

commerce applications and services raises so many business issues that developing a business strategy should not be left solely to the Information Systems department. "Doing business online" sounds technical, and organizations often delegate the task to the technical departments. A better approach is to develop a cross-functional team composed of technical staff as well as marketing and finance personnel. The team should be seasoned with "techno-illiterates" who may not be able to operate the PC but who understand the core business.

This chapter answers some of the most frequently asked questions about electronic commerce. It defines electronic commerce, and explains both the industry framework and supporting software infrastructure. The chapter also shows how electronic commerce fits with other management ideologies, and it examines some of the managerial issues companies face as electronic commerce becomes a locus of economic activity at the product, process, system, and market levels.

1.1 Defining Electronic Commerce

Depending on whom you ask, electronic commerce has different definitions.

From a *communications* perspective, electronic commerce is the delivery of information, products/services, or payments via telephone lines, computer networks, or any other means.

From a *business process* perspective, electronic commerce is the application of technology toward the automation of business transactions and workflows.

From a *service* perspective, electronic commerce 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, electronic commerce provides the capability of buying and selling products and information on the Internet and other online services.

All of the above definitions are valid. It is just a matter of which lens is used to view the electronic commerce landscape. Broadly speaking, electronic commerce emphasizes the generation and exploitation of new business opportunities and, to use popular phrases: "generate business value" or "do more with less."

munication, and applications. These components are explained further in Chapter 4. Within the confines of this architecture, hundreds of entrepreneurs have produced a tidal wave of software programs and tools.

The Web architecture forms the basis for electronic commerce applications that involve building software in which the functions are distributed among application servers (where applications reside), data servers (where most of the data resides), and a group of client computers that are usually networked PCs (where the information users work).

The power and influence of the Web architecture becomes obvious when one considers its profound impact on online services. For instance, CompuServe plans to move its content on to Web servers. Once it does so, subscribers will be able to access CompuServe forums, content, and information services through Microsoft's Internet Explorer, a Web browser, instead of CompuServe's proprietary technology WinCim 3.0. CompuServe's "guided surfing" model attempts to provide a context-based guide to the Internet, with the content personalized to each customer's requirements. The move to the Web will mean that they no longer need to produce their information in two forms.

The Web and Electronic Commerce Figure 3.2 shows a block diagram depicting the key elements that constitute a Web-based electronic commerce architecture: client browser, Web server, and third-party services. The client browser interacts with the Web server, which then intermediates the inter-

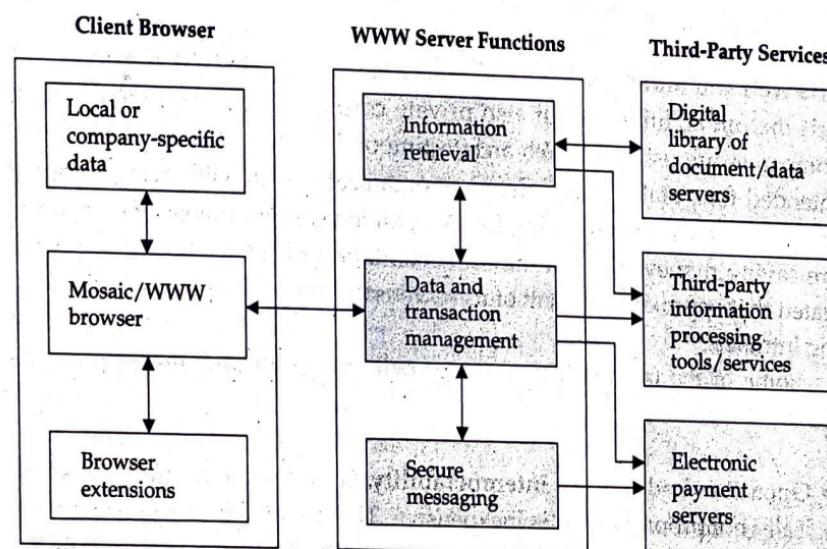


Figure 3.2 Block Diagram Depicting an Electronic Commerce Architecture

Characteristics of E-Com

Addressability

- In order to purchase something from ASOS, a customer has to sign up and log in with their information. After they have signed up, ASOS remembers their information, such as their name, shipping and billing address, credit card information and what the customer has previously purchased.**

Interactivity

- Interaction not only with customer service (who will answer your questions within 6 hours, 24 hours a day, 7 days a week) but also has extras on the site like the ASOS Market Place, Contests, Emerging Trends, and looks submitted by those in the ASOS community.**

Memory

- When you sign up for ASOS and log in, they remember you as a customer. The website remember your information as well as what the customer has purchased in the past.**

Control

- ASOS sells an array of different brands and products on their website. Because of this, they may have competition with other retailers because the products they carry are sold on a multitude of different websites. However, their in house brand reaps in 70% of their profit, which is only available at ASOS.com.**

Accessibility

- ASOS makes it extremely easy to access their website. They have an easy navigation tab at the top of the page which includes their main categories. At the bottom, it has links to all of their contact information, affiliate information and customer service information. They also provide links to all of their international sites as well.**

Digitalization

- ASOS has won a plethora of awards for best use of social media on an e-commerce site as well as an award for best use of moving images/video. ASOS has a runway option, where you can view the clothing on a model to see how it moves.**

Characteristics of E-Commerce

E-commerce is characterized by the following features:

- a. The business tools are electronic and the application is commerce, i.e. profit motive.**
- b. Business is externally focused on those with whom business is conducted.**
- c. Most of the transactions are processed automatically.**
- d. Uses a gamut of business support services, such as inter-organizational e-mail and on-line directories.**

E-Commerce Characteristics

- 1. Barriers to entry are low.**
- 2. Marketing niches abound.**
- 3. Revenue sources are many.**
- 4. No dominance in the market.**
- 5. Everyone utilizes the same technology.**
- 6. Access is becoming universal.**
- 7. There is room for teams of successful players.**

The Principles of E-Com

I. System integrity

Principle 1:

Electronic signatures should have the same legal effect as written signatures, and electronic documents should have the same legal status as written documents.

Principle 2:

Electronic storage should be recognized as an acceptable alternative to the storage of written documents.

Principle 3:

Businesses responsible for protecting the confidentiality of e-commerce customer information should have maximum flexibility to implement solutions that are best suited to their particular needs and requirements. Federal and state regulations in this area should be consistent and should promote flexibility in responding to potential security threats.

Principle 4:

Fraudulent electronic business practices should be prohibited and prosecuted in the same manner as non-electronic fraud.

Principle 5:

Consumers and businesses should be allowed to use the strongest forms of encryption available.

should be aimed at increasing access to strong encryption tools.

II. Open and Competitive Markets

Principle 6:

Business-to-business e-commerce transactions, including commercial insurance transactions, should be unregulated. No additional regulations should be imposed on electronic personal lines insurance transactions.

Principle 7:

No individual or business should be denied the benefits of electronic commerce in order to protect or promote non-electronic forms of business.

Principle 8:

There should be a level playing field for all industries and businesses with respect to e-commerce regulatory requirements.

Principle 9:

Taxes on all goods and services should be technology-neutral; therefore, there should be no unique Internet taxes. In determining whether to implement and administer a sales tax on Internet transactions, the difficulty and costs involved in adopting such a system should be weighed against the likely benefits.

Principle 10:

The use of electronic commerce in global business transactions should be encouraged and supported by every nation and by the World Trade Organization.

III. Regulatory efficiency and technical e-commerce standards

Principle 11:

Issues of regulatory jurisdiction should be resolved in a manner that best serves the needs and interests of the e-commerce customer. Wherever electronic commerce is regulated by multiple jurisdictions, there should be uniformity and minimum duplication in regulatory requirements.

Principle 12:

The development and maintenance of e-commerce communication and data transmission standards should be led by the private sector. Technical e-commerce standards should be implemented voluntarily and should be reviewed and updated on a regular basis.

Difference between Traditional Commerce and E-Commerce:

The major points of distinction between traditional commerce and e-commerce are juxtaposed in the following Table:

| <i>Points of Distinction</i> | <i>Traditional Commerce</i> | <i>E-Commerce</i> |
|-------------------------------|--|--|
| <i>Interaction</i> | Direct interaction between buyer and seller is present in traditional commerce. | Interaction between buyer and seller is indirect through internet or web. |
| <i>Suitability</i> | It is suitable for products needed to convince to the customers. | It is suitable for the standard products, low-value products, intangible products, and digital products. |
| <i>Identity Verification</i> | In traditional commerce, customer can verify the identity of the seller and their physical location. | In case of e-commerce, customer cannot identify the seller, his / her location and many other things. |
| <i>Transaction Processing</i> | Transactions are processed manually. | Business transactions are processed in automated manner. |
| <i>Scope</i> | The scope of business is generally limited to particular region. | The scope of business is worldwide. |
| <i>Level of Competition</i> | The level of competition is generally low. | Because of the wide scope of business, the level of competition is relatively high. |

E-Commerce vs. E-Business

Difference Between e-Commerce and e-Business

| eCommerce | eBusiness |
|--|--|
| <p>Ecommerce involves commercial transactions done over internet.</p> <p>Ecommerce is use of electronic transmission medium that caters for buying and selling of products and services.</p> <p>Thus, Those activities which essentially involve monetary transactions are termed as "e-commerce".</p> <p>Ecommerce usually requires the use of just a Website.</p> <p>Ecommerce involves the mandatory use of internet.</p> | <p>Ebusiness is conduct of business processes on the internet.</p> <p>In addition, Ebusiness also includes the exchange of information directly related to buying and selling of products.</p> <p>In addition it includes activities like procurement of raw materials or goods, customer education, looking for suppliers etc.</p> <p>Ebusiness involves the use of CRM's, ERP's that connect different business processes.</p> <p>Ebusiness can involve the use of internet, intranet or extranet.</p> |

12 PART I First Things First

- Global competitors
- Proliferation of commodity-like products and services

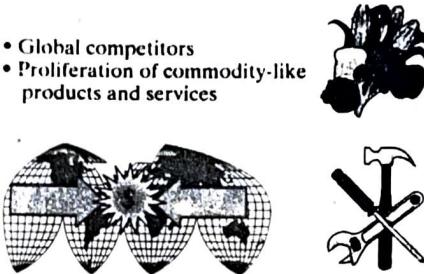


FIGURE 1.4 Increasing pressure on costs and margins

Source: Courtesy of Dr. Richard Welke, professor of CIS, Georgia State University.

pressure on firms to handle customized requests on a mass-market scale. Firms that don't move with the trend will eventually lose out (see Figure 1.5).

MYTHS YOU SHOULD KNOW

There is still confusion about what e-commerce can or cannot do. The following are myths that need to be addressed:

1. **Setting up a Web site is easy.** True, except it is not easy to ensure performance. There are technology, networking infrastructure, and design criteria to consider.
2. **E-commerce means no more mass marketing.** The Web is the first commercial channel that enables cost-effective, one-to-one marketing on a large scale, but a business must still market its Web presence.
3. **E-commerce means a new economy.** There is no "new" economy, but there is something new in the real economy.
4. **E-commerce is revolutionary.** Inasmuch as Internet technology created a new way to shop, most rules of retailing still apply. Merchandise is obtained from vendors, warehoused, and shipped to customers. Some of it is returned. Unfortunately, many Internet retailers (i-tailers) spend a disproportionate amount on the "revolutionary" tasks of Web site construction and marketing and too little on customer support and fulfillment.
5. **E-commerce is a commercial fad that crashed in 2000.** No question, the dot-com frenzy crashed in 2000. But the Internet continues to reshape businesses and the

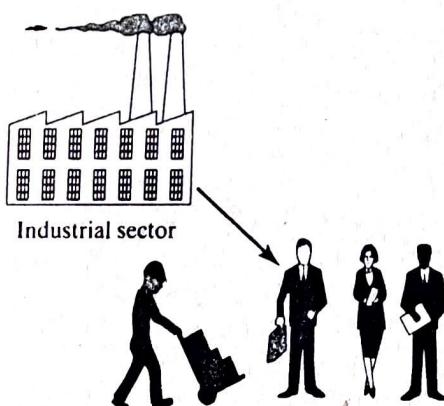


FIGURE 1.5 Mass customization

Source: Courtesy of Dr. Richard Welke, professor of CIS, Georgia State University.

| Figure 5.13 | E-Commerce Success Factors |
|--|--|
| Some of the key factors for success in E-commerce. | <ul style="list-style-type: none"> • 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. |

Selection and Value. Obviously, a business must offer Web shoppers a good selection of attractive products and services at competitive prices or they will quickly click away from a Web store. But a company's prices don't have to be the lowest on the Web if they build a reputation for high quality, guaranteed satisfaction, and top customer support while shopping and after the sale. For example, top-rated E-tailer REI.com helps you select quality outdoor gear for hiking and other activities with a "How to Choose" section, and gives a money-back guarantee on your purchases.

Performance and Service. People don't want to be kept waiting when browsing, selecting, or paying in a Web store. A site must be efficiently designed for ease of access, shopping, and buying, with sufficient server power and network capacity to support website traffic. Web shopping and customer service must also be friendly and helpful, as well as quick and easy. In addition, products offered should be available in inventory for prompt shipment to the customer.

Look and Feel. B2C sites can offer customers an attractive Web storefront, shopping areas, and multimedia product catalogs. This could range from an exciting shopping experience with audio, video, and moving graphics, to a more simple and comfortable look and feel. Thus, most retail E-commerce sites let customers browse product sections, select products, drop them into a virtual shopping cart, and go to a virtual checkout station when they are ready to pay for their order.

Advertising and Incentives. Some Web stores may advertise in traditional media, but most advertise on the Web with targeted and personalized banner ads and other Web page and E-mail promotions. Most B2C sites also offer shoppers incentives to buy and return. Typically, this means coupons, discounts, special offers, and vouchers for other Web services, sometimes with other E-tailers at cross-linked websites. Many Web stores also increase their market reach by being part of Web banner advertising exchange programs with thousand of other Web retailers.

Personal Attention. Personalizing your shopping experience encourages you to buy and make return visits. Thus, E-commerce software can automatically record details of your visits and build user profiles of you and other Web shoppers. Many sites also encourage you to register with them and fill out a personal interest profile. Then, whenever you return, you are welcomed by name or with a personal Web page, greeted with special offers, and guided to those parts of the site that you are

Artificial Intelligence vs. Business Intelligence

| FACTORS | ARTIFICIAL INTELLIGENCE | BUSINESS INTELLIGENCE |
|---------------|--|---|
| Concept | Artificial intelligence involves human like computer intelligence. | Business intelligence involves intelligent decision making. |
| Focus | It deals with principles of statistical analysis. | It deals with machine learning and deep learning algorithms. |
| Application | It is mainly used in robotics, image recognition, virtual gaming, fuzzy logic etc. | It is used in data extraction and data warehousing techniques. |
| Scope | Its scope is associated with events of the future. | Its scope is associated by what has happened in the past. |
| Contributions | It contributes to the subjects like biology and computer science. | It contributes to OLAP, enterprise reporting and data analysis. |
| Algorithm | It uses the BFS(breadth first algorithm) and follows the FIFO principle. | It uses the linear aggression module for classifying data. |
| Drawback | It has drawbacks such as threat to privacy and safety. | It has drawbacks like improper technology and misuse of data. |
| Intention | The main intention of Artificial intelligence is to develop the machines | The main intention of business intelligence is analysing data and |