

**Stuart Barnes**  
**Brian Hunt**

# **E-COMMERCE & V-BUSINESS**

**Business Models  
for Global Success**



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# E-Commerce and V-Business: Business Models for Global Success

Edited by Stuart Barnes and Brian Hunt

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Butterworth-Heinemann  
Linacre House, Jordan Hill, Oxford OX2 8DP  
225 Wildwood Avenue, Woburn, MA 01801-2041  
A division of Reed Educational and Professional Publishing Ltd

 A member of the Reed Elsevier plc group

First published 2001

Reprinted 2001

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**British Library Cataloguing in Publication Data**

A catalogue record for this book is available from  
the British Library

ISBN 0 7506 4532 6

<p>For information on all Butterworth-Heinemann publications visit our website at <a href="http://www.bh.com">www.bh.com</a></p>
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Typeset by Florence Production Ltd, Stoodleigh, Devon  
Printed and bound in Great Britain

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# Preface

## Putting the 'e-' in business

It is increasingly becoming an understatement to say that the Internet and related technologies are changing the ways in which we live. Most definitely these technologies will affect our lives in ways we cannot yet even imagine. Indeed, if the Internet pundits are correct, few areas of our lives will remain untouched (e.g., see Negroponte, 1995; Tapscott, 1997).

One of the most significant changes promises to be in the way in which we conduct business. From being primarily a resource for the rapid and secure communications of the scientific and military communities, the Internet and related technologies are developing into the communication systems of choice for a variety of business activities in a diverse range of industries (e.g., see Graphics, Visualization and Usability Centre, 1999; Nua, 2000). For many, if not most, firms these new developments are both fascinating and frightening. Fascinating because they have the power to accelerate the rate of change in companies that adopt them. Frightening because companies who ignore these growth opportunities will fall behind in the competitive race for customers.

Andrew Grove, as founder and chairman of Intel, is quoted as saying: 'In five years' time all companies will be Internet companies, or they won't be companies at all' (Symonds, 1999). This may or may not be an exaggeration but, for many companies, this is old news; they have seen and embraced the future. However, for other companies who may still be debating issues at board meetings, these words may be some of the last clarion calls to act. It is not expected that there will be league tables of 'Internet companies' and 'non-Internet companies'. The facts of the matter are that companies who are adept at doing business electronically will have a distinct advantage. They will seize the greater share of customers, suppliers and profits from companies who are less effective, possibly rendering existing business models obsolete. Some of these successful e-businesses – the real threats to corporate complacency – haven't yet been founded; others may be on the threshold.

One of the major aspects of recent business transformation is in the advance of electronic commerce (e-commerce or EC). In simple terms, electronic commerce refers to transactions taking place over electronic

networks, particularly the Internet. Such developments, especially in business-to-consumer markets, have received high coverage in the media. Firms in the online book trade, auction houses and online stockbrokers are memorable examples. In these sectors, trade is more than doubling every year. Moreover, other types of EC are also growing fast: revenues in business-to-business EC will grow from around US\$200 billion in 2000 to more than US\$800 billion by 2003 (*Financial Times*, 1999).

However, the impact of the Internet goes much deeper. There is no doubt that electronic commerce is changing the way that businesses behave. There is now recognition that becoming 'wired' goes much further than this, and ultimately will change the fundamental nature of what businesses are and business relationships (Symonds, 1999). Whilst most big firms involved in EC have focused on establishing a new and potentially very efficient distribution channel, they have failed to utilize the full capabilities of EC, which go beyond online orders. One of the most important shifts is likely to be away from the traditional idea that any business is more or less a freestanding entity, which requires significant intellectual and cultural changes in order to succeed (Chesbrough and Teece, 1996).

A key concept that has emerged from the synergies between new technological developments and changing paradigms of corporate culture is the virtual organization. Although numerous aspects are considered important in the definition of a virtual organization, it essentially involves virtual business (or v-business) relationships in which partners share complementary resources and technologies to achieve a common goal, such as creating a product or service (e.g., see Siebel and House, 1999). Confronted with a continuously changing competitive environment – owing to issues such as globalization, rapid technological change and shifts towards mass customization and improved customer service – this new and flexible organizational model has provided an attractive proposition to organizations entering the twenty-first century.

## Features of the book

This book explores these two important issues, electronic commerce and virtual business, in some depth. Although the literature around electronic commerce and virtual organizations has developed to some extent independently they are, as we shall see, inextricably linked. This text has arisen from extensive investigation into the impacts of such important concepts upon business, each highly dependent upon recent technological developments. It has also arisen from a personal review of the available literature on this and related topics, based on our own experience, and in the context of recent developments in the field.

While the book will hopefully be of interest to executives who are concerned with some of the many complex and interrelated issues associated with managing e-commerce and virtual organizations, its primary audiences are senior undergraduates and Masters students studying for business-related degrees. Students who are about to begin research in

this area should also find the book of particular help in providing a rich source of material reflecting leading-edge thinking.

The collected papers in this book illustrate the wide variety of business opportunities afforded by e-commerce and virtual business. They describe and discuss the important issues that follow in the wake of an organization deciding to pursue consumers electronically and organize its operations virtually. The authors in this text have written most recent and emerging research. We have chosen authors whose work sits well within the framework of the book and which brings in a good balance of theory and practical issues.

In the development of this book we solicited articles from authors worldwide. In so doing our purpose was two-fold. First, we wanted the content of this book to have a worldwide appeal. Except for a handful of countries where political considerations are paramount, the Internet is a truly global phenomenon. We wanted our selection of authors to reflect this. Second, we wanted to present the different perspectives brought by writers from different parts of the globe.

It is, of course, impossible to cover all aspects of these emerging topics. Our focus has been on attempting to cover some of the more recent and possibly more important aspects, and from a management perspective. The implications are that whilst technological aspects are covered in some detail, this is always in a mode accessible to the manager.

## Structure of the book

The structure for this book reflects the two important topics upon which our discussion is focused. Thus, we have organized the book into two sections.

### ***Section One: Recognizing the potential of e-business***

This first section examines the nature and implications of doing business electronically. To some extent, this involves looking at some of the evolving business models that enable firms to take advantage of this phenomenon, particularly in business-to-consumer markets. Indeed, there is strong recognition that electronic commerce changes the 'rules of the game'; being successful in the online environment involves rethinking many aspects of the organization such as strategy, structure, processes, applications and products. The theory in this section is strongly supported by recent case studies and empirical evidence.

### ***Section Two: Shaping the virtual organization***

This second section extends some of the thinking from the first section. In particular, it explores new and emergent business models for flexible organizing in business-to-business environments. Such models are almost inevitably facilitated by recent technological developments. In a turbulent business world, alliance, co-operation and sharing between



organizations can be a valuable source of competitive advantage. However, creating a dynamic and synergistic organizational form is a very complex undertaking. To provide some direction, this section critically examines in detail the nature, possibilities and limitations of this type of organization. Again, the analysis is interwoven with original case study and other empirical material to consolidate and support the arguments given.

In order to further elaborate on the content of the book and the range of issues covered, each part will now be described in greater detail.

As indicated above, Section One is entitled *Recognizing the potential of e-business* and aims to provide a solid grounding in and understanding of the contemporary e-business environment. The first chapter is entitled 'Business transformation on the Internet'. This chapter reports the results and implications of an ongoing collaborative study of large global organizations conducted by the European Institute of Administrative Affairs (INSEAD) and the Haas School of Business. The research takes a strategic perspective and uses an adapted strategic marketing framework to explore how the Internet is transforming the market space. At the apex, we see a few select exemplary organizations that have radically transformed their business practices to take advantage of e-commerce. However, it is clear that most large corporations have a long way to go in order to exploit the unique transformational potential of the Internet. The results suggest that firms are slow to change their business models; most companies are either simply treating the Internet as a publishing medium or shifting existing business models into the online environment. Customization stands out as one important area of underdevelopment. As such, some large firms may be at risk from agile new entrants such as have been witnessed in some sectors. Interestingly, this global research suggests that corporations in European and Asian markets are not far behind their American counterparts.

The second chapter examines one aspect of business transformation in more detail. In particular, 'Online delivered content: concept and business potential' explores a set of products and services that are likely to become a significant component of online trade. The nature of the Internet medium means that certain materials, including a variety of data, information and knowledge, are likely to be an important aspect of online trade. Observers of recent Internet development and applications will notice, for example, a growing number of providers of news, magazines, music (and other audio), video, educational materials, searchable databases and expertise. This chapter attempts to position electronic trading in online delivered content within the wider field of EC. It identifies its distinctive characteristics compared with other forms of trading content and compared with electronic trading in physical goods. Subsequently, important peculiarities are identified and analysed. Based on two cases of medium-sized specialized publishers the benefits and problems of moving into the business of electronic trading in this area are discussed.

Picking up on the strategic implications of a new industrial order, Chapter 3 looks at 'Digital intermediation in electronic commerce: the eBay model'. Through the Internet, the shape of markets and industries are changing fast. These new markets are very different from traditional,

physical markets and so new strategies and business logic is required. This chapter introduces a framework for understanding circumstances under which information technology (IT) innovations for EC change firm-level strategic choices, and the economic forces behind these choices, in Internet market competition. Drawing on a variety of recent examples, it examines a number of important concepts for understanding the role of the digital intermediary and explains the 'IDR cycle': a recurring pattern of 'intermediation', 'disintermediation' and 'reintermediation'. In particular, it describes some of the conditions for reintermediation: where a disenfranchised player is able to compete again by combining technological innovation with leveragable, specialized assets. The chapter also reveals a number of competitive strategies used by firms in the IDR cycle with varying levels of success: partnering for access, technology licensing, partnering for content and partnering for application development.

Chapter 4 is entitled 'E-business and the intermediary role of virtual communities'. Building lasting relationships with customers and between stakeholders is considered an important aspect of electronic business. Therefore, this chapter examines in detail an important business model in which such relationships can be built – virtual communities. Electronic or virtual communities are rapidly evolving on the Internet as marketers have begun viewing them as an online strategic initiative to further consumers' consumption experience. Indeed, marketers see significant selling potential in leveraging virtual communities and, as a result, most virtual communities that are currently evolving on the Internet have been initiated, organized and moderated by for-profit organizations rather than by community members or third-party organizations. Such for-profit communities vary significantly from other types of virtual communities. This chapter examines the various types of virtual communities and explores conditions under which business-oriented virtual communities can evolve successfully. From an economic perspective, it examines the role of virtual communities as intermediaries in exchange relationships among community members and between community members and other interest groups such as marketers and advertisers.

In the complex world of online trade, where community relationships may be important and your nearest competitor may be only a mouse-click away, providing a high quality e-commerce offering is critical. Chapter 5, 'Measuring the effectiveness of e-commerce Web sites', provides some assistance in understanding this important issue. The chapter considers a technique developed for evaluating e-commerce Web offerings – the Web Assessment method. In particular, this approach recognizes the changing nature of sales and marketing activities as supported by the Internet and related technologies. Thus, it sets about identifying, from a consumer perspective, possible success factors that differentiate a Web site from similar offerings. The Web Assessment model is based on three market transaction phases – information, agreement and settlement – and a special 'community component'. This last component – building loyal communities – is considered an important addition to traditional concepts. The model is tested using the classic EC first mover and business-to-consumer Web

site, Amazon.com, and this is compared with a traditional EC-enabled bookseller, Barnes and Noble.

Although much attention has been focused on the implications of e-commerce for big business, the impacts go potentially much further. Chapter 6 examines 'Business impacts of the Internet for small and medium-sized enterprises'. As the title implies, this chapter turns our attention away from big business and towards smaller businesses, a sector contributing the lion's share of jobs and export business in many economies. It examines the developing state of Internet use by small and medium-sized enterprises (SMEs), and focuses on the impacts brought about by the introduction of the Internet. Specifically, it provides a model, derived from a long-term research programme, which enables a structured approach to impact analysis. The model is demonstrated using a number of SME case studies from the USA and the UK.

The first section of the book is brought to a close with Chapter 7, 'Industry transformation in e-commerce: Web diffusion in travel agencies'. This looks beyond impacts on the individual firm towards industry-level transformation. It is clear that business-to-consumer applications of the Internet are playing a role in restructuring some traditional industries, shifting the balance of profitability. This chapter describes the impacts of the Internet on the travel industry – predicted to be one of the largest online markets – analysing the changing role of travel agencies in this new environment. Travel agencies are being subjected to increased competition from numerous areas of the travel distribution network. Traditional players in the network, such as airlines and travel wholesalers, are beginning to market products directly to the consumer. New virtual travel agencies, which exist only on the Internet, are also providing new sources of competition. Nevertheless, although the Internet poses a significant threat to travel agencies, it also provides a major source of new opportunities, such as improved accessibility and service. Research findings from Australia suggest that a large proportion of travel agents do in fact use the Internet. However, it is not being exploited to its full potential, as a result, among other things, of a lack of strategic planning and vision. The result is likely to mean varying patterns of success, with failures and industry leaders alike emerging from this new playing field.

Section Two, *Shaping the virtual organization*, takes the discussion a step further to examine the impacts of the Internet and related technologies on the creation of agile business models and the development of strategic business-to-business relationships. As a starting point, Chapter 8 examines the notion of virtual organizations from the perspective of their apologists. It provides a detailed definition of virtual organizations and outlines their main characteristics and functions. This provides a useful, overarching framework within which to consider these new business models in the remainder of the section.

Chapter 9 examines 'Interorganizational systems to support strategic collaboration between firms'. Before launching into a detailed analysis of virtual organizations, it is important to understand some of the foundations of establishing business-to-business relationships using network technologies and applications. This chapter recognizes that

interorganizational systems can play an important role in strengthening and stabilizing existing relations between firms but, moreover, can also facilitate new collaborations between firms in strategic areas. Based on intensive case studies and survey work, it examines some examples of strategic collaborations using such systems and, in particular, conceptualizes the barriers to the success of interorganizational systems. The barriers are not only technical but also cultural and political, such as sharing sensitive business information, the integration of business processes across firms, the co-existence of competition and collaboration, and the control of one firm by another. From a strategic perspective, these issues are integrated into a three-layered model that is useful for understanding such a complex phenomenon.

The following chapter, 'Structure, strategy and success factors for the virtual organization', provides a detailed theoretical and practical explanation of the virtual organization. It begins by providing a useful discussion of the concept, extending and refining the definition given in Chapter 8. Furthermore, it draws out a number of critical and interrelated success factors for the virtual organization, including shared purpose, risk, trust and mutual benefit. Also key to the discussion are the nature of innovations and the information and knowledge flows involved. Interestingly, the chapter demonstrates, by way of some original case studies, several of the possible types of virtual organization structures/strategies: co-alliance, star-alliance, value-alliance and market-alliance. The empirical material is used as a strong platform upon which to consolidate the theoretical ideas given.

If the virtual organization is to be adopted as a viable business model, it is important to have suitable frameworks to provide management support for this new organizational form. Chapter 11 provides such a framework. The chapter explores how the Internet and related technologies enable the virtual organization to link and co-ordinate activity with a wide variety of business partners. As a precursor, the modular virtual organization is introduced; modularity is proposed as an additional means for the virtual organization to achieve a standardized organizational structure and behaviour to allow for interchangeability and compatibility of the partners and business processes. However, such ideas are fraught with complexity and modular organizations in action are difficult to manage. Therefore, to show how these ideas can be put into practice, a management support tool called Modular Network Design (MND) is introduced. This tool supports managers of a modular virtual organization in four key steps. The applicability of MND is illustrated with a case study at KLM Distribution, a firm at the centre of a globally operating virtual organization; the case study describes how MND supports the management of the modular virtual organization and contributes to better insight in the planning of customized transport orders.

Chapter 12 shifts the focus of attention towards the issue of knowledge networks in virtual teams. In particular, at this unit of analysis, the management considerations relevant to creativity and change are explored. The chapter begins with an examination of trends in organizational drivers – internal and external – that leads to a characterization

of virtual teamwork applicable to many organizations in traditional sectors. The requirement for radical change in business practice is set against a backdrop of established work practices, organizational knowledge and human factors. Thus, a human-centred approach is adopted, and illustrative examples of the applications of virtual teams are drawn from several real organizations: distributed marketing in steel manufacture, workflow management in a regional construction services department, and the development of a virtual environment for team-based design activity in a marine engineering organization. Consequently, some factors leading to a successful transition to virtual working, and their general applicability, are considered.

Electronic procurement (or e-procurement) is currently considered a very hot topic in business-to-business EC (e.g., see Kalakota and Robinson, 1999). Using the Internet and related technologies in this area has the potential to create huge returns. Chapter 13, 'The contribution of Internet electronic commerce to advanced supply chain reform: a case study', examines some of the potential benefits of this important area of development. It focuses on the use of business-to-business electronic commerce in the retail and general merchandising industry. In particular, it examines the use of EC by Australia's leading supermarket chain, Coles Myer Limited. Traditional interorganizational systems such as electronic data interchange (EDI) pose a number of problems for large retailers like Coles Myer, e.g., regarding the achievement of 100 per cent EC compliance from small, unsophisticated suppliers. Subsequently, this poses a barrier for large distributors and retailers in achieving supply-chain reform; non-compliance hinders advanced replenishment and distribution techniques, which require strong co-ordination and 100 per cent EC compliance from involved parties. However, new Internet-based EDI products have made a considerable contribution towards a viable solution for the limited capabilities and requirements of small suppliers. In addition, this has provided a powerful platform for the transformation of supply chain relationships.

Chapter 14 takes an industry perspective to the impact of virtual organizations. This chapter illustrates how the principles of virtual organization are being applied through three examples of virtual businesses in the information technology (IT) sector in Germany and Switzerland. The choice of this industrial sector is most pertinent, centring on the use of information systems (IS) for virtual organizing. In sectors with a tradition of collaborative arrangements between companies – such as the automobile industry – proprietary platforms and systems have emerged to meet the need for inter-company information processing. By contrast, similar changes in the IT sector are taking place at a time when, worldwide, open platforms are becoming available for the first time. The Internet is the precursor of these. To advance understanding in this emergent area of virtual organization, the case studies are analysed using a 'virtuality' framework and the role of IS is explicated.

Finally, the book is brought to a close with a theoretically informed critique. 'Recognizing the limitations of virtual organizations' takes a broad view of the virtual organization phenomenon. It examines some of the possible problems of this developing organizational form. Key to

the argument is the idea that organizations comprise a set of resources and that knowledge, understanding and communication (which are among the most important resources available to the organization) are tacit, situated and local and cannot simply be located, packaged and made available to virtual partners. Nevertheless, there is a clear role for the virtual organization but its scope is perhaps much smaller than its advocates admit.

As you will now be aware, e-commerce and v-business are diverse and complex subjects. They are not simply concerned with technological issues, but incorporate aspects of strategic management, marketing, operations management and behavioural science, amongst others. Such an interdisciplinary perspective is critical if the subject domains are to be understood fully. Recent examples of e-commerce offerings that overestimate technology and underestimate consumers exemplify this point (e.g., Boo.com, the high-profile online fashion retailer which went into liquidation in May 2000, failing to reap returns from its extensive advertising and expensive high-tech Web site). For this reason, as you have seen, we advocate a broad management viewpoint. The issues debated here are far too important to be left to technologists; although technology is an important enabler, the vision, strategy and management of the transition to bold new business models lies squarely in the hands of managers. To reap the real rewards of e-commerce and v-business, management competence is crucial.

We hope you find this book of interest and that it raises some important issues relevant to consideration in your study, research or organizational context. As you do so, we all take one more step towards the much-anticipated 'digital economy'.

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## Section One

# Recognizing the potential of e-business

'If you don't see the Internet as an opportunity, it will be a threat' (Tony Blair, UK Prime Minister; *Financial Times*, 1999a). The Internet and related technologies provide tremendous new possibilities for doing business, but this challenging new environment requires a fundamental rethink of traditional strategy and business models (Evans and Wurster, 1999).

In business terms, one of the most important developments to arise from the current swathe of technological advances is electronic commerce. Simply speaking, e-commerce refers to trading electronically: transactions involved with buying and selling products, services and information over a network (Turban *et al.*, 2000). However, the implications are more far-reaching; the interactivity and connectivity of the new electronic medium have huge potential for many other aspects of business operations, including knowledge and information flows, improved quality of service (Seybold, 1998), and distribution of digital products. Thus, perhaps a more appropriate term for this phenomenon is electronic business (or e-business), first coined by IBM. Lou Gerstner, IBM's CEO, refers to e-business as: '... all about time cycle, speed, globalization, enhanced productivity, reaching new customers and sharing knowledge across institutions for competitive advantage'. In this text, e-commerce is considered in its broadest sense and the two terms are often used interchangeably.

Electronic commerce is not a new phenomenon by any means, a point that is sometimes conveniently overlooked by media hype. The use of electronic networks for trade began in the early 1970s in the financial sector. Some of the first applications involved electronic funds transfer (EFT) – the movement of money between financial institutions via telecommunications networks. This fast, paperless and secure form of electronic commerce is now the only practical way of handling the massive volumes of transactions generated daily in the banking industry. Even automated teller machines (ATMs), beginning in the 1980s, are a