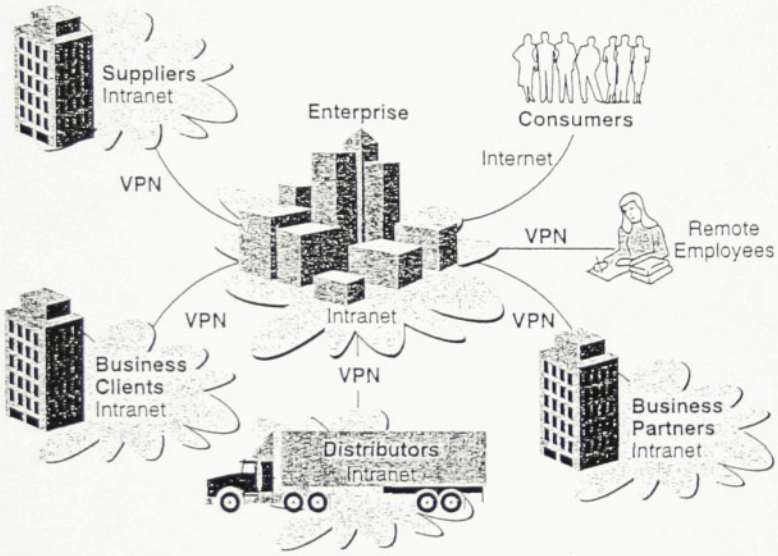
4.4 Basic Concept of Extranets

Now let us shift our attention to the Extranet, the extended Intranet, that connects multiple intranets through a secure tunneling Internet

4.4.1 The Extranets

Extranets combine the privacy and security of Intranets with the global reach of the Internet, granting access to outside business partners, suppliers, and customers to a controlled portion of the enterprise network. Extranets are becoming the major platforms for B2B EC replacing or supplementing EDI. They provide the flexibility of serving internal and external users.

Figure 16:The basic concept of an Extranet from a company's point of View.



4.4.2 Potential of the Extranet Market:

Since Intranets are included in Extranets the forecasted potential of Extranets is frequently combined with that of the Intranets. According to a study by the Gartner Group (www.gartner.com), Extranets are expected to be the platform of choice of more than 80% of B2B EC by 2001. This increasing acceptance in expected to surpass the B2C EC, which is also expected to be conducted across Intranets, by about 40%. Most of the B2C EC traffic will be done on the regular Internet. However, any companies, such as FedEx, will allow consumers to enter their Intranets.

The telecommunication carriers, such as AT&T, MCI, and Sprint and the leading Internet access providers, such as Bolt, Beranek&Newman (BBN) and UUNet already offer special corporate intranet services. These services provide secure data transmission within VPNs and extensive performance-monitoring systems. According to the Internet research firm of Killen&Associates (Palo Alto, California), sales of intranet and extranet software, hardware and services reached $7.76 billion in 1997.It was expected to reach $20 billion by 2000 (Szuprowicz 1998).

4.4.3 Planning Extranets: Coordination and Security:

While Extranets are easy to use, implementing an efficient Extranet requires extensive coordination between the company and its business partners. Legacy systems, databases, and other corporate resources must be interconnected for outside access and protected from unauthorized intruders. Companies must approach Extranet design and development with a need analysis to identify the best business opportunities.

The success of the Extranets depends on the security measures implemented for the system. The Extranet is useless without the ability to secure transmit sensitive data between the Intranet and authorized partners. Although 100% security is impossible, discerning actual threads from perceiver threads and than selecting appropriate measures will help to secure the communication environment. Is selecting the strongest possible security for the entire Extranet and associate Intranets the best strategy? Not necessarily, because the stronger the security measures, more hardware and software are required to maintain an acceptable performance level. A balance between security levels and return on investment analysis is an important component of an initial investigation to conduct Extranet development.

Once a thorough need analysis is completed, the feasibility of outsourcing must be checked. For most companies, the best strategy is to acquire a complete Extranet package from e vendor such as Bay Networks, Lotus Development, Microsoft or Netscape Communications. Select an ISP that provides high performance, low-latency connectivity, dial-in availability, and written service-level guarantees.

4.5 The Structure of Extranets

This section elaborates on the structure of Extranets, including a review of tunneling technology and Virtual Private Network (VPN).

- Elements of Extranets:

Extranets are comprised of a wide variety of components and participants, and there are several possible configurations. These include Intranets, Web servers, firewall, Internet Service Providors, tunneling technology, interface software, and business applications. The tunneling principle is the basic concept that makes the Extranet possible. Tunneling means that data transmissions across the Internet can be made secure by authenticating and encrypting all IP packets. Several tunneling protocols are available, but IP security proposed by Internet Engineering Task Force (IETF) is one of the most popular protocols (Szuprowicz 1998).

Extranets are configured by two basic methods:

1. they can be implemented using a direct leas line with full control over it, linking all intranets.
2. A secure link (tunnel) can be created across the Internet, which can be used by the corporation as a VPN, usually at a much lower cost.

Besides the security issue, the effectiveness of an Extranet depends on the degree to which it is integrated with legacy systems and databases. In many instances, integrating with legacy systems involves integrating a System Network Architecture (SNA) - the backbone of legacy systems in many corporations – with TPC/IP, the Web backbone. The technical differences between the two systems are often sources of conflict.

4.6 Extranet Products and Services

Extranet products and services are available in four categories:

1. Extranet development tools provide the means of facilities to design Extranet servers, a client – base, security, EC applications and electronic catalogs.
2. Extranet hosting and network connectivity provides secure ISP connections to Internet backbones and host Extranet services for corporations.
3. Extranet services provide Extranet design expertise with proprietary tools or turnkey services for building and operating Extranet – based services for corporate clients.
4. Virtual private networks provide components specifically designed for connecting remote operators and creating IP WANs for corporations.

These products and services are designed to develop and host and enable Extranets. Their numbers are increasing rapidly. Categories overlap significantly as vendors enter associated market segments – particularly among Extranet hosting companies that provide Extranet development tools and management services. In some cases, the differences between Extranet products and services are decreasing.

- Extranet Tools and Service Providers

The Extranet development tools include a range of products from relatively simple EC software to sophisticated catalog servers that combine software and hardware products. The representative tool providers are listed in the book's Web site.
There are four types of Extranet service providers (Szuprowicz 1998). Representative Extranet services are listed in the boo's Web site (www.prenhall.com/turban).

1. Consultants who develop Extranet for clients
2. Developers who are using generally available development tools proprietary products
3. System integration firms that provide turnkey solutions, including design, development, ISP connectivity, and Extranet hosting operations as a single source
4. Internet service providers who already operate the Internet backbones

Representative VPN products and providers are listed in the book's Web site. Many telecom carriers now offer VPN services for Internet based B2B communications. These carriers use their own private network backbones to which they have added security features, Intranet connectivity, and new dial – up capabilities for remote services. According to Forrester Research, VPN carrier service revenues were less than $40 million in 1997 were expected to increase rapidly to $ billion by 2000. At that time, 40% of all business Internet sales were expected to involve VPN services linking Intranets.

4.7 Applications of Extranets

The generic functions of Extranets are basically the same as those of the Intranet, although the Extranet can cover more than one Intranet. The key extended function of the Extranet is, as the name implies, that the geographical dispersed networks can be connected through the Internet. The current WAN on the proprietary network may be replaced by an Extranet mainly because of its low cost and the use of Internet tools.

4.7.1 BENEFITS OF EXTRANETS

According to Szuprowicz (1998), there are five categories of Extranet benefits. They are:

1. Enhanced communications
   - Improved internal communications
   - Improved business partnership channels
   - Effective marketing, sales, and customer support
   - Collaborative activities support
2. Productivity enhancements
   - JIT information delivery
   - Reduction of information overload
   - Productive collaboration between work groups
   - Training on demand
3. Business enhancement
   - Faster time to market
   - Simultaneous engineering potential
   - Lower design and productive costs
   - Improved client relationships
   - New business opportunities
4. Cost reduction
   - Reduced error
   - Improved comparison shopping
   - Reduced travel and meetings
   - Reduced administrative and operational costs
   - Elimination of paper publishing costs
5. Information delivery
   - Low-cost publishing
   - Leveraging of legacy systems
   - Standard delivery systems
   - Ease of maintenance and implementation
   - Elimination of paper publishing and mailing costs

CHAPTER 5

Electronic commerce in real life

As Internet-based network reliability, speed and security have improved in recent years as more businesses have connected to the Internet in our real life, and one of these businesses is a bookstore in the Internet, and here I took Jashanmal & Sons as an example.

- Jashanmal & Sons.

Jashanmal & Sons is one of the famous businesses in Bahrain that lunched a new line on the Internet to cope with the new economy. Jashanmal Company was originally established in Basra, Iraq in 1919 and has now grown to become a household name in the Arabian Gulf market. Jashnmal Bahrain began in 1935 and the first shop was located in what was then the covered souq. The company grew gradually, mirroring Bahrain's overall expansion. Jashanmal has always concentrated on quality products coupled with a well-trained and highly motivated sales force.

The activity of the company is operated under retailers and wholesalers divisions. The agencies of the company in Bahrain provide perfume, cosmetics, consumer products, newspapers and periodicals. The current business of the company are three bookshops, which trade under the name Booksplus have only been in operating for two and half years, and already, control a very high percentage of the book business in Bahrain. Jashanmal understand the importance of virtual bookstores, which leads to the emergence of Booksplus.com.bh. On the basis of the new line, Jashanmal obtained huge advantage over physical competitors.

5.1 METHODS

In order to examine the electronic business of Jashanmals Booksplus in Bahrain the following investigatory procedures were adopted:

1. Secondary research (Books).
2. Personal interview with Mr.Bharat Jashanmal, the managing director of Jashanmal;
3. Internet

- FINDINGS:

1. **Books:**

Most companies walk through five distinct stages in their electronic-business initiatives, and Jashanmal follows similar procedure in developing their Booksplus, these stages are as follows:

(a) Supplying company and product information (brochureware)

"Brochureware" is the term commonly given to the "first-generation" Web-site, one that simply provides marketing information and company background information. There is an understanding in the business community that this isn't a very profitable stage. Yet it is generally considered a prerequisite. Brochureware is a useful first step because it allows people outside the company to get an overview of the business and its products, history, and finical status or even just fined a mailing address.

Brochureware is an equivalent to the phone-accessible system, which includes information such as hours of operations, current product availability and pricing, driving direction, mailing address.

(b) Providing customer support and enabling interactions

Customer support is the next stage. And here is where the real payoff begins. If a company have a group of consumer or business customer who are currently, or likely soon to be, internet-enabled, this is where the company should emphase on. Customer support is the most beneficial application on the Web. Customers want to help themselves to information, both before they make a purchase and afterward. They want to research their choices and make informed decisions. Once they have placed an order, they want to check on the status of that order. They want to get help with an understanding of how to make the product work without waiting for someone to answer the phone and answer their questions.

(c) Supporting electronic transaction

Once you have a Web-side that explains your products and services and lets customers help themselves, the logical next step is to enable customers actually to purchase goods and services from the Web-the transaction stage. There is nothing more annoying to prospective customers than to be ready to place an order on the Web and be told that they have to call for further details. However, the company will be surprised at the number of customers, who will be willing to order electronically, particularly who are repeated buyers. They may also be surprised at the amount of transactions people are currently doing over the Web.

(d) Personalizing interactions with customers

By now the company has got a highly informational and interactive Web site. Customers can help themselves to all the information they need to make a purchasing decision. They can go to the Web site to answer any question about the product or to find out about the status of their transaction with the company. The next step is that the company should ask the customers to tell more about themselves in order to ensure that the customer keep doing business with them and to build and maintain a profile about the customers interests and preferences. In addition, settled upon communication phone, e-mail, or fax- with customers should be considered and locate the product or services that the customer cares about.

(e) Fostering community

Once the companies have established a level of trust a one-on-one relationship with the customer using electronic tools, they can move to the next step; fostering a feeling of community among their customers. Companies will be surprised at the extent which customers like to help one another out with technical problems, give one another tips, and exchange their experience.

2. **Interview:**

After an interview with Mr.Bharat Jashanmal, it was found that Jashanmal & Sons Bahrain launched its first dedicated bookshop under the name Booksplus in Seef Mall in April 1997. The second one was opened in Al Aali Shopping Complex in March 1998, and the third one was opened in April 1998.

The Internet is the next logical move on which to build up the initial success of Jashanmal international electronic – business. Recently Jashanmal introduced BooksPlus.com.bh, to serve their Gulf Co-operation Council (GCC) customer on-line.

This movement was done on the basis of the following criteria:

(a) By going regional initially, Jashanmals Booksplus are expanding their customer base from a potential of 50.000-75.000 in Bahrain to a possible 2 million plus in the GCC.
(b) Frequent marketing research showed that the main reason for using the Internet is convenience (70%), followed by price (45%). Therefore, we can categorize the usage of Internet into three main categories (convenience, price, and range).
(c) Allows customers to place an order on-line to have the product physically shipped to the front door.
(d) Providing company and product information and technical assistance on-line all day and all night.
(e) Creating automated on-line systems for ordering products and services from vendors and suppliers.
(f) Increase in the level of education in the GCC.
(g) Technology advancement.
(h) Easy transportation between GCC provides the advantage of cost reduction per shipment.
(i) Wanted to add the Web as a marketing and distribution channel.

3. Internet:

In this section comparison between Jashanmal Bookplus – a local bookstore – and Amazon.com – an international bookstore are accomplished. Amazon.com is much more than the "Earth's Biggest Bookstore". It is one of the most comprehensive retail experiences on the Web. Amazon.com continues to refine both the retail experiences it offers customers and its business model, always managing to keep a step ahead of its competition.

The comparison points based on services, payment method, security, and other general points are summarised as follows:

(a) Services

Based on Jashanmal raw data, the store will have access to approximately 1.2 million titles at any given time. Amazon.co.uk offers a catalogue of more than 1.5 million books, a huge range of CD music albums, videos and DVDs as well as a variety of other resources including customer reviews, e-mail personal recommendations and gift certificates. In addition, customers can browse US shop and discover electronics and software, and home improvement goods.

(b) Payment method

The Web sites of Jashanmal Booksplus and Amazon.com take credit card purchases over the Internet. In a section on security, they carefully explain how the credit card number is encrypted and how it is stored securely. And for customers, who still doubt, they offer e-mail or fax as an alternative method for supplying credit information.

(c) security

When a customer place orders or accesses their account information, Jashanmals Booksplus and amazon.com offer the use of a secure server. The secure server software (SSL) encrypts all information customers input before it is sent. Furthermore, they follow strict security procedures in the storage and disclosure of information which customers have given to prevent unauthorized access. Occasionally they may request proof of identity before they disclose sensitive information to the customer.

(d) Convince

Jashanmal Booksplus site offers the most used function in a book site; book search. Through this function, customers can search through four categories such as title, author, subject, and ISBN. Amazon.com was the first company on the web to realize that customers would welcome proactive e-mail notifications about things they are looking for. The customer can sing up to receive notifications by topic or by author, or based on certain other criteria.

(e) Finally, there are few comparison points, which are listed below:

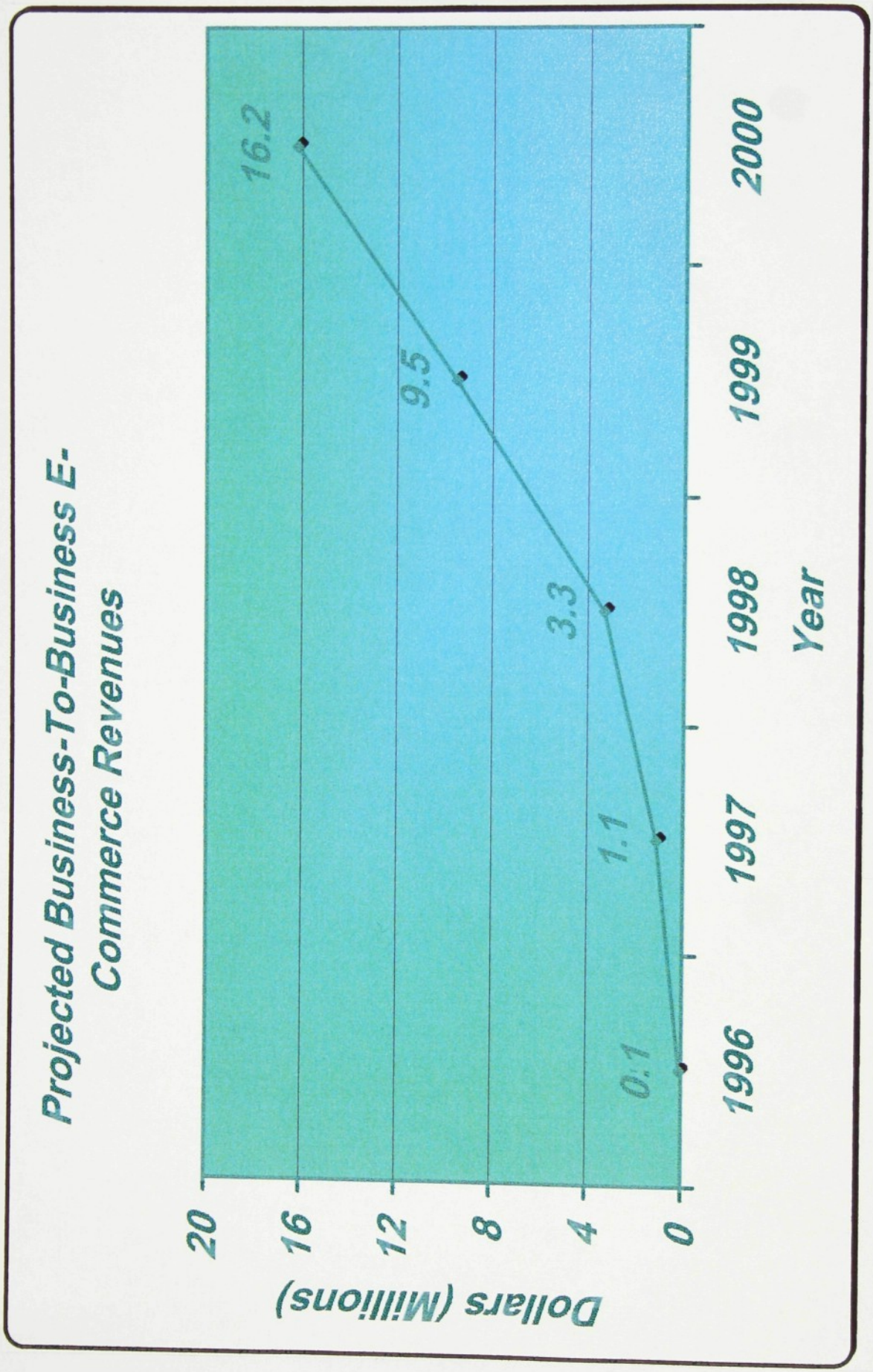
	Jashanmal Booksplus	**Amazon.com**
Delivery time	24 hours to a month or more if the book has not been published yet	24 hours to a month or more if the book has not been published yet
Price	10% less from the price to the GCC countries	Delivery charge + book price
Internet Charge	Is high for GCC countries	Moderate internet charge
Expansion	GCC countries only	International
Distribution Channel	Internet, Wholesalers, and retailers	Internet
Promotion	Internet, newspaper, consumer magazines, trade journals, brochures and seminars	Internet

- E-Commerce Market Size Projections:

1-57 percent of companies will implement e-commerce systems by the end of 1999(Zona Research).
2-By 2001, 90 percent of companies will engage in business-to Business e-commerce (Forrester).
3-By 2002, 59 percent of households and 50 percent of business will be online.
4-Forrester predicts that total Internet business will reach $ 1.3 trillion by 2003.

- **Projected Business-to-Business E-Commerce Revenues (Appendix 1).**

Appendix 1:



The source for the information: Booze, Allen Hamilton.

Summary

This Project is to describe what Electronic Commerce is by describing the two kind of E-Commerce, Business to Consumer and Business to Business Electronic Commerce.

And I described the benefits and limitations of Electronic Commerce and the strategy and implementation of E-Commerce, and how retailing works through Electronic Commerce.

Electronic Commerce to be clearly understands I explain it with an example of our real life by the bookstores in the Web sites like (Jashanmal & Sons, Bahrain).

Conclusion:

Established companies who cling to the status quo will put their organization in ultimate peril. The Internet is not just a passing fad, as Bill Gates once stated and later changed his tune, but rather a means by which organizations can (and should) re-examine every aspect of how they conduct business from their business models to their business processes. Using Internet technology can allow completely new or incredibly streamlined processes to be implemented.

In this project I provided an overview of what Electronic Commerce is, benefits and problems of Electronic Commerce, and Strategy and Implementation of Electronic Commerce.

On the whole, it can be concluded that no one company has built its infrastructure in the exact way but many have come close.

Accordingly, Booksplus.com.bh has the opportunity to become the first totally on-line electronic-business site in the Middle East.

Also it is concluded that, this site allows Jashanmals Booksplus to develop further electronic-commerce links and business. Analysts, often refer to Electronic Commerce transaction as being either between business (Business-to-Business) or between business and consumers (Business-to Consumer).

As I explained in this project, Web Marketing with a new business environment comes new ways of exposing potential customers to new business.

References:

1. Electronic commerce
   By:Efraim Turban, Jae Lee, David King
   Prentice Hall / October 1999, USA

2. The Complete Idiot's Guide to E-commerce
   By: Rob Smith, Mark Thompson, and Mark Speaker
   A Division of Macmillan Computer Publishing, Indianapolis / January 2000, USA

3. Electronic Commerce
   By: J.J. Timmers
   John Wiley & Sons / May 2000, USA

4. Jashanmal & Sons
   Fib 2000, Bahrain

5. Internet web sites :

- http//www.e-commerce technology inc.com
- http//www.valu.net/corpover.htm
- http//www.unisys.com
- http//members.nbci.com/etoung/constellation/e-commerce.html