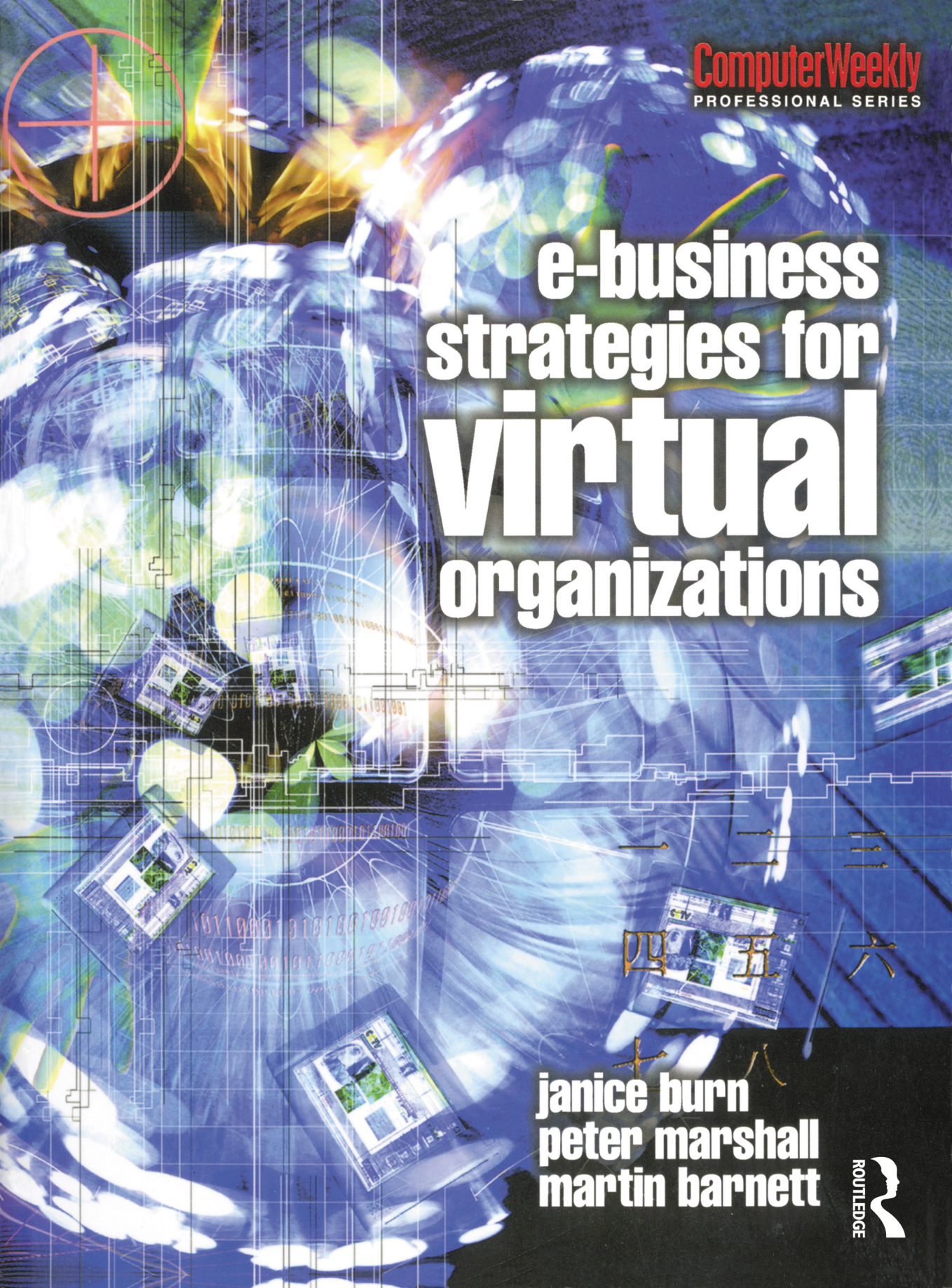
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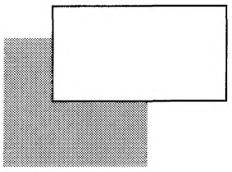

e-Business Strategies for Virtual Organizations

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There are few professions which require as much continuous updating as that of the IS executive. Not only does the hardware and software scene change relentlessly, but also ideas about the actual management of the IS function are being continuously modified, updated and changed. Thus keeping abreast of what is going on is really a major task.

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Authors' Preface

There are dozens of books and articles arriving monthly on e-business, the Internet and telling you how to make money in the new economy. Why is this book different, and how does it stand out?

This book is not:

- a recipe for success on the Internet;
- an advertisement for a consultancy's services or methodology;
- a guide to getting venture capital for a dot-com enterprise; or
- a guide to taking a new e-business enterprise public.

This book is:

- a critical explanation of what we mean by e-business;
- a means of understanding the vital concept of virtual organizing;
- a set of strategy approaches to thinking for and about the new economy;
- helpful templates for organizing workgroups and teams thinking about change.

While it is possible to address our topics at many levels and with varying degrees of abstraction, we have chosen to pitch our text at the level of the practising manager. Our reader will have a good grounding in business concepts and some understanding of the reach of technology without needing specialist technology

or network knowledge. Academics and managers at many levels are applying themselves to the areas we encompass in this book, therefore we are obliged to restrict our focus and level – and we have chosen that appropriate for graduate managers, or students choosing to study at a university at Master's level or above. While we welcome readers from outside this group, we cannot inflate the text to explain below a certain level.

We open by looking at how new information and communication technologies affect business activities – generally referred to as the new economy, or the Internet economy. To assist us in this, we look at the significant restructuring of organizations resulting from e-business. We introduce the core concepts and argue that this new business paradigm is one where core business processes may need to be rethought and redesigned, new organizational forms and interorganizational forms may need to be developed and where the emphasis will be on collaboration rather than competition within the virtual market.

Having set the scene, we move on in Chapter 2 to examine relevant aspects of the Internet, intranets, and extranets, which facilitate networks both within and between organizations. We note that this results in fundamental changes and rethinks to potential and satisfactory organizational structures, and also to the way in which organizations position themselves within their environment to compete and/or cooperate with other organizations.

From this we derive a workable notion of virtuality, and of the virtual organization, defined as 'an entity which comprises a combination of different companies or individuals that have combined to complete specific projects or business propositions and development'. This core notion will be referred to and adapted throughout the following chapters.

The idea of business models is introduced and examined in Chapter 3. Virtual organizations obviously have a need for business models, which are different from the traditional, but there is no one single business model that is appropriate to all forms of virtual enterprise. Different organizations, we argue, require different business models. These will reflect the extent and strength of their interorganizational links within their networked alliances.

In the most basic sense, a business model is the method of doing business by which an organization can best sustain itself – which in most cases means generating revenue. The selected business

model will therefore be that which spells out how the organization positions itself within the value chain in order to make financial return. For this reason we introduce variations of virtual organizations early on so that readers may select appropriate forms for their economic sector or enterprise, and work through later chapters with this in mind.

Selecting the structural and strategic forms of business model will effectively set the strategic agenda for the virtual organization and define the relationships, roles, business processes and partnerships which should be exploited. Business models will be reintroduced throughout the text to extend and expand on the early exposition.

We go further, in Chapter 4, to look at the implications of interconnectedness and decreasing communications costs. In particular, we focus here on approaches to strategy formulation for virtual organizations or strategic business networks, commenting on the need for some changes in emphasis in strategy formulation, given the realities of contemporary business environment. In this context we introduce the new term, if not entirely new construct, of 'coopetition' to describe the information and resource – sharing strategies that are replacing naked aggression and competition in many business contexts.

At this stage, in Chapter 5, we have sufficient background and common terminology to examine in depth the first three underlying and major constructs that make sense of an electronic business community:

- internetworked markets;
- the Internet enabled supply chain; and
- interorganizational systems.

These concepts are complemented, in Chapters 7, 8, and 9 by the following related terms:

- integrated organizational systems;
- intelligent knowledge-based systems; and
- information-based business architecture.

But at this stage, we digress from overarching issues to integrate another stream of concern, namely that of smaller businesses and what's in e-business and globalization for them. There is much concern, in economies around the world, that globalization, alliance formation and e-business online exchanges will threaten small or locally based organizations. From a small French farmer to an Indonesian pepper merchant, legitimate

concern is expressed at the potential for e-business to homogenize the world and drive out opportunities for small entrepreneurs and family businesses.

Chapter 6 specifically addresses the issue of what the new economy means for the small or medium-sized enterprise. In this chapter we suggest and explain how the availability of the Internet and web technologies provides unique advantages for SMEs to build effective global infrastructures in at least three ways:

- internet-based infrastructures are relatively cheap – requiring significantly reduced capital investments over proprietary ones;
- they provide an ever converging and rich environment for effective business networking and interorganizational process management; and
- they provide SMEs with access to a huge mass of consumers through e-business.

This means that e-business is an extremely attractive option for most SMEs, although they come bundled with admitted threats. The challenges these opportunities and threats present are not helped by the general lack of clearly defined frameworks for analysis of the entire process of strategy building, implementation and management with respect to this emerging global information economy.

This chapter attempts to address the problem by providing a holistic framework for the study and design of global information infrastructure within the organizational context of SMEs. With such analytical tools and specific e-business strategies SMEs could and should capitalize on the opportunities offered in the electronic marketplace. The framework is supported by a number of international case studies.

We strike a more esoteric note in the following chapter, as we consider the role of knowledge as capital and the value of knowledge assets to the organization. Strategies for knowledge management are reviewed and linked with strategies for change. This approach introduces virtual encounters, virtual sourcing, and virtual expertise and knowledge. Finally the issues or actual execution of strategies are considered and suggestions are made for the development of an action framework.

By Chapter 8 we are in a position to appreciate that an organization that is responsive to change and capitalizes on new

alliances, better customer and supplier relationships and new markets, products and services needs to have a different strategic planning and management process in place which is associated with an effective value measurement system. We discuss these accordingly, noting where existing static value measurements based on financial returns do not reflect the holistic view of an enterprise moving towards virtual organization.

Our next topic brought to the mix is that discussed for many years under the term 'outsourcing'. We have established that, essentially, the virtual organization is an opportunistic grouping of collaborating organizations, each of which focuses on a set of core competencies or capabilities at which it excels. Traditionally the use of suppliers to provide essential processes is referred to in IS as outsourcing.

A general but acceptable definition of this concept runs: outsourcing is a decision taken to contract out or make available the organization's assets, activities and/or staff to a third party supplier. This third party, in return, provides and manages these assets (for payment) over a contracted term.

This result may be a fluid network of firms changing according to circumstances and needs. Such a network of firms is likely to be created and sustained through the processes of outsourcing and partnering/alliance formation – a virtual organization is born.

In this context we provide outside views to complement those of our own that are developed throughout. It will be helpful at this stage to look at these models or visions for the future, looking at the role of both outsourcing and partnering or alliances, and the close relationship of both these to virtual organizing and the virtual organizational form.

Moving into a fairly complex area now, as many of the threads of this book are brought together, Chapter 10 considers the issues involved in integrating front-end and back-end processes, and specifically the role of enterprise resource planning (ERP) systems as back-end support aligning with customer relationship management (CRM) systems at the front-end.

We look at the business value chain as it is affected by the new technologies; we at the consumer relationship in flux. And we examine the implications of changed communications for employee relationships. We address environmental change and organizational performance issues and the factors that empower

employees to support large-scale change. In particular we look at the motivational factors influencing employees to initiate change in the face of these new realities and the implications for management of both IT and non-IT employees in the learning organization.

Finally we take a grander view, turning to the question of how and whether today's business-centric, e-business organizational forms will evolve into customer-centric e-communities.

In Chapter 11 we review cultural influences on organizations and information technology applications. This is expanded into the development of online communities where a shared culture of common practices is a key factor in effective development and maintenance.

Finally, the whole issue of global expansion is placed under the spotlight and the implications for the future are examined. What will happen? The choice is yours, and to make a choice that reflects your needs, you must be informed. Thank you for allowing us to share our thoughts, we look forward to any responses you may have to this text.

Janice M. Burn
Peter Marshall
Martin Barnett

1 e-business and the virtual organization – a new rationale for 21st century organizations

Though of real knowledge there be little,
yet of books there are plenty.
(Herman Melville, *Moby Dick*)

1.1 Introduction

As we enter the new millennium, there is a general feeling that there is a new social and economic reality, largely based on new communication technologies. We cannot open a book or magazine without seeing assertions, more or less supported by evidence, that we are entering a new age. In particular, this applies to the world of business, transformed as it has been by a number of powerful forces such as globalization and the advent of the Internet. There is a sense that the world of business is significantly different from even 20 years ago. This is exemplified by the prevalence of terms such as 'new economy', 'information economy', 'digital economy' and so on. These terms suggest, rather imprecisely, that we have a new business reality, and that the role of IT and the Internet are significant, or perhaps even defining features or characteristics of that new business reality.

There are two broad constructs that help to structure and make some sense of this new reality if they are defined and thought about clearly: namely the 'new economy' and the 'Internet economy.' In this chapter we shall introduce these notions as fundamental constructs for the rest of the book. There is a sense in which trends such as globalization and the effective use of increasingly more powerful and reliable IT have transformed the national economies of the USA and Europe to such an extent that when referring to, say, the contemporary US economy, we could meaningfully talk about something called the 'new

economy'. A separate construct refers to the economy that is clustered around the Internet and the new electronic commerce or e-business phenomenon.

Finally, there has been a significant restructuring of organizations since e-business intensifies collaborations among multiple organizations with several complex, economic, strategic, social and conflict management issues as well as major organizational and technological factors. This new business paradigm is one where core business processes may need to be rethought and redesigned, new organizational forms and interorganizational forms may need to be developed and where the emphasis will be on collaboration rather than competition within the virtual market. Driven by such phenomena as the World Wide Web, mass customization, compressed product life cycles, new distribution channels and new forms of integrated organizations, the most fundamental elements of doing business are changing and a totally new business environment is emerging. This form of 'virtual' organization will have a considerable impact on all aspects of business strategy in the 21st century. This chapter examines these issues in turn and sets the scene for the remaining chapters in the book as we explore the nature and rationale of the virtual organization, virtual markets and strategies for coopetition, strategies for designing, transitioning and managing the virtual organization.

1.2 The new economy

The notion of the new economy is somewhat elusive to define. There is speculation that the recent sustained boom in the US economy as instanced by increased corporate earnings and profits, low unemployment, relatively high productivity, low inflation and an absolutely soaring stock market, has led to that economy being 'new', in the sense that some of the old economy rules and principles no longer apply, at least with the same force. Among such speculation is a view that stronger productivity growth now allows the US economy to grow faster without inflationary pressures. There is also the view that in the short run a trade-off between inflation and unemployment has changed so that low unemployment and low inflation can coexist. Other speculation looks at the sources of growth in the US economy and identifies factors such as computerization and globalization as driving forces changing the nature of the old economy. Indeed to some writers, IT has

an especially important transformatory role. Shepard, writing in *Business Week*, claims that:

Information technology . . . is, in short, a transcendent technology – like railroads in the 19th century and automobiles in the 20th century. (Shepard 1997)

Mandel, another *Business Week* writer, claims that the:

New economy – so far propelled by information technology – may turn out to be only the initial stage of a broader flowering of technological business and financial creativity. (Mandel 1998)

Connected to the pre-eminent role given to IT and its potentially transforming power, has been the important role given to knowledge as a new form of capital, and the role of knowledge management, as well as research and innovation as wealth creating factors.

Another element of the new economy construct is the increasingly important role of the service sector. We can choose to see the evolution of economies from an agrarian-based economy through an industrial economy through to a service economy and then on to the emergence of an experience economy. Each economic stage has all the elements of preceding and succeeding stages, but the focus and emphasis are different. The contemporary economies of the developed world can be seen to be new in terms of their emphasis on producing and delivering services and the emerging idea of staging complete experiences for consumers. Of course, modern, new economies examined along this plane are only different in degree from the older economies of 20 years ago, but this difference in degree could be seen as a 'strand of newness' in the 'new economy'. Thus we see that the nature of the new economy has many and varied aspects of novelty, and these are given different degrees of emphasis by different thinkers, as we shall see throughout this book.

Economists are examining the new IT-based organizations and the economic world they shape, but have come to no agreement yet on whether there are new economic laws to be discovered, or whether the old economy macroeconomic principles and technical relationships still apply. For some it is a given that, while technology may change, economic laws do not. Perhaps it is too soon to hold any definite views on this. As we shall see, the potential for new business and organizational forms resulting from a still-developing set of technologies has yet to be properly mapped out, and we are all still learning.

1.3 Is the 'new economy' really new?

Well, there are new features and emphases, but the basic macroeconomic principles seem unaltered. The mass psychology of a new economy is certainly there, with some very real non-psychological effects such as soaring stock prices and firms who continually make losses not profits being given very high stock valuations because they are 'new economy' dot-coms. However, this irrational exuberance has been seen before – for example, in the 19th century with the craze for building railways, and in the 20th century with the overvaluation of radio in its early days.

We have thus examined some of the major ideas that contribute to and thread through the notion of the 'new economy' as an economy operating on new rules and principles. This view of the 'new economy' is one that relies on the notion illustrated in Figure 1.1, of an economy transformed by IT and other factors such as globalization.

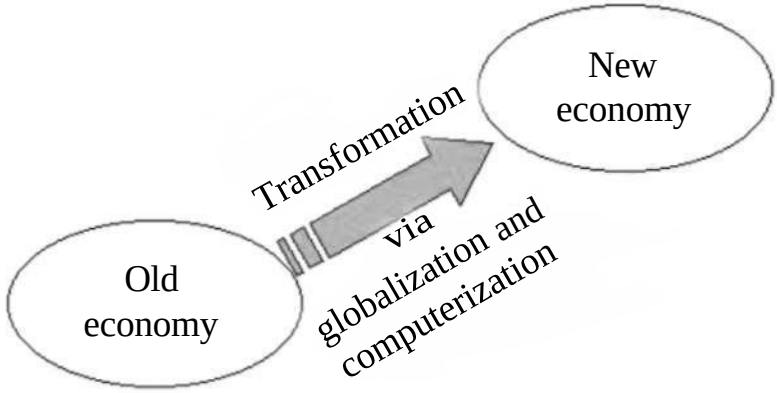

Figure 1.1

Even the terms 'information economy' and 'digital economy' are sometimes covered by the above sense of a 'new economy' arising from transformation of the old economy through various forces – IT looming large among these forces. As an example, consider Brynjolfsson and Kahin's definitions:

The term 'information economy' has come to mean the broad, long-term trend toward the expansion of information- and knowledge-based assets and value relative to tangible assets and products associated with agriculture, mining, and manufacturing. The term 'digital economy' refers specifically to the recent and still largely unrealised transformation of all sectors of the economy by the computer enabled digitisation information.

(Brynjolfsson and Kahin 2000)

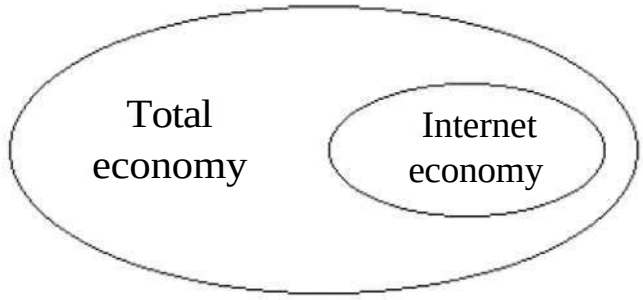

Figure 1.2

There is, however, another definition of the 'information economy', 'digital economy' or 'Internet economy'. This notion revolves around the set of Internet-based organizations, the 'dot-coms' and others involved in e-commerce. This 'Internet economy' as we shall refer to it is clearly a subset of the total economy, as shown in Figure 1.2.

1.4 Framework of e-business

The emergence of e-business has led to dramatic redefinitions of the nature of an organization. Complex business networks working together along the value chain are defined by their ability to get products to market with the widest range of consumers at the cheapest cost and fastest speed. This, in turn, has led to a completely different set of problems for the management of such structures with complex interrelationships, changing paradigms for intermediation, and an emphasis on collaborative competition. Today's business executive needs to have a framework for understanding such relationships in order to evaluate strategic opportunities in the global marketplace.

We have found that in information management projects, where there is a need to analyse or construct large systems, it is useful to structure them as a hierarchy of several levels in which the lower ones provide the support platform for the higher. In the case of e-business supporting interorganizational systems, such a hierarchy may usefully be viewed as displayed in Table 1.1.

We can use this table to view the e-business as made up of three levels:

- *technology-based infrastructure* – the hardware and software making up the ICT to deliver functionality over networks;
- *services* – all messaging activities; and

Table 1.1 The hierarchical framework of e-commerce

Meta Level	Level	Function	Examples
Products and structures	7	Electronic marketplaces and electronic hierarchies	Electronic auctions, brokerages, dealerships, and direct search markets
			Interorganizational supply chain management
	6	Products and systems	Consumer services over distance – retailing, banking, stock broking, etc.
			Information and entertainment on demand: educational services, fee-based content sites
			Supplier–customer linkages
			Online marketing
			Electronic benefit systems
			Intranet and extranet collaboration
Services	5	Enabling services	Online catalogues, directories, smart agents
			Smart card systems, e-money
			Digital authentication services
			Digital libraries, copyright protection services
			Traffic audit
	4	Secure messaging	EDI, electronic funds transfer, e-mail
Technology-based infrastructure	3	Hypermedia/ multimedia object management	World Wide Web with Java
	2	Communications utilities	Value added networks and Internet
	1	Wide area telecommunications infrastructure	Guided and wireless media networks

- *products and structures* – the provision of goods and services together with intra- and inter-organizational information sharing and the creation of electronic supply chains and marketspaces. Let us look at these in a little more detail.

1.4.1 Technology-based infrastructure

Supporting this framework are three basic levels.

The first is the global network of telecommunications networks linking public and private networks through a computer-controlled switching system. The potential for interorganizational strategies extends as far as the reach of these media. Differences in regional and national penetration of these networks is, and will be for the foreseeable future, a function of government policies, funding and control strategies together with private sector belief in their profitability in areas in which this is allowed to function.

ICT capabilities are made available for business use in two important ways. The first available system was that of privately constructed and leased networks, the value added networks (VANs). These were constructed to make available services over and above those offered by the common carriers (then almost entirely state-run and regulated monopolies, created for voice transmission), and to make a profit in the process. The second has arrived with the development of the Internet from a government sponsored and research medium into today's principal inexpensive vehicle for e-business.

The separate software-based layer of the Internet known as the World Wide Web has resulted in the possibility of a single, distributed, worldwide, hyperlinked database with password-protected and private networks (intranets and extranets) linked to it. The Web is a medium for the distribution, presentation and sale of information-based objects. As a platform-independent service it has been enhanced by recent developments in platform-independent programming languages, such as Java, further enhancing its utility. Nevertheless, it needs to be understood that as a separate and software-based layer, the Web can and may be replaced in the future by an information management mechanism that would better meet the demands of very large-scale use of the global network of networks.

1.4.2 Services

The service level provides for the transfer of messages and enabling services for business. Using a suite of protocols developed for the free sharing of information, this level is robust and inexpensive. The downside is that, unlike proprietary EDI systems, there is no inbuilt security, confidentiality, authentication and similar services demanded by commerce. This issue is currently being addressed by such means as cryptography, Internet tunnelling, and the development of protocols such as the secure electronic transaction (SET) layer issuing from credit card companies.

e-mail is the most pervasive tool of the Internet and a cost-cutting measure that is generally the first to be appreciated by business. While issues of e-mail contracts, confidentiality, evidentiary value and such like are yet to be fully resolved, this tool is expected to retain its prime position in the business repertoire.

More activity is under way in the area of enabling services: tools for searching, price comparison, customizing information delivery and receipt, together with electronic money initiatives and e-banking, are under formulation. This service area is changing too rapidly for a book to offer the latest advice: you are advised to conduct web searches on topics of particular interest. It is, however, worth briefly examining the possible implications of e-money. e-money in its various forms is expected to become a substitute for credit and debit instruments and also for bank notes and coins at considerable expense to the handling agencies such as banks, finance houses and government controlled agencies.

e-money has considerable social implications beyond this since it does not have the obvious anonymity of cash. There are also the security and legal implications and, of course, the auditing and tax implications of electronic transfers. Within the global context we must also recognize that the majority of consumers are not currently web enabled and so there may be far reaching implications for social and economic reform in the less developed countries of the world.

1.4.3 Products and structures

A lot of interest and publicity surrounds consumer-oriented applications of e-business. Companies such as Amazon (booksellers), Dell (computer retailers), CDNow (music sellers),

Discover Brokerage Direct (securities transactions) and Security First National Bank (banking services) are frequent visitors to the business and popular press. In traditional P/E ratio terms, none of these firms is exciting, yet their market capitalization during 1999/2000 suggests that Internet-based stocks are perceived, rightly or wrongly, as gaining value in other ways.

Alongside the overtly commercial sector, information for entertainment purposes (infotainment) on demand is another growing sector. From news corporations (CNN, The Times of London, etc.) to web versions of paper magazines (Hotwired) and purely electronic journals, magazines and newsletters, the Web is awash with information available in both push and pull formats. The boundaries of information and entertainment are blurring, as are those between commercial and not-for-profit sites. Unfortunately, while enthusiasm and experimentation are rampant, no clear models for success have yet emerged.

The linkages between businesses (B2B) and between business and consumer (B2C) along the traditional supply chain is perhaps clearer as well as being the fastest-growing area of e-business. This exciting area is attracting the most attention as new configurations of the supply chain model are enabled by ICT, giving rise to both the pervasive practice of implementing intra- and interorganizational networks to fashion new supply chains and to the new organisational forms which will be discussed throughout this book.

1.5 e-business

One spectacular aspect of the transforming role of IT in business has been the rise of e-business that has followed the advent of the Internet. The Internet has meant that business organizations have been connected to both other business organizations and to mass markets of consumers via computer networks. Worldwide there are over 400 million people connected to the Internet, with over 150 million of them in the USA. This connectivity has allowed goods and services to be bought and sold over computer networks. In the case of digital goods, these goods, including music, software and text, can be bought, sold, and distributed over the Internet. With other goods and services, the goods are purchased and paid for over the Internet and distributed by logistics carriers to business addresses and consumers' homes. Such online buying, selling, and paying for goods and services constitutes electronic commerce or e-business.