

CHAPTER 1

Introduction

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At the turn of the twenty-first century, global communication is changing the fabric of society at a rate never experienced before. The Internet, in particular, has redrawn the map of global economy. To be competitive in today's marketplace, companies need to expand commercial activities beyond national borders. The global network of electronic infrastructure has played a significant role in this expansion but the technology itself is not the factor driving the business revolution. The changes are driven by the interaction of information technology and customer demand. Customers are not only adapting to new technologies, they are demanding more and more global competition.

Electronic commerce, therefore, is arguably the most important economic trend of our time. Its presence on the Internet, in particular, is becoming crucial to the effective functioning of organisations, especially in a world where companies need to deal with suppliers, customers, partners and their own units distributed across the world. A global business industry created by the Internet is no longer a projected vision of technocrats; it is a reality. The Internet is already playing a significant role in determining corporate strategy and in creating values.

This world wide popularity of the Internet as a commercial medium is remarkable, to say the least. However, along with the creation of enormous opportunities, it is becoming clear that the Internet has also brought new perils and pitfalls. Companies who invest in this emerging market find that customers, while demanding more global competition, are still reluctant to actually buy products that are advertised on the Internet. Corporate managers are not keen on spending their workday surfing the Internet, hence the growing interest in Webcasting (i.e. the broadcasting of selected Web sites onto users' computers). Users who are still immensely interested in the Internet are becoming disillusioned with some of its early promises and are hungry for a more balanced perspective on what the Internet can do for them, both in the business and the social arena.

In our earlier book, *Doing Business Electronically: A Global Perspective of Electronic Commerce* (Romm and Sudweeks, 1998), we provided an overview and investigation of the major areas that are affected by the rapid adoption of new technologies in the commercial environment. Some of the issues addressed concerned buyer-seller relationships, auctions, public procurement and consumer decision making.

Doing Business on the Internet: Opportunities and Pitfalls, as the title implies, casts an objective eye on Internet commerce. We focus on questions such as: What is the role of small businesses in a global commerce that is moving from niche marketing towards international competition? What does multimedia technology imply for the next generation marketing? How can networked communities benefit from global collaborative systems? How does culture affect purchasing behaviour? How do transnational companies deal with issues of integrity and security? How can consumers be assured of privacy and security?

Doing Business on the Internet, and its precursor *Doing Business Electronically*, are intended as primary or supplementary texts for graduate-level courses on electronic commerce. The texts can also be used as support texts for courses in marketing, business strategy, management of information systems, organisational change, project management, product innovation, and international management. All of these - and more - are areas where there is a growing awareness of the key role of electronic commerce in business. In fact, one of the major advantages of these books is that they can be used by lecturers to expose students to the electronic commerce implications of their disciplines.

Doing Business on the Internet is especially important for vendors intending to develop and use a Web site for e-commerce. This book is also equally important for firms who have already developed their Web site to be informed of optimal strategies for gaining a competitive edge as well as to be aware of the risks involved.

The collection of readings on electronic commerce in this book covers three major areas of concern to businesses today: how to join the Internet revolution; how to manage the Internet revolution; and how to benefit from the Internet revolution. In addition to these areas of concern, global perspectives on the Internet revolution from both developing and developed countries are included. The geographic spread of the contributors to this book also gives a global perspective on electronic commerce with authors representing Australia, Austria, Canada, Germany, Hong Kong, Israel, Singapore, South Korea, United Kingdom and the USA

1.1. Joining the Internet Revolution

The first part of the book describes a number of issues that businesses should consider before embarking on Internet commerce, such as planning and designing marketing strategies, streamlining information flows on intranets and the Internet within and between companies, and the development of Internet-based networking strategies with suppliers and customers.

In Chapter 2, *Internet Commerce - Hot Cakes and Dead Ducks*, Dave Whiteley opens the section with an objective assessment of the vagaries of doing business on the Internet. He points out that, despite the increasing presence of organisations on the Web offering an array of commercial activities, actual sales on the Internet represent a tiny proportion of total retail sales. Using the traditional trade cycle as a framework, Whiteley defines the concerns for both novice (Internet Virgins) and experienced (Cyber Citizens) users in the electronic marketplace. One of the major

factors contributing to the small growth in sales is the concern of potential customers of the security of the payment system. In the final chapter of the book, Ook Lee shows that the issue of payment security is an even greater deterrent for people to purchase goods on the Internet in countries in which the technology infrastructure is under-developed.

In Chapter 3, Janice Burn, Peter Marshall and Martyn Wild pose the question *When Does Virtual Have Value?* Like Whiteley, the authors describe the driving force for businesses to join the 'wired world' as a mixture of fear and opportunity. However, in their search for understanding how much virtuality should be implemented within organisations, they have classified models of virtual organisations, with case studies illustrating the models in practice. The authors conclude that the driving force for joining the Internet revolution should be to add value to the organisation in the form of greater information transfer and enriched functionality; that is, the impetus should be needs based not a "catch-up" mentality.

Addressing organisations who have decided to join the Internet revolution, Ping Zhang, in Chapter 4, asks *Will You Use Animation on Your Web Pages?* Animation is primarily used by advertisers as a strategy to attract users' attention and encourage click-throughs. Studies indicate, though, that animation creates a negative reaction in viewers who seeking information only and are annoyed by the distraction. Thus a dichotomy exists between the goals of content providers and advertisers. The results of two experiments conducted by Zhang highlight the need for Web designers to assess the implications of user task load, animation colour and animation content.

Issues associated with Web development are explored further in Chapter 5, *Evolution of Web Information Systems*. The authors, Christian Bauer, Bernard Glasson and Arno Scharl, draw on the principles of Darwinian evolutionary theory as an explanatory framework for how commercial Web information systems have developed. The complex dynamics of modern companies are viewed as a business ecosystem in which different industries are interdependent, and the development of a Web information system is an evolutionary process of design, implementation, usage and analysis.

1.2. Managing the Internet Revolution

Having taken the decision to develop a presence on the Internet and engage in some form of electronic commerce, issues of management in a virtual environment need to be considered. The second part of this book explores issues such as the control of Internet use within firms, maintenance and updating of Internet related technologies, coping with security and integrity of transactions with customers and suppliers, and coping with customer and supplier feedback via internal and external Internet-based channels of communication.

In Chapter 6, *Financial Institutions and the Internet*, Christian Bauer analytically summarises the opportunities and challenges for electronic financial services. Bauer introduces an evolutionary four-stage model to guide both financial institutions and consumers on the developmental path from initial Web site to full

virtual banking. Bauer defines three components that are vital to the successful implementation and management of virtual banking systems: cost-effective electronic distribution channels; open transaction standards; and Web information systems that are adaptive to user needs.

The controversial issues of privacy and security are the focus of Chapter 7, *Protecting Sensitive Information in Electronic Commerce*. The authors, Aryya Gangopadhyay and Monica Adya, point out that while current data mining and knowledge discovery techniques are powerful tools for strategic decision making within organisations, they do not provide adequate protection of sensitive information in electronic commerce systems. The authors outline appropriate guidelines for avoiding the risk of improper access to confidential data.

In Chapter 8, *Towards Business Oriented Intranets*, Satish Nambisan takes an evolutionary approach to the growth of organisational intranets, which complements the evolutionary framework for the development of Web information systems that was described by Bauer, Glasson and Scharl in Chapter 5. Nambisan identifies four types of intranets whose characteristics are linked to three aspects of knowledge management: information access and sharing capability; expertise leveraging capability; and information relevancy control capability. Findings from a case study of two intranets within a multinational organisation highlight the need to ensure intranet implementation reflects the strategic objectives of organisations.

The issue of security is taken up again by Thomas Rebel and Wolfgang Koenig in Chapter 9, *Ensuring Security and Trust in Electronic Commerce*. Rebel and Koenig, like other contributors (Aryya Gangopadhyay and Monica Adya, Whiteley, and Lee), identify security as one the major concerns of doing business on the Internet. The German Digital Signature Act is cited as an example of legislation that endeavours to inject trust and security in open networks. Rebel and Koenig stress that, if electronic commerce is to be globally adopted, there is a need for international legislation and compatibility on the use of digital signatures.

1.3. Benefitting from the Internet Revolution

The third part of this book is devoted to ensuring that businesses that are involved in electronic commerce actually do gain some benefit. Here we focus on issues such as the implications for existing and future companies, the protection of intellectual property rights, the impact on different economic cultures, the growth of new ways of doing business, and the future investment implications for Internet business.

The question here is not only *how* to benefit but *who* benefits. A common view is that Internet commerce is contributing to the widening gap between the “haves” and “have nots”. Large corporations are growing larger; small businesses are getting smaller and disappearing. What is the future for the self-employed individual and the small business as electronic commerce expands globally? This question is addressed by Simpson Poon in Chapter 10, *Small Business and Internet Commerce*. Internet commerce was initially touted to be the tool that will enable small businesses to compete on equal footing with large firms by being able to engage in global marketing, to directly access potential customers, and to carry out

electronic transactions. The reality is, of course, more complex. Although the Internet has not brought the increased sales that were expected for small businesses, it is proving to be a valuable communication medium for improving customer relationships and an effective information transfer channel. Poon is optimistic about the future of small business Internet commerce, providing issues such as cross-border trading, government support and trust are resolved.

As Internet communication is one of the more useful components of Internet commerce, especially for small businesses, an understanding of social and cultural aspects of mediated communication is important. In Chapter 11, *Towards Culturally Aware Information Systems*, Shahram Dustdar provides a framework for integrating appropriate groupware in organisational information systems. Exploring the organisational and cultural impacts of videoconferencing, Dustdar identifies five cultural factors that need to be considered to enable people to cooperate, coordinate and communicate within and between organisations.

One of the areas of Internet commerce that appears to be flourishing is electronic contracting. In Chapter 12, *The Online Stock Broker*, Subhasish Dadgupta provides an overview the factors that contribute to its success. An important distinction between online stock trading and other online commercial activities is the fact that brokers extend credit for a period long enough for clients to make payments by cheque, thus avoiding the risk associated with using credit cards on the Internet.

A dilemma facing marketing managers in Internet commerce is how much and what information should be provided to assist consumers in making buying decisions and being confident and satisfied with the decision process. In Chapter 13, *Consumer Information Search and Decision Making in the Electronic Commerce Environment*, Rex Eugene Pereira develops and tests a model for understanding the role of query-based decision aids in consumer decision making and subsequent purchasing behaviour. Pereira concludes that consumers who have access and use such aids perceive an increased cost savings and a lower cognitive effort in their decision making process.

Michael Gurstein relates a success story as he describes an innovative use of the Internet by an isolated mining and industrial community in Canada. Chapter 14, *Fiddlers on the Wire*, is a case study of Cape Breton Island. With declining prospects, rising unemployment and aging population, Cape Breton recognised their need to boost the local economy. The problem was solved at least partially by using the Internet to market a unique resource of the Island - a pure form of Celtic music along with traditional Gaelic culture. Now internationally recognised, Cape Breton musicians have introduced a new industry and increased tourism into the community.

1.4. Global Perspectives of the Internet Revolution

The growth of electronic commerce is not, of course, uniform around the world. While organisations and consumers in countries with mature and widespread technology infrastructure are gaining access to and benefitting from electronic

marketplaces, the economic prospects in countries with under-developed information technology infrastructure is uncertain. The choice for the latter is to either to fall further behind in race for technological advantage or to leap-frog into the twenty-first century at a considerable cost to their cultural and social fabric. As Dertouzos (1999) observes, the rich will become richer while the poor stand still. In the last part of this book, perspectives on current Internet commerce trends in four countries are presented.

In Chapter 15, *Consumer Adoption of Electronic Commerce*, Gerhard Steinke provides the USA perspective. More than half of Internet users in the world are in the USA. Companies in the USA report phenomenal growth and profits. However, the imbalance of resources between countries also exists between people within the USA. Steinke defines concerns which still need to be resolved: affordability and access to all people; education and training; legislation to protect electronic contracts; security; and privacy.

Surprisingly, despite its 'high-tech' reputation, the use of electronic commerce in Israel is comparatively low, according to Avi Schechter, Magid Igbaria and Moshe Zviran. In Chapter 16, the authors analyse *Electronic Commerce in Israel*. A research model is used to examine and evaluate Internet sites in Israel on two dimensions: site characteristics and user satisfaction. The authors define a three-stage evolutionary development of Web sites from preliminary penetration to full integration in a company's sales and marketing strategies. This developmental model shares similar features with Christian Bauer's four-stage model in Chapter 6.

In China, despite government attempts at limiting access to the Internet outside the country, electronic commerce is growing rapidly. In Chapter 17, *Electronic Commerce in China*, Ted Clark describes the interplay of politics, society, culture and economy as electronic commerce is adopted and expanding. Initially, the government had to consider the implications of the choice between liberation and control. Fearing pollution of national ideology from foreign countries, the government attempted to restrict access local sites only. However, the appeal of economic modernisation and commercial growth in a global economic has lifted most restrictions. Even though there are an estimated 2.1 million Internet users in China, the development of the consumer market is slow. Whereas security and privacy issues are restricting consumer market growth in other countries, the slow uptake in China is due to cultural and economic reasons.

Compared to China, the growth of electronic commerce in South Korea is not as optimistic. Ook Lee provides an insight to the problems in South Korea as he describes *An Action Research Report* in Chapter 18. Lee addresses three problem areas in a country with a less-developed national information technology infrastructure: how to create a sustainable electronic commerce venture; how to conduct marketing for an electronic commerce venture; and how to establish a workable payment method. Using an action research methodology, Lee investigates an effective advertising tool for Internet marketing. The results of his study indicate that, despite negative consequences due to legal and ethical reasons, direct e-mail advertising is the most feasible. By far the strongest deterrent to consumer market

growth in South Korea, a country in which few people use credit cards, is a payment method that is complex and risky.

1.5. Future Trends

Electronic commerce is not about interacting *with* computers, it is about interacting *through* computers (Ishii et al., 1995). The Internet revolution is not powered by technology but by people using the technology. Technology is the catalyst, not the cause, of a redefinition of power. New information and communication technologies have given rise to transcaptialism; that is, companies that have multinational ownership, management and control in a global economy. The opportunities for economic growth exist but it is hoped that the pitfalls described by authors in this volume are taken into account as you consider doing business on the Internet.