

Module 6

Introduction to Intranets and Extranets and Payment Gateways

Introduction

The major impact of e-commerce has been, and will be on transactions occurring between businesses, and not between businesses and their end customers (retail). Although not everyone would agree, it is strongly argued by many IS and business professionals that the tools for e-business are changing, not simply the speed with which transactions occur, but the very way in which we organise and think of those transactions. That is to say, that with the emergence of e-business, new business models are needed to describe and understand the forms that organisations take. It will become evident to you that the tools of e-business dramatically change the cost of business transactions, enable rapid, pervasive and inexpensive communication – making the gathering and provision of information less expensive and more valuable.

As e-business is a new phenomenon, many people are experimenting with all sorts of ways to use the new tools to reshape or reinvent existing businesses. Others are seeking to create new forms of business that would previously have been too complicated or too costly to implement. How do we best structure a form to take advantage of e-business? We cannot promise to answer this question for you, but we shall, in this module, introduce you to several mainstream ideas and invite you to test them out against your experience. You will be encouraged to see both intra and inter-organisational systems as opportunities for introducing IT to advantage.

All organisations exist by gathering and using information, and this is as true between organisations in the business world as it is within an organisation. Business-to-business activities, often referred to as Inter-organisational Systems (IOS), are today dominated by information technology and electronic communications. The result is an increasingly electronic business environment. E-business is the sharing of business information, maintaining relationships and conducting transactions by means of telecommunications networks. It is important to note that e-business includes the transactions between organisations as well as the corporate processes that support the commerce within individual companies.

In this module we will begin by introducing the hierarchical structure of the platforms upon which e-business is built. Then we look at the ways in which organisational form may adapt to take advantage of new strategies



based on e-commerce and at the issues in implementing IOS. Finally we look at payment gateways and strategies to prevent fraud.

Upon completion of this module you will be able to:



Outcomes

- *describe* generic frameworks for e-business and e-commerce.
- *discuss* the strategic context for inter-organisational systems (IOS).
- *review* the issues involved in IOS implementation.

Terminology



Terminology

Extranet:	A network that uses a virtual private network (VPN) to link intranets in different locations over the Internet.
Escrow services:	In the e-commerce world, trust is viewed as the intermediary element that will determine if businesses and users are willing to embrace the online economy. Online escrow services have been identified as one of the key business infrastructures necessary to help provide that trust and confidence between buyers and sellers.
Intranet:	A secure internal corporate or government network that uses Internet tools, such as web browsers, and Internet protocols. A communication infrastructure within the organisation which is based on the communication standards of the Internet and the content standards of the World-Wide Web. Therefore, the tools used to create an intranet are identical to those used for Internet and Web applications. Access to information published on the intranet is restricted to clients in the intranet group. Historically, this has been accomplished through the use of LANs protected by firewalls.
Thick or fat client:	A package of powerful software sitting on a powerful processor – a fat client, as it is known in the industry, that brings the network to the desktop and allows the user to significantly customise and adapt his tools as he/she works.
Thin client:	Open systems linking intranets and extranets incorporating multi-platform and multi-vendor standards, excluding none. It seeks to transfer the processing from the desktop machines to the network itself, or more strictly, to servers on the network. Taking this approach, less powerful

processors – and cheaper as a result – would be on the desktop, and a browser window is all that would be needed to access any software, database, or processing facility required by the user. Where these services are located or affected is a matter of indifference to the user as they will have everything at their fingertips.

Hierarchical framework of e-business

“A fundamental shift in the economics of information is under way – a shift that is less about any specific new technology than about the fact that a new behaviour is reaching critical mass. Millions of people at home and at work are communicating electronically using universal, open standards. This explosion in connectivity is the latest – and for business strategists, most important – wave in the information revolution. A new economics of information will precipitate changes in the structure of entire industries and in the ways companies compete” (Evans & Wurster, 1997).

Because this is the case, we need to learn a vocabulary for levels and models of business activity so that we can discuss and exchange ideas about them using a common terminology.

The potential for information and communications technology (ICT) to redefine business activities along lines generally called e-commerce or e-business has led to dramatic redefinitions of the nature of an organisation. 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, which have complex interrelationships, changing paradigms for intermediation and an emphasis on collaborative competition. Today's CIO (Chief Information Officer) needs to have a framework for understanding such relationships in order to evaluate strategic opportunities in the global marketplace.

In all information management projects, where there is a need to analyse or construct large systems, it is useful to structure them as a series of levels in which the lower ones provide the support platform for the higher. In the case of e-business that supports inter-organisational systems, such a hierarchy may usefully be viewed as displayed in **Table 6.1** (adapted from Zwass, 1996).



Table 6.1: The Hierarchical Framework of E-Commerce

Meta Level	Level	Function	Examples
Products & Structures	7	Electronic Marketplaces and Electronic Hierarchies	Electronic auctions, brokerages, dealerships, and direct search markets
			Inter-organisational supply chain management
	6	Products & Systems	Consumer services over distance – retailing, banking, stock broking, etc.
			Information and entertainment on demand: educational services, fee-based content sites
			Supplier – customer linkages
			On-line marketing
Services	5	Enabling Services	Electronic benefit systems
			Intranet and extranet collaboration
			On-line catalogues, directories, smart agents
			Smart card systems, e-money
			Digital authentication services
	Digital libraries, copyright protection		
4	Secure Messaging	EDI, Electronic Funds Transfer, email	
Technology Based Infrastructure	3	Hypermedia/Multi-media 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

Source: adapted from Zwass, 1996

Table 6.1 allows us to view e-business at three meta levels:

1. **Technology-based infrastructure** – the hardware and software comprising the ICT to deliver functionality over networks.
2. **Services** – all messaging activities.
3. **Products and structures** – the provision of goods and services together with intra and inter-organisational information sharing, and the creation of electronic supply chains and marketplaces.

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 inter-organisational strategies extends as far as the reach of these guided (hard-wired) and wireless (radio, satellite) media themselves extend. 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 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 services available over and above those offered by the common carriers (then almost entirely state-run and regulated monoliths, created with voice transmission in mind), and to make a profit in the process. The second 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, we need to understand 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 the very large-scale use of this global network of networks.

Services

The service meta-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 built-in security, confidentiality, authentication or similar services demanded by commerce. This issue is 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. The details of these lies beyond the scope of this module.

Email 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 email contracts, confidentiality, evidentiary value and the 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, customising information delivery and receipt. In addition, electronic money initiatives and e-banking are under formulation, or launched already. This service area is changing too rapidly for a contemporary analysis in print, and you are advised to conduct Web searches on topics of particular interest, after gaining orientation from the readings supplied. 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 recognise 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.

Products and structures

There is much interest in, and publicity surrounding consumer-oriented applications of business. Companies such as Amazon, (booksellers), Dell (computer retailers), CD Now (music sellers), Discover Brokerage Direct (securities transactions) and Security First National Bank (banking services) are rarely absent from the business and popular press. In traditional P/E ratio terms, none of these businesses are exciting, yet their market capitalisation 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 the pervasive practice of implementing intra- and inter-organisational networks to fashion new supply chains, and giving rise to the new organisational forms.

To follow these developments we shall look at generic frameworks for the development of e-business communities. These will influence the proposed models that organisations may adopt to be most effective in their implementation of e-business. In this section we look at how Information Technology and Communications (ITC) allows for the implementation of new forms of business organisation.

Corporate strategies for intra and inter-organisational systems

In this section we discuss some communication strategies and the reasons for their development. This will act as a base on which to extend our understanding of planning for wide-scale organisational change. The twentieth century industrial organisation has grown, not simply by doing the same thing it started out doing, but by bringing more processes upon which it depends, inside the corporate umbrella.

Until recently, the manufacturer of goods held the prime position in the provision of goods to the consumer, although this primacy is today under challenge by retail chains and brand owners. A manufacturer seeking to increase business profits would frequently ask whether he could save money by doing more himself rather than buying in goods or services. A tyre manufacturer in need of a constant supply of processed rubber might check on costs for locating competing sources of supply, evaluating them, competing with other buyers, arranging for delivery and storage of stocks and so on. Very often, such a cost analysis would lead the company to extend its operations by buying a supplier or setting up their own source of supply, thus cutting down on the costs of effecting the transactions needed to get a constant supply of materials. They might then look at the possibility of establishing or buying their own rubber plantation – this means of expansion, typically called vertical integration, is not uncommon. Examples can also be found among the makers of food products and textiles, for example. Resulting perceived or expected economies of scale lie behind the emergence of the very large companies we see in all areas of commerce today.

As companies grow the simple communications mechanisms available to the small business, general staff meetings, informal contacts and memos on bulletin boards cease to be effective. The cost of effective communications within a large company can grow until the company begins to question the wisdom of being so large and starts to shed some of its components, reversing the growth process yet for the same reasons as it grew.

The emergence of Internet technologies over the past decade has offered a new road for business communications, however, changing the face of



both internal and external communications. The economical and robust technologies that underlie the Internet and the World Wide Web can now be used on a network within a company at little expense (as compared to previous proprietary systems), and seamlessly connect with the internal networks of others via the Web.

Use of Internet technologies within an organisation to enable an internal network is known as intranet technology, while linking a part or all of an intranet to that of a business partner, supplier, or customer is known as creating an extranet. Both of these strategies are integral to emerging organisational systems, configurations and strategies.

Intranets

An intranet is a communication infrastructure. It is based on the communication standards of the Internet and the content standards of the World-Wide Web. Therefore, the tools used to create an intranet are identical to those used for Internet and Web applications. The distinguishing feature of an intranet is that access to information published on the intranet is restricted to clients in the intranet group. Historically, this has been accomplished through the use of LANs protected by firewalls.

Most of today's interest in intranets is surrounded by the capabilities of this technology for the widespread internal publishing of rich, well-structured organisational information. For example, general product information, sales packs, development plans, organisation charts, promotional literature, internal newsletters, corporate information and procedures can be published widely in a range of attractive media: text, graphics, images, animation, sound and movies. Intranets make this corporate information available through user-friendly interfaces across a variety of platforms throughout the organisation. This may be an answer to the challenge of efficient communication among various levels of staff and across departments, and use of internal resources.

But as managers of information systems, we need to be clear in our minds at the outset how intranets affect the way that people communicate and work with each other – we need to be aware of primary and secondary effects before considering effective strategies for implementation.

Primary and secondary intranet communications technology

Innovators think first in terms of the primary effects of efficiency and productivity. Organisations purchase these technologies – for example telephones, email or intranet systems – on the basis of expected cost-efficiency.

However, communications technologies also create second-level effects. These are less to do with efficiency and more to do with changing patterns of interaction, work design and organisation. For example, it has been widely observed that railways not only increased the speed of travel between cities as primarily intended, they had the secondary effect of allowing a wider dispersion of people the option of travelling to work by train, which led to the development of suburbs. Similarly, the telephone

was primarily introduced as a tool for business and justified as a more efficient telegraph; the secondary effect has been to create telephone-based jobs and services and also to allow dispersed groups to remain in touch – an enormous secondary effect.

In the case of intranets, we see that the primary effect of intranets is to enable corporate information to be published more cost-effectively. We should also note that the secondary effect of intranets is to lead to new patterns of online communication and the potential for the online, virtual workplace. This argument is reinforced by the personal communication tools (email and Web /computer conferencing) now included in Web browsers, and by introduction of the ‘network’ computers. These technology developments and the phenomenon of secondary effects will accelerate virtual, online working through intranets, both within and between organisations. We can see this is already happening: intranet pages already include email addresses.

Knowledge and information are linked to a person, and communication with that person is only a click away. People can link intranet pages to Web conferences. Online discussions about information are only a click away from the information itself. It’s easy to share data and tasks. Organisations can formally create distributed teams and projects. Furthermore, intranets can also mean that distance becomes irrelevant in selecting the right people for the job.

External links are becoming more common. Alliances and emerging virtual organisational forms have enabled the ready availability of rich communication facilities using common protocols across software, platforms and networks. Intranets thus have the characteristics needed to create the secondary effect of accelerating online work and communication. They change the work focus from the physical office to the intranet. The ready communication they enable creates new patterns of relationships within the organisation. After corporate networking in the late 1980s, and groupware in the early/mid 1990s, intranets are arguably the most decisive technology to fuel the emergence of the online workplace.

If a secondary effect of intranets is to accelerate migration to the online workplace, we need to be prepared for that online workplace. Existing communication and work skills developed over years of face-to-face, collocated work do not necessarily transfer easily to online work. New strategies must be consciously devised to ensure and facilitate efficient communication, message distribution and storage, and workgroup creation and restructuring.

Information sources

At least three sources of content quickly emerge on enterprise intranets:

1. Formal
2. Project/group
3. Informal.



The **formal information** is the officially posted information of the enterprise. It is normally reviewed for accuracy, currency, confidentiality, liability and commitment. This is the information with which the formal management is most concerned.

Project/group information is intended for use within a specific group. It may be used to communicate and share ideas, coordinate activities, or manage the development and approval of content that eventually will become formal. Project/Group information is generally not listed in the enterprise-wide directories and may be protected by restrictions such as passwords, if general access might create problems.

Informal information will begin appearing on the intranet when staff find out how easy it is to publish on the company network. A personal folder or directory on an intranet server can serve as a repository for white papers, notes and concepts that may be shared with others to further common interests, to ask for comments, and so on. Instead of multiple copies of documents flying about the office, the URL can be given to the interested parties, and the latest 'version' of that document can be read and tracked as it changes, online. This type of informal information can become a powerful stimulus for the teamwork and the development of new concepts and ideas.

Putting an intranet in place

For many years, information systems specialists have promoted the vision of the corporate information system. This has the ability to allow for, and enable efficient collaboration without impediments, created by formal and informal work and information structures. The intranet is perceived as the collection of tools that, if properly implemented, may affect this.

The following checklist can be used with an existing or proposed intranet to gauge its worth. Does the implementation proposed achieve the following?

- Re-engineer business procedures to allow for quick-forming, cross-functional teams? Do these cut time-to-market and eliminate dysfunctional barriers?
- Reduce time spent on travel, face-to-face meetings?
- Empower employees to contribute their knowledge and skills more effectively to others? Do employees, conversely, find it easy to learn from the experience of others?
- Distribute responsibility for knowledge production and decentralise knowledge storage?
- Improve groups' understanding of shared goals and missions?
- Encourage just-in-time delivery of information as and when needed – reduce the time taken to prepare and distribute information?

- Provide for a communication nexus that is used?

Intranets versus proprietary groupware

With the rise of corporate Local Area Systems (LANs) in the late80s, proprietary groupware products emerged, before the development of the intranet. Products such as Lotus Notes and Domino provide for a secure environment for sharing workgroup schedules, mail flow, collaborative document production and so on. These systems, now well entrenched in many companies, still have their followers. But when considering between a new proprietary system and an intranet, an intranet may prove advantageous, as well as a lot cheaper. Here are some reasons why:

- Internet software is based upon open (non-proprietary) standards. This is designed to ensure that software will run smoothly – for example, MS Internet Explorer will be able to access Web documents published by a Netscape Commerce Server.
- Platform independence means that almost any piece of computer hardware can connect to an intranet, ranging from Macs, Unix machines and PCs running Linux, Windows or OS/2.
- Implementation is relatively easy – if the internal network is already configured for the Internet, establishing an intranet requires only servers, clients and a firewall to be operational. The servers are the administrative programs typically handling email and Web pages. The clients are software tools on the desk, already familiar to most of us as email readers, net browsers and/or chat clients. The latest Web browsers already incorporate all the minimum tools in one. A firewall is the computer-based device that controls the flow of traffic between an organisation and the outside. It typically allows for Internet access outward, while forbidding or strictly controlling what can be brought inside, and by whom.
- WYSIWYG editors (What You See Is What You Get) get around the need for skilled staff to create documents for publication and transmission on a company network. Simple tools allow for any interested employee to add value by contributing their input quickly and efficiently.
- Unlike proprietary systems, Internet technology is inherently scalable – there is strictly no limit to the number of users who can be added, nor to the extent of the network.
- Intranets are low cost as the software suites needed to run are all free or extremely inexpensive. So much so in fact, that the concept of Return on Investment (ROI) loses its meaning.

The uses to which an internal communication system of this nature can be put are limited only by the imagination and enthusiasm of the participants, so there is no single generic implementation strategy to be recommended, other than ‘Put in a pilot and see’.



Once intranets were developed, the idea arose (nobody can cite a single originator) of extending access to the intranet to selected allies. This could include a mix of suppliers, customers, research labs, contractors and so on, as appropriate to the business. This extended intranet – known popularly as an extranet – could create a value grouping for a wide range of companies in the way that U.S.-based Wal-Mart has done with the more expensive EDI, and proprietary technologies. Intranets are a particularly important and an early part of e-business strategies for most companies.

Extranets

Extranets are attracting much attention and development as a means of allowing for the rapid restructuring of industry alliances to meet rapid shifts in consumer demand, product opportunity and the like. The creation of the ‘agile enterprise’ is a popular way of describing the company which is able to not only restructure its internal workings rapidly and in response to opportunity, but also to restructure its alliances with others to take advantage of shifting market conditions.

Thin clients vs. thick clients

Before rushing into extranet applications, a major policy decision must be made, lest it be made by default as a result of unconsidered implementation. This is the choice between thin client systems and fat client systems, championed by consortia led by Microsoft and Sun Systems respectively.

Thick or fat client

Recognising the power and attraction of Internet technologies, Microsoft has incorporated the TCP/IP suites within its products. The result is a package of powerful software sitting on a powerful processor – a fat client, as it is known in the industry. This brings the network to the desktop and allows the user to significantly customise and adapt his tools as he/she works. Unfortunately, there is a high price paid for this, initially in three separate dimensions.

1. The user may need significant training to handle the power and complexity at their disposal.
2. There is a high cash price to be paid for Microsoft products: what may seem inexpensive for a single user quickly mounts up over a large enterprise.
3. Compatibility problems rapidly arise as users customise their software, install additional units, and upgrade in advance of others.

Later, the following question will arise: can Microsoft continue to impose its proprietary standards on the world, or will early adopters dump this approach if another proprietary standard or an open standard becomes available?

The immediate advantages, however, are as attractive as the disadvantages are repellent: powerful tools, such as MS Project and NetMeeting allow network-connected users to launch shared applications – any MS software – to use a common application workspace.

Thin client

The advocates of the thin client see the relationship between desktop system and network in quite another fashion. In the oft-quoted phrase used by Sun Microsystems: ‘The network is the computer’.

The Netscape/Sun alliance has a vision of open systems linking intranets and extranets incorporating multi-platform and multi-vendor standards, excluding none. It seeks to transfer the processing from the desktop machines to the network itself, or more strictly, to servers on the network. Taking this approach, less powerful processors – and cheaper as a result – would be on the desktop, and a browser window is all that would be needed to access any software, database, or processing facility required by the user. Where these services are located or affected is a matter of indifference to the user who has everything at the fingertips.

Advantages of the network/thin client system is that it allows for a single point of upgrade for software, makes end-user amendments difficult, allows for optimised choices of hardware platforms, and handles the communications between processes at the network rather than the desk level. The downside at present is the immaturity of tools to support this option and the reliance of fledgling cross-platform languages, such as Java.

Which way would you advise a company to go? The answer will depend upon local conditions, not least your belief as to the continued and extended availability of high bandwidth and reliable network connections – but this is a technical area best left to specialist consideration.

Security issues

Taxing issues of security arise for anyone seeking to implement an extranet. There must be communication with outsiders, yet this must be restricted – issues of access control, confidentiality and authentication are beyond the scope of this module, yet will need to be addressed. While Internet technologies were designed to be robust, reliable, inexpensive and cross-platform, they were not designed with high security in mind, and ways of addressing this are under development, albeit hampered by governments which believe they have a right to eavesdrop on communications.

Making the business case

Because relatively few extranets produce a cash flow that can be identified, effective strategic planning and making the business case for using such a system generally relies on identifying areas where savings will flow from an extranet. The following checklist can be used to start corporate thinking in the right direction:



- Reduced paper cost.** Electronic documentation can be published more rapidly and at a lesser cost. Information-heavy companies are able to quantify these costs easily.
- Eliminated private network charges.** By migrating extended access to the Internet, huge savings are possible where private networks can be dismantled or supplemented.
- Process efficiency.** Workflow redesign is a promising area for savings – such areas as automatic ordering, reduced transmission time of information and so on can be quantified.
- Outsourced functions.** Rapid and inexpensive communications can allow for the outsourcing of intermittent or time-dependent projects; collaborative extranets make this route appealing.
- Reduced customer service costs.** If customers can find the answers to their own problems at a time of their choosing, then staff time, office space and restricted service can be largely replaced by Websites and database access.
- Reduced phone and fax costs.**
- Reduced inventory.** Supply chain extranets can reduce inventory holding times, storage costs – supply chain management is proven in many fields to dramatically improve cash flow while providing better service.

Issues in implementing IOS

Organisational issues

As might be expected, putting systems in place across organisations calls for consideration of a wider range of human and technical factors – and consequently, greater management planning – than dealing with the needs of a single enterprise. A simple model illustrates this. If a single working parent has one child and that child attends a single school, there are issues of where and when to purchase uniforms and kit, how to arrange transport between home, school, outside venues, friends' houses, and the need to plan holidays and leave around the school year. When a family has two working parents and several children attending different schools, the issues of effective management become more complex. Several uniforms may be needed, these are not exchangeable across children and the school timetables and calendar may be different. The range of problems, tools required, and need for coordination is greatly extended.

As organisations seek to extend their reach and/or effectiveness by the use of alliances, partnerships, and increasingly, close ways of working together, this collaboration requires the establishment of closely tied communications and information systems between the organisations,

including but not limited to, extranets as introduced above. The remainder of this section introduces you to some of the issues involved and explored in IS literature. Collaboration calls for the resolution of a wide range of strategic, social and conflict management areas. In order to put in place an IOS, the cost of communications and the cost of the technology needed must be justifiable to all parties, while any implementation must first deal with congruence with long range strategic planning. While this may already be in place within an organisation, the formation of alliances or partnerships may serve to require a radical rethink in terms of the revised landscape of opportunities and strengths.

Against this background, a shared approach to conflict management may need to be formalised, since existing implicit procedures may not suffice. It can be readily appreciated that the means of resolving a conflict in a company founded, owned and run by a single dynamic individual will be far distant from those employed by a publicly owned multinational with partially independent subsidiaries. Within a single language group or country, many business models may exist. With increased interest in forming transnational or global alliances, however, such issues assume high importance and call for considered investigation and resolution, lest different assumptions left unstated, wreck collaboration unnecessarily.

Against this, organisational issues need to be plotted: partners may not have the same resources to invest in a project, they may have widely different views on the appropriate levels of responsibility within their forms and unstated beliefs in the business and social value of technology will affect implementation.

Added on to these issues are those relating to the technology to be deployed within any IOS. Any discussion of standards, equipment, networks and the like will quickly highlight the fact that technology is not neutral. What is taken for granted in one company – a perceived value of a networking technology, or adherence to proprietary standards – may be dismissed as out-of-hand, or chaotic in another. The choice between proprietary EDI and Internet-enabled EDI alone is one that calls for careful consideration and mutual understanding at the outset of any IOS project. The value of the resulting choice is unlikely to be symmetrical across partners, with a concomitant need for conflict resolution – and so it goes on.

Technical issues

Companies today spend an increasing percentage of their IS/IT budget on inter-organisational systems – applications extending beyond company boundaries. These typically create a complex web of relationships between a company, its partners, customers, suppliers and its markets. Inter-organisational systems (IOS) will grow because of the need to integrate disparate organisations or individuals in the same IT-enabled processes, regardless of formal boundaries.

Just as process management methodologies look at a process as a set of related activities, independently of functional boundaries, information technology now encourages us to consider and integrate whole value chains, independently of geographical or organisational boundaries.



Traditionally, these integrations called for high-end, specific and often proprietary technologies (such as EDI systems, value-added networks and specific in-house developments). New technologies are slashing the cost of building such inter-organisation systems, thereby providing smaller companies with the opportunity to derive large business benefits from crossing organisational boundaries to include their customers, suppliers or partners in their processes.

These new technologies are less complex to understand and use, and therefore demand less in the way of skilled personnel to manage them. The cost of ownership of these systems is also decreasing, thanks to standard-based client-server technology and open networks replacing the mainframe-based, often proprietary technology, which was formerly the norm.

The characteristics of inter-enterprise exchanges are that (relatively) few numbers of partners are involved, but the information exchanged is of high importance. The required reliability and security of the link is proportional to the importance of the link to both partners' businesses. As a general rule, one should consider the security and reliability requirements of the cross-organisational IT systems as equal to those of internal operational systems. This means the IT architecture supporting the IOS should offer secure connections (authentication, access control, cryptography), reliability (commit roll-back type of connections, restart after failure, etc.), accountability and monitoring, every minute of every day.

Examples of applications available to support IOS (systems supporting virtual corporations or linking customers and suppliers) include:

- electronic mail
- conferencing systems, discussion databases, bulletin-board type systems
- shared databases (allowing the storage of documents, models, multimedia clips, etc.)
- workflow management software
- shared applications or models (e.g., financial or CAD models)
- project management software
- videoconferencing
- negotiation support software (e.g., voting systems)
- highly structured information processing capabilities (indexing, searching, filtering, agents).

There are two sets of technologies, embodied in applications, which enable IOS. The first set of technologies is comprised of proprietary

systems, typified by the early arrival of the Lotus Notes environment; the second arises from the Internet and its applications.

Proprietary technologies

Lotus Notes is the application that helped to popularise the term 'groupware', i.e. computer tools helping people work together and communicate effectively across time or space boundaries. Although there are competitors, it is still the primary and leading tool in this area, and illustrates inter-enterprise support technologies. There are two possible ways of looking at groupware: business-oriented, and technically oriented. Business users usually see Lotus Notes as a group environment that improves their access to information (through shared, replicated databases) and helps teamwork along (through communication features and workflow). For the technically minded, Lotus Notes can be described in terms of its parts:

- a distributed document database (a document being a form containing text, images, sounds, video clips or any other object)
- a development environment, allowing to build applications (amongst them workflow applications)
- an electronic mail system, well integrated with the rest of the system security mechanisms, including encryption, authentication and access control
- a replication mechanism, to synchronise databases on remote sites
- a set of interfaces to external programs (email, databases, etc.)
- a platform-independent GUI.

It should be noted that what attracts most users to Lotus Notes is the integration between all these components, which provide a seamless working environment, in which the technical components are hidden. Lotus Notes has been used to build groupware environments, to support teamwork through shared document databases, discussion databases, workflow systems and common project management. It has also been used to build specific applications such as customer support, documentation systems or workflow management systems.

Non-proprietary Internet technologies

In a formal sense, the Internet is not a set of technologies, but a wide-area network made up of thousands of sites around the world. Nevertheless, some technologies were created especially for the Internet and are mainly used in that environment today. Technologies in use on the Internet include communication, resource sharing and navigation tools.

Communication tools are mainly electronic mail and discussion forums (Usenet news); resource sharing includes file transfer (FTP) and remote



terminal emulation (Telnet), and navigation tools include Gopher (a text-based hypertext system) and the World Wide Web or WWW (a graphic-oriented hyper-media system). The Web has been a main driving force behind the explosive increase of use of the Internet. The Web today is the primary front-end tool used by Internet and on-line-service users, integrating all other tools under a common umbrella.

The Web appears to the user through graphical front-end viewer, allowing them to consult multimedia documents stored on servers around the world. These documents can include hypertext links pointing to other documents on the same servers, or on other servers. Popular uses include presentations of companies, electronic catalogues, information database services and gateways to existing services.

Open technologies and convergence

A main difference between the two sets of technologies presented above is the openness of each environment. Lotus Notes can be considered a proprietary — albeit open — environment (i.e. it is the exclusive property of one company, although it offers various ways to integrate with its data and services). The technologies related to the Internet are most often non-proprietary (having usually been built by volunteers and placed in the public domain), although commercial providers are now gradually taking over.

In the context of fast-evolving technologies, being proprietary is sometimes an advantage, as it allows a company to impose standards and offer advanced functionality. This is the case with regard to the security and reliability of the Lotus Notes environment, compared to Internet technologies. As such, it perfectly serves the need of inter-enterprise systems, which demand inherent security and monitoring.

While proprietary systems are moving to seamless integration with Web standards and functionality, the Internet is already well on its way to acquiring more secure functionalities, as encryption and authentication standards are progressively adopted by a majority of providers.

Implementation issues

A major issue is the evolution of IOS services after they have been created. It is rarely possible to foresee all opportunities and weaknesses that may eventually emerge from a new or modified system, while staying flexible is the name of the game. When encouraging partners and customers to join the IOS, and when discussing the service with customers, as well as when calling for feedback and implementing changes, the emphasis must be on flexibility. Although these technologies can, and should, serve to support a strategy, it is likely that new strategy options will emerge from opportunities uncovered by pilot projects in these areas. This comes from the difficulty of planning the final use of very new technologies, where users cannot predict their demand for an unknown service or product.

Payment gateways

Payment processing in e-commerce

We have addressed how you can receive credit card information securely through the use of SSL and digital certificates, but the actual processing of the credit card requires that you have a merchant account. A merchant account is a business account at a financial institution that functions as a clearing account for credit card transactions. While there are many different payment methods, most e-commerce sites will want the ability to accept credit card payments from customers. There are two ways to process credit card payments: offline or online. Both require a merchant account and credit card terminal.

Although many people equate a merchant account with a chequing account, setting up a merchant account is a bit more complicated. A plethora of businesses, in addition to traditional financial institutions, are eager to set you up with a merchant account. Thus, there is an enormous variety in the deals offered. Prior to making a final decision as to what company you will use for your merchant account, do your homework — learn about the process, talk to others who have existing accounts regarding their experience with their provider.

Credit card processing

Offline order processing

If you have a brick-and-mortar business, it is likely that you already have an existing merchant account as well as a credit card terminal. Thus, you initially may want to continue with your current set-up for your new e-commerce site. Of course, that means only offline credit card processing, which would work like this: A form would be included on your website so that after a customer types in the billing and shipping information, the information is relayed to you through encrypted email. You then process the information manually using your existing credit card terminal.

Some customers may want to pay via their Debit/ATM card. Processing this type of payment is basically the same as processing a credit card except that the order amount is deducted from the customer's checking account. Websites that provide this type of payment option can usually forego the need for cheque processing. However, before making a final decision on this matter, check with your Merchant Account Provider for details on how they might handle Debit/ATM card processing and obtain their pricing information for such service.

Real-time credit card authorisation

- Does your current e-commerce software allow integration with real-time credit card authorisation systems?
- Do you process credit card transactions prior to product fulfilment?



If the answer to both of these questions is yes, then you might need real-time authorisation capability. (A real-time credit card authorisation account doesn't require you to lease or to purchase equipment or to install software on your computer.)

If you want your customers' credit cards processed instantly 24 hours a day, seven days a week, and the funds deposited into your business chequing account within 48 - 72 hours, open a real-time credit card processing account after your merchant account is approved. Contact a real-time Internet processing company such as AuthorizeNet.com or Cybersource.com.

With a real-time credit card authorisation account, authorisation occurs at the time of sale; the processing network receives the authorisation information from your merchant terminal and checks the databases of the financial institution that issues the card for available balance and reduces the available balance (but no money changes hands). This authorised transaction is then stored in a local database called a batch. Settlement occurs once per day for any authorisations that have accrued for that business day. When a settlement or auto-settlement has been executed, the transaction, minus any merchant fees, will be approved for transfer to your bank account and the funds will arrive in fewer than three business days. (Settled batches, or closed batches, are restored for later access.)

There are specific requirements that an e-commerce site must meet before it can open a real-time credit card processing account. Advantage Communications Enterprises, a well-known Web design and marketing business in Kalamazoo, Michigan, has provided a list of items needed to establish a real-time credit card processing account, they include:

- A shopping cart.
- Software or CGI scripts used to store products and orders.
- Hosting for Store front.
- An Internet-connected Web server.
- Business banking account.
- Internet-ready merchant account.
- A bank or merchant processor who has access to an Internet-connected processing network (to enable high-speed/real-time authorisation).
- A gateway to the processing network.
- A high-speed provider with access to processing network. (There are banks and merchants that provide gateway services, and there are gateways that provide merchant services.)

For more information about real-time credit card processing, visit www.Advantagecommunications.com.

Online cheque processing

The more payment options you can provide to your customers, the more competitive your website is likely to be. Some of your customers will prefer to pay by cheque, but accepting a cheque online can be problematic. Purchasing products/services by cheque negates the instantaneous nature of e-commerce if you need to wait for a cheque to cleared before shipping. To speed things along, some businesses will ship on the receipt of a cheque, at least until they are burned once too often by a bounced cheque.

When you process a cheque online you are not required to have a signed instrument from the customer, all that is required is the information that is on the customer's regular cheque. There are a number of ways to accept cheques online; some allow you to provide speedy order fulfilment, others require that a prudent e-commerce operator wait several days to ensure the cheque clears before shipping the order.

Let's first examine the do-it-yourself method. This method requires that you have a program to print out a hard copy of your customers' cheques before depositing them into your bank account. (The ensuing process is the same as a traditional business that accepts customers' cheques, i.e. to prevent fraud, you shouldn't ship the merchandise until the cheque clears.) If you are interested in going this route, check out vendors such as CheckMAN (www.checkman.com), Intell-A-Check (www.icheck.com), and Vcheck (<http://softwaresolutions.net/vcheck>).

To help you better understand these cheque processing programs, let's take a quick look at how the Intell-A-Check 6.0 application suite facilitates the processing of cheques. When your customers pay by cheque, they provide information about their account by filling out a form on the website. Intell-A-Check uses this information to automatically create a cheque or automated clearinghouse transfer that can be deposited immediately into your bank account and immediately credited against a customer's account. You don't need to worry about not being paid because Equifax, the leading provider of consumer information in the U.S., guarantees Intell-A-Check cheques. Another benefit of Intell-A-Check — the customer and the website avoid credit card fees.

Most cheque programs require that you purchase specific — cheque paper for printing the customers' cheques. But, in many cases, these programs do not require that you use any special, expensive magnetic-type ink for printing the cheques — generally printing the cheques on your Inkjet or laser printer is satisfactory. This is because most banks now use optical, rather than magnetic, devices to process cheques.

Transaction companies

Now let's look at the method that will allow speedy shipment of ordered products. This method requires that you use a transaction service, which will verify that the information on the online cheque is complete. These transaction companies charge a setup-up fee in addition to a per-cheque and/or a percentage fee. Many of these services will, for an extra fee, also guarantee the cheque. The extra fee may be well worth it since the transaction service must reimburse you if the cheque doesn't clear. Of course, there are specific conditions that must be met for this scenario to play out.

Most of the transaction companies in business today only process U.S. cheques. If you decide to use an online cheque transaction service, be sure that the service can perform cheque verification in real-time. There is not much involved in processing a cheque online, so don't sign with a service that changes a high transaction fee, and don't pay a discount (percentage) rate on cheque transactions — unless the cheques are guaranteed.



Figure 6.1: Transaction companies

Implementing PayPal

Email payment services can be used as either your primary, or as a secondary payment processor. The most popular of the email payment services is probably PayPal (at least in the U.S.).

PayPal makes sending and collecting money easy. PayPal integrates seamlessly with existing financial networks, allowing anyone to send money from their credit card or bank account. Thus, with PayPal, any website can accept credit card payments from all of its customers.



Figure 6.2: Paypal online payment service (www.paypal.com)

If you live in the U.K. you might want to check out the popular **NoChex.com**. Anyone with an email address and a U.K. bank debit card can take advantage of this easy-to-use payment service.



Figure 6.3: Nochex online payment service (www.NoChex.com)

Preventing fraud

Escrow services

In the e-commerce world, trust is viewed as the intermediary element that will determine if businesses and users are willing to embrace the online economy. Online escrow services have been identified as one of the key business infrastructures necessary to help provide that trust and confidence between buyers and sellers.



Figure 6.4: Escrow services (www.escrow.com)

When credit card fraud occurs, the e-merchant loses his goods, is charged for the costs, and must pay the issuing bank a charge-back fee. On the other hand, online consumers face the risk that they may not receive the goods, the goods that arrived are not as described, or the goods are damaged. When you contract with an online escrow provider, the escrow service acts as an impartial trusted third party that facilitates buying and selling by providing both the seller and buyer with trust, security and convenience. These middlemen hold your customer's payment (whether via cheque, money order, or credit card) in trust, awaiting confirmation that the goods are as expected.

Through the escrow service, the buyer and seller agree in advance as to how the goods and funds will be exchanged, along with a return policy. Here's how the typical escrow service works: The buyer pays the total purchase price to an escrow provider, which holds the customer's money in trust. The seller ships the merchandise directly to the buyer. If the buyer accepts the merchandise, the escrow service pays the seller. Otherwise, the buyer returns the merchandise to the seller (in its original condition) and receives a refund from the escrow service. It's that simple — of course the escrow service charges a fee for its services. Some of the escrow services you might want to check out include:

- Escrow.com
- Escrow Online (www.escrowonline.org)

- Canada Escrow Online (www.escrowonline.ca)
- Secure-Commerce.com (also offers a multi-currency escrow service)
- Cash-Escrow (<http://secure.cash-escrow.net>), which is a European escrow provider.

Be careful, though. In the U.S., the Federal Trade Commission (FTC) has begun pursuing fraudulent online escrow services. Premier-Escrow.com is one such service that, according to the FTC, set up a fake escrow business and then directed buyers and sellers of merchandise to use that business. And although a website would ship merchandise to the buyer, the site never received payment from the escrow service and buyers would make payments to the fake service, but never receive their merchandise. The FTC says that it has also shut down two other alleged fraudulent escrow services and that 53 separate actions have been taken by various states concerning the same type of fraud scheme.

Here are some suggestions of steps you can take to protect yourself from being a victim of a fraudulent escrow service:

- Be wary if a buyer is insistent upon using a specific escrow service.
- If you are asked to deal through a service that you are unfamiliar with, call the company — this may help you to determine whether it sounds legitimate.
- Check out the service's website. Many fake escrow services set up websites that are intended to mirror real escrow services. Are there grammatical errors and/or other simple mistakes? Is there odd wording, especially where the fake escrow service's name has been substituted in place of the real escrow service?
- Check the Who is registry (www.networksolutions.com/en_US/whois/index.jhtml) to see if the online registry information fits with the corporate information on the site. If there are discrepancies, check them out.
- Check with your local Better Business Bureau.
- If you have any doubts about a specific escrow service, don't do business with that company.

Some other steps you can take to ensure you are using a legitimate service is to check with your bank to see if it offers an online escrow service or can recommend one. Or bypass the escrow services altogether and use Western Union's BidPay (www.bidpay.com). The buyer purchases a money order online using a credit or debit card, BidPay sends a confirmation email to the seller within minutes with information on when your money order is scheduled to be sent. According to the BidPay



website, — there is absolutely no fee for sellers unless you choose a payout option other than a money order (i.e., a cheque in British Pounds).

Internet usage statistic and reports

The following table lists the countries with the highest number of Internet users.

Table 6.2: Top 20 countries with the highest number of Internet users.

#	Country / Region	Population, 2010 estimate	Number of Internet Users	%Population (Penetration)	Growth 2000 - 2010(%)	% World Users
1	China	1,330,141,295	420,000,000	31.6	1,766.7	21.4
2	U.S.	310,232,863	239,893,600	77.3	151.6	12.2
3	Japan	126,804,433	99,143,700	78.2	110.6	5.0
4	India	1,173,108,018	81,000,000	6.9	1,520.0	4.1
5	Brazil	201,103,330	75,943,600	37.8	1,418.9	3.9
6	Germany	82,282,988	65,123,800	79.1	171.3	3.3
7	U.K.	62,348,447	51,442,100	82.5	234.0	2.6
8	Russia	139,390,205	59,700,000	42.8	1,825.8	3.0
9	France	64,768,389	44,625,300	68.9	425.0	2.3
10	Korea South	48,636,068	39,440,000	81.1	107.1	2.0
11	Iran	76,923,300	33,200,000	43.2	13,180.0	1.7
12	Italy	58,090,681	30,026,400	51.7	127.5	1.5
13	Indonesia	242,968,342	30,000,000	12.3	1,400.0	1.5
14	Spain	46,505,963	29,093,984	62.6	440.0	1.5
15	Mexico	112,468,855	30,600,000	27.2	1,028.2	1.6
16	Turkey	77,804,122	35,000,000	45.0	1,650.0	1.8

#	Country / Region	Population, 2010 estimate	Number of Internet Users	%Population (Penetration)	Growth 2000 - 2010(%)	% World Users
17	Canada	33,759,742	26,224,900	77.7	106.5	1.3
18	Philippines	99,900,177	29,700,000	29.7	1,385.0	1.5
19	Vietnam	89,571,130	24,269,083	27.1	12,034.5	1.2
20	Poland	38,463,689	22,450,600	58.4	701.8	1.1
TOP 20 Countries		4,415,272,037	1,466,877,067	33.2	408.9	74.6
Rest of the World		2,430,337,923	499,113,549	20.5	286.0	25.4
Total World - Users		6,845,609,960	1,965,990,616	28.7	444.6	100.0

Source: Internet World Stats, 2011

The following Internet usage and world population statistics are as at June 30, 2012.

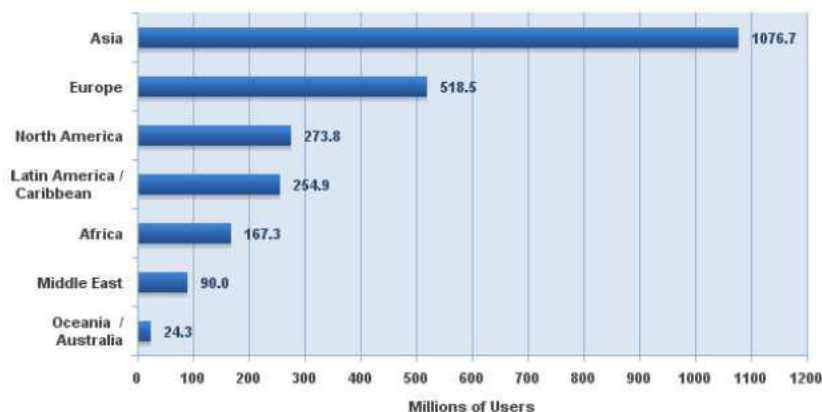


Figure 6.5: Internet users in the world by geographic regions

Source: Internet World Stats, 2013

Digital economy reports

- *Global Digital Economy, e-commerce and m-commerce Trends and Statistics*

This annual report offers a wealth of information on the worldwide development of the digital economy in terms of e-commerce and m-commerce. It offers analyses, statistics, forecasts and key trends for the e-payment, e-banking, m-payment and m-banking services. It provides insight into the most popular online and mobile content and services. An overview of advertising and marketing using digital media is also provided. Regional information on developments in North



America, Latin America, Europe, Middle East, Africa and Asia Pacific are also provided.

- *Global Telecommunications – Key Telecoms, Mobile and Broadband Statistics*

This report provides a valuable insight into the developments and trends taking place in the worldwide telecoms market. It presents a snapshot of the overall global telecoms market including key statistics such as overall telecoms capital expenditure (CAPEX) and telecoms revenue. Statistics and information on the overall number of fixed lines; Internet users; mobile subscribers (worldwide and by region); text messages; top carriers; outsourcing; MVNO and telecoms M&A market statistics are also provided on a global level.

Other Internet information sources

- *Internet Traffic Report*

The Internet Traffic Report monitors the flow of data around the world. It then displays a value between zero and 100. Higher values indicate faster and more reliable connections.

- *The CAIDA Web Site*

CAIDA, the Cooperative Association for Internet Data Analysis, provides tools and analyses promoting the engineering and maintenance of a robust, scalable global Internet infrastructure.

- *Internet News*

Internet dot com provides enterprise IT and Internet Industry professionals with the news, information resources and community they need to succeed in today's rapidly evolving IT and business environment.

- *Detailed Domain Count*

Statistics on the number of active domains and those deleted from the Internet each day.

- *Web Browser Statistics*

Statistics and trends in browser usage, operating systems and screen resolution.

- *Top Level Domain Count*

Statistics on distribution of Top-Level Domain Names by Host Count.

- *ClickZ Stats*

ClickZ Stats is a guide to Internet statistics, Internet marketing demographics, Internet advertising research, e-commerce trends.

- *RefDesk*

Reference source to Internet Usage.

- *Net Craft*

Netcraft provides network security services, and market research on many aspects of the Internet.

- *Renesisys*

The Internet Intelligence Authority, Renesisys® is the leading provider of objective, critical intelligence on the worldwide state of the Internet. Intensive data collection on every continent with innovative, proprietary software. Optimised algorithms gather real-time data from the Internet backbone, around-the-clock.

- *ICANN*

The Internet Corporation for Assigned Names and Numbers, better known as ICANN, is responsible for managing and coordinating the Domain Name System (DNS) to ensure that every address is unique and that all users of the Internet can find all valid addresses. It also ensures that each domain name maps to the correct IP address. ICANN is also responsible for accrediting the domain name registrars.

- *Internet Domain Survey*

The Domain Survey attempts to discover every host on the Internet by doing a complete search of the Domain Name System.

- *RIPE NCC*

One of the four Regional Internet Registries (RIRs) providing Internet resource allocations, registration services and co-ordination activities that support the operation of the Internet globally.

- *APNIC*

One of the four Regional Internet Registries (RIRs) APNIC provides allocation and registration services which support the Asia Pacific region.

- *ARIN*

One of the four Regional Internet Registries (RIRs), ARIN – the American Registry for Internet Numbers – manage the Internet



numbering resources for North America, a portion of the Caribbean, and sub-equatorial Africa.

- *LACNIC*

One of the four Regional Internet Registries (RIRs), LANIC – The Latin American and Caribbean Internet Addresses Registry – is the organisation that administrates IP addresses space, Autonomous System Numbers (ASN), reverse resolution and other resources of the Latin American and Caribbean region (LAC).

- *AfriNIC*

AfriNIC (information) for the purpose of managing the IP addressing in the African continent. In the future it is expected that African organisations that presently obtain IP address space from RIPE or ARIN will obtain the IP addresses space from the AfriNIC.

- *Network Startup Resource Center*

The NSRC provides technical and engineering assistance to international networking initiatives building access to the public Internet, especially to academic/research institutions and non-governmental organisations (NGOs).

- *W3C - World Wide Web Consortium*

The World Wide Web Consortium (W3C) develops interoperable technologies (specifications, guidelines, software, and tools) to lead the Web to its full potential. W3C is a forum for information, commerce, communication and collective understanding.

Module Summary



Summary

In this module we introduced the hierarchical structure of the platforms upon which e-business is founded and the ways in which ICT tools and both proprietary and Internet-enabled communications allow businesses to increase the efficiency of standard procedures both within the organisation and with other partners in the enterprise. We also looked at the strategic considerations that organisations must review for effective implementation of e-business in an IOS environment. Benefits that may occur include:

- **Reduced procurement time and cost.** A secure Web-based order system, possibly combined with electronic delivery of associated documentation can save money.
- **Diminished training costs.** Online training systems are another source of savings.
- **Extended life of legacy systems.** Instead of replacing legacy systems, many companies are building Web interfaces to extend the useful life of old systems.

These benefits are quantifiable and may be highlighted when arguing for the implementation of an extranet. Often, however, the driving force may be intangibles such as constant real time access to information, an extended knowledge pool, satisfied customers and partners, retention of satisfied staff, faster time to market, and so on, which are harder to quantify.



Assessment 2



Assessment

1. Discuss the different ways of classifying business models.
2. B2C seems to be the e-commerce model which has the most business value. Explain the benefits that B2C has over other models.
3. How important is brand and corporate image to an e-commerce business organisation?
4. Discuss with valid comparisons between fully online and brick-and-mortar examples of businesses, why marketing for e-commerce can be so much more challenging. Include in your arguments the idea that you have to “personalise” your advertising and services yet the world is your market.
5. Explain the original 4Ps of the Marketing Mix with reference to electronic commerce.
6. Actual value delivered to customers takes precedence over the technology present on an e-commerce site. However, it is easy to be blinded by all the marketing tools available online today. Describe the following marketing processes and the actual value that customers receive :
 - a. Organisational strategy
 - b. Opportunity analysis
 - c. Marketing planning
 - d. Result monitoring
7. Why should prices be different once a product is sold online? Should these be lower or higher? Justify your argument.
8. In what ways is an intranet different from an extranet? Explain.
9. Discuss why it is important for an e-commerce seller or buyer to understand the physical and logical technological infrastructure that facilitates their transactions.
10. Using an example, describe how credit card payments can be made online to purchase goods and/or services.
11. Online fraud can have a more damaging effect than theft of physical/tangible personal items. Explain why the scope of online fraud can be indistinguishable and untraceable.

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