

PROBLEMS AND PROSPECTS OF ELECTRONIC COMMERCE TECHNOLOGY IN THE GLOBAL BUSINESS SCENARIO

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Introduction

Commerce (the trading of goods) has been a major impetus for human survival since the beginning of recorded history and beyond. The mass adoption of the Internet has created a paradigm shift in the way businesses are conducted today. The past decade has seen the emergence of a new kind of commerce: e-commerce, the buying and selling of goods through human-computer interaction over the Internet. Traditional physical trading of goods and currency is becoming increasingly unpopular and more businesses are jumping on the e-commerce bandwagon. Today, the line between e-commerce and traditional commerce is becoming more blurred as more businesses start and continue to integrate the Internet and e-commerce technologies into their business processes.

Evolution of E-Commerce

Evolution of e-commerce can be attributed to a combination of regulatory reform and technological innovation. Though Internet (which played an important role in evolution) appeared in the late 1960s, e-commerce of today took off with the arrival of World Wide Web and browsers in early 1990s. The liberalization of the telecommunications sector and innovations such as optic fiber, DSL etc. (which has helped to expand the volume and capacity of communications) have helped in the process of that rapid growth. As a result the barriers to entry and engage in e-commerce have fallen rapidly. A brief timeline of evolution is as follows:

- 1969 Internet/APRAnetss
- 1989 WWW HTML invented at CERN
- 1991 NSF lifts restrictions on commercial use of Internet
- 1993 Mosaic browser invented at University of Illinois, Urbana Champagne, is released to public
- 1994 Netscape releases Navigator browser
- 1995 Dell, Cisco, Amazon etc. began aggressively to use Internet for commercial transactions

The growth of Internet has a special significance in the growth of e-commerce. It has the potential to involve general people into the process thereby increasing its reach far beyond large companies.

Conducting Business Online (E-Commerce)

Doing business online is electronic commerce, and there are four main areas in which companies conduct business online today:

- Direct marketing, selling, and services.
- Online banking and billing.

- Secure distribution of information.
- Value-chain trading and corporate purchasing.

Direct Marketing, Selling, and Services

Today, more websites focus on direct marketing, selling, and services than on any other type of electronic commerce. Direct selling was the earliest type of electronic commerce, and has proven to be a stepping-stone to more complex commerce operations for many companies. Successes such as Amazon.com, Barnes and Noble, Dell Computer, and the introduction of e-tickets by major airlines, have catalyzed the growth of this segment, proving the reach and customer acceptance of the Internet.

Financial and Information Services

A broad range of financial and information services are performed over the Internet today and sites that offer them are enjoying rapid growth. These sites are popular because they help consumers, businesses of all sizes, and financial institutions distribute some of their most important information over the Internet with greater convenience and richness than is available using other channels. For example, you have:

- Online banking
- Online billing
- Secure information distribution

Online Banking

Consumers and small businesses can save time and money by doing their banking on the Internet. Paying bills, making transfers between accounts, and trading stocks, bonds, and mutual funds can all be performed electronically by using the Internet to connect consumers and small businesses with their financial institutions.

Online Billing

Companies whose bill can achieve significant cost savings and marketing benefits through the use of Internet-based bill-delivery and receiving systems. Today, consumers receive an average of 23 bills per month by mail from retailers, credit card companies, and utilities.

Secure Information Distribution

To many businesses, information is their most valuable asset. Although the Internet can enable businesses to reach huge new markets for that information, businesses must also safeguard that information to protect their assets. Digital Rights Management provides protection for intellectual and information property, and is a key technology to secure information distribution.

Maintenance, Repair and Operations (MRO)

The Internet also offers tremendous time and cost savings for corporate purchasing of low-cost, high-volume goods for maintenance, repair, and operations (MRO) activities. Typical MRO goods include office supplies (such as pens and paper), office equipment and

furniture, computers, and replacement parts. The Internet can transform corporate purchasing from a labor and paperwork-intensive process into a self-service application. Company employees can order equipment on websites, company officials can automatically enforce purchase approval and policies through automated business rules, and suppliers can keep their catalog information centralized and up-to-date. Purchase order applications can then use the Internet to transfer the order to suppliers. In response, suppliers can ship the requested goods and invoice the company over the Internet. In addition to reduced administrative costs, Internet-based corporate purchasing can improve order-tracking accuracy, better enforce purchasing policies, provide better customer and supplier service, reduces inventories, and give companies more power in negotiating exclusive or volume-discount contracts. In other words, the Internet and e-business have changed the way enterprises serve customers and compete with each other, and have heightened awareness for competing supply chains.

Value-Chain Integration

No other business model highlights the need for tight integration across suppliers, manufacturers, and distributors quite like the value chain. Delays in inventory tracking and management can ripple from the cash register all the way back to raw material production, creating inventory shortages at any stage of the value chain. The resulting out-of-stock events can mean lost business. The Internet promises to increase business efficiency by reducing reporting delays and increasing reporting accuracy. Speed is clearly the business imperative for the value chain.

Problems in Implementing Electronic Commerce

Although it is simple to describe their benefits, it is not nearly as easy to develop and deploy commerce systems. Companies can face significant implementation issues:

- Cost
- Value
- Security
- Leveraging existing systems
- Interoperability

E-Commerce Technologies

What technologies are necessary for e-commerce? The short answer is that most information technologies and Internet technologies that we discuss throughout the book are involved in e-commerce systems, viz.-

- The Internet, intranets, and extranets are the network infrastructure or foundation of e-commerce.
- Customers must be provided with a range of secure information, marketing, transaction, processing, and payment services.

- Trading and business partners rely on Internet and extranets to exchange information and accomplish secure transactions; including electronic data interchange(EDI) and other supply chain and financial systems and databases.
- Company employees depend on a variety of Internet and intranet resources to communicate and collaborate in support of their EC work activities.
- Information system professionals and end users can use a variety of software tools to develop and manage the content and operations of the websites and other EC resources of a company.

Economic Potential of E-Commerce

Consumers are pushing retailers to the wall, demanding lower process, better quality, a large selection of in-season goods. Retailers are scrambling to fill the order. They are slashing back-office costs, reducing profit margins, reducing cycle times, buying more wisely, and making huge investments in technology. They are revamping distribution channels to make sure that warehouse costs are down by reducing their average inventory levels and coordinating the consumer demand and supply patterns. In the push to reduce prices, more and more retailers are turning to overseas suppliers, in part because of cheaper labor costs. The effect of e-commerce can also be seen over the retail industry and marketing.

E-commerce and Retail Industry

Retailers are in the immediate line of fire and are first to bear the brunt of cost cutting. They are putting that pressure on the manufacturing and supplier end of the pipeline. At the same time, the quest for efficiencies has led to turmoil and consolidation within the retail industry. The pressure experienced by retailers and suppliers can be seen in the disappearance of jobs, in mergers, and in the increase in business failures in the manufacturing sector.

The problems are indeed serious. Electronic markets could provide a partial solution by promising customers more convenience and merchants' greater efficiency and interactivity with suppliers to revitalize the troubled retailing sector.

E-commerce and Marketing

Electronic commerce is forcing companies to rethink the existing ways of doing target marketing (isolating and focusing on a segment of the population), relationship marketing (building and sustaining a long-term relationship with existing and potential customers), and even event marketing (setting up a virtual booth where interested people come and visit). Consider the case of conventional direct marketers, who devote some 25percent of their revenues to such costs as printing and postages for catalogs. Interactive marketing could help cut such expenses and may even deliver better results.

Interactive marketing is accomplished in electronic markets via interactive multimedia catalogs that give the same look and feel as a shopping channel. Users find moving images more appealing than still images and listening more appealing than reading text on screen. Those are two powerful reasons why every text-based and still-picture-based interactive experimental-based service has ever generated anywhere near the volume of retail merchandise orders that televised shopping channels have achieved. Maximum public acceptance will require that

interactive catalog services have a more entertaining visual appearance than traditional text-intensive catalogs have had. Ideally, an interactive shopping program should produce full-motion demonstrations of selected products, but such a practical and economical technology has yet to be developed.

Incentives for Engaging in E-Commerce

A basic fact of Internet retailing is that all retail websites are created equal as far as the “location, location, location” imperative of success in retailing is concerned. No site is any closer to its web customers and competitors offering similar goods and services may be only a mouse click away. This makes it vital that businesses find ways to build customer satisfaction, loyalty, and relationships, so customers keep coming back to their web stores. Thus, the key to e-commerce success is to optimize several key factors such as selection and value, performance and service efficiency, the look and feel of the site, advertising and incentives to purchase, personal attention, community relationships, and security and reliability. The incentives for engaging in e-commerce are listed as follows:

Selection and Value. Attractive product selections, competitive prices, satisfaction guarantees, and customer support after the sale.

Performance and Service. Fast, easy navigation, shopping, and purchasing, and prompt shipping and delivery.

Look and Feel. Attractive web storefront, website shopping areas, multimedia Product catalog pages and shopping features.

Advertising and Incentives. Targeted web-page advertising and e-mail promotions, discounts and special offers, including advertising at affiliate sites.

Personal Attention. Personal web pages, personalized product recommendations, web advertising, and e-mail notices, and interactive support for all customers.

Community Relationships. Virtual communities of customers, suppliers, company representatives, and others via newsgroups, chat rooms, and links to related sites.

Security and Reliability. Security of customer information and website transactions, trustworthy product information and reliable order fulfillment.

Driving Forces Behind E-Commerce

The various driving forces behind e-commerce can be listed as below:

Global Customers. Customers are people who may travel anywhere or companies with global operations. Global IT can help provide fast, convenient service.

Global Products. Products are the same throughout the world or are assembled by subsidiaries throughout the world. Global IT can help manage worldwide marketing and quality control.

Global Operations. Parts of a production or assembly process are assigned to subsidiaries based on changing economic or other conditions. Only global IT can support such geographic flexibilities.

Global Resources. The use and cost of common equipment, facilities, and people are shared by subsidiaries of a global company. Global IT can keep track of such shared resources.

Global Collaborations. The knowledge and expertise of colleagues in a global company can be quickly accessed, shared, and organized to support individual or group efforts. Only global IT can support such enterprise collaboration.

Users by Region of the World and Numbers of Users

The exact figures for the numbers of users worldwide vary depending on the information source, when the data was collected and when the article was published. Thus the following information (Tables 1&2) should only be viewed cautiously, perhaps only as trends for discussion purposes only, not as absolutes. The data in Tables 1 and 2 are inconsistent. Disparities in reported actual and estimated data may be due to the time frames of research (the use of the Internet is very rapidly changing) or perhaps different methodologies were used to collect actual data and to make subsequent estimates. Table 1 shows the changes in Internet usage, actual and estimated, from 1994 to 2004.

Table 1 Internet Usage by Year

Year	Millions
1994	00.00
1998	90.00
1999	179-300
2002	282-450
2003	500-700
2004	700 plus

Table 2 shows the June 1999 to 2002 percent estimated users by region of the world and their estimated numbers. The data do not represent a complete list of users, as not all information was available.

Table 2 Estimated users

Region	% users June 1999	% users 2002
North America	47.00	34.80
Europe	23.80	28.90
Asia/Pacific Rim	15.00	21.00
South America	15.00	15.30
Total	100.00	100.00

Impact of E-Commerce on Business

E-commerce will change the way the businesses are being carried on. It will lead to the emergence of new businesses as well as business practices and also a new role for intermediaries. Indeed, all the functional areas of business will undergo change as follows:

- The new technology will transform business processes, the way products and services are created and marketed, dynamics of competitions, the organization structure of the enterprise and the nature of the enterprise itself. This will include marketing, supply management, customer and sales management, product development etc.
- Local proximity may no longer be a significant factor in retaining customer. Local markets will be replaced by global markets. Indeed it may bring to reality the goal of making the whole world as one family.

- Transparency and openness continue and will continue, to be effective business strategy. Already many businesses have started recognizing key customers, employees and suppliers more like a partner in the business. E-commerce will lead to better customer service, more personalized products, reduced costs, supply's chain efficiency and faster time to market. The most significant aspect of e-commerce is new market development. The e-commerce links and the infrastructure, initially set up, can be successfully used in other sectors.
- The change in the business functions will lead to new business models and create new set of facts and circumstances that can materially change the incidence of taxation.

Conclusion

The future of E-commerce is going to depend upon a positive confluence of technology, regulation, laws, culture, social issues, economics, vendors, competitors and all consumers. From the estimated future sales figures, that appears to be happening. Overall, E-commerce is and will be important for countries and firms that already possess the environment and the capabilities and capacity to utilize the Internet for sales purposes. While E-commerce may offer little initially to bring them to the industrial nation status, there will be dramatic increases in the well being of many third world countries. Economics, politics and competitive forces will also help bring them into the 21st Century of electronics, driven by the Internet that has no boundaries and is owned by no nation. A restructuring of worldwide channels of distribution will occur with concomitant new sales, sometimes to the detriment of existing industrialized nations, with a major contribution to the economic development of both industrialized and developing nations.

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