

# PROSPECTUS

E-commerce  
Today's technology news,  
tomorrow's business  
reality

August 1998

*putting* **STRATEGY** to **WORK**

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The authors are Denise Reid and Mark Kennedy of Prospectus.

We would like to thank all those that participated in this research.

## About Prospectus

Prospectus is an independent strategic consultancy established in 1991 with substantial international reach. The company provides consulting and research services across a range of industries. Prospectus has worked in the following sectors: financial services, healthcare, software, public sector and utilities.

Prospectus bridges the gap between strategy development and implementation and specialises in putting strategy to work. The company brings an extensive range of specialist skills, in-depth industry knowledge, and international experience to our clients, helping them to:

- Identify areas of opportunity
- Develop plans to exploit these opportunities
- Put these plans into practice.

Our approach to consulting differs from that of many of our competitors. By working very closely with our clients, we achieve tangible and realistic results.

Prospectus is a member of the COBA Renaissance Alliance, a dynamic group of strategic consultants, covering Europe, North America and Asia, committed to sharing knowledge, experience and skills for the benefit of all our clients.

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# 1 Introduction to e-commerce

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We have all heard the electronic commerce (e-commerce) hype. But e-commerce is about more than selling books over the Internet. To grasp the essence of the opportunity it is helpful to look behind the e-commerce buzzword.

Electronic commerce is defined as conducting commerce electronically i.e. conducting business electronically. The opportunities should be considered in that order, business first, technology second.

For example, conducting business electronically (e-commerce) can mean

- Enhanced communication and collaboration between employees e.g. Employees at Hewlett Packard's Dublin site participating in global newsgroups to improve product development.
- Improved supply chain management e.g. Unipharm uses an extranet to give retailers of its products access to recent product information.
- Cheaper information exchange with suppliers. Internet technology reduces the cost of EDI (Electronic Data Interchange) making it accessible to companies other than large multi-nationals.
- Low cost access to new markets e.g. Kilkenny Design sales of giftware products to the US.

In this report we look at these and other business advantages of e-commerce. We provide evidence of the benefits of using e-commerce and give practical Irish examples.

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## 2 Dispelling the myths

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### Myth 1

"It's all about technology so I'll pass this report on to my IT Director."

Technology capability is not a business strategy.

Senior management need to understand the opportunities of conducting business electronically. The IT Director can make it happen but the vision should come from senior management and encompass the entire organisation. Remember, think about the business opportunities first, the technology second.

To paraphrase the marketing mantra of the 1980's, electronic commerce is too important to be left to the technology experts.

### Myth 2

"E-commerce is just about the Internet, and Internet users are white, male, thirty-something techies. That has nothing to do with my business"

While the initial e-commerce consumers could be categorised as predominantly male, white, thirty-somethings, the profile is broadening as Internet access and familiarity increases. More importantly, from a business perspective, the Internet consumer is only one of three main user groups to be considered. Senior management need to consider what e-commerce means for internal users, preferred customers and suppliers, and the general public.

- Internal users

Internet technologies can be used by, and for the benefit of, a single organisation by using an intranet, i.e. using Internet technologies and standards within an organisation.

Internal company networks in different forms have existed for many years, but Internet based networks could greatly extend the functions of such systems. Intranets can be linked via firewalls to the public Internet. A firewall will allow Internet access for employees and access to non-confidential information, on the intranet, to the general public.

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## 2 Dispelling the myths

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- Preferred suppliers and customers

Companies may wish to use e-commerce outside of the organisation but restrict the scope to trusted third parties. An extranet is an extended intranet, i.e. it is open to selective access by specified external parties such as preferred suppliers and customers.

An extranet is most frequently used between companies to improve the efficiency of transactions within the supply chain. This is often referred to as business to business e-commerce.

- General public

This user group uses the Internet primarily to browse for information and increasingly to purchase goods and services. This is known as business to consumer e-commerce.

Table 1 Summary of the users and the applications of e-commerce using Internet technologies

User group	Internet application	Description
Members of organisation	Intranet	Secure network only accessible by those within an organisation
Preferred suppliers, customers and business partners	Extranet	Extended intranet allowing authorised access to selected external groups
General public	Internet	Open network accessible by any individual with internet connection

Definitions of Internet, intranet and extranet are included in the glossary in Section 10.

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## 2 Dispelling the myths

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### Myth 3

"It's a technology revolution"

The infrastructure for e-commerce has evolved from the merging of computing and communications technologies. It is as a result of evolution not revolution and, as a result, the technologies will continue to evolve, presenting further opportunities. E-commerce will not be on the strategic agenda for one year only.

As the opportunities presented by e-commerce evolve, continued revision of business strategies, business models and business processes will be necessary.

For example, as Internet technologies merge with expert systems using supermarket bar-codes, the fridge of the future will be able to select which foods are missing from it and send an order via the Internet to the supermarket. If a fridge of the future can do your shopping, how much scope is there to change the way you do business?

### Myth 4

"You can't make money from it, even the big success stories have yet to post a profit"

It is true that the new virtual booksellers have yet to make a profit despite phenomenal turnover. However, to use this as the typical business example is misleading. Non virtual companies, such as Dell or Cisco Systems, providers of software for networking via the internet, have successfully combined e-commerce opportunities with their existing business, increasing turnover and greatly reducing costs. For most businesses the first benefit from e-commerce will be to save costs rather than make directly attributable revenue.

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## 2 Dispelling the myths

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### Myth 5

"I have a web site, but there doesn't seem to be much opportunity for sales, not much else I can do."

As the consumer market is not yet developed, many businesses, once they've established a website, are tempted to dismiss the idea of e-commerce as something for the future. However e-commerce, using Internet technologies already has applications for today's business processes. Broadly speaking, these can be examined at three levels;

1. Information sharing; informing and interacting internally and with third parties
2. Transacting; purchasing and payment transactions with third parties
3. The service and support proposition; integrating customers and suppliers into the process of delivering services or products to enhance the service to the customer.

The advantages of using e-commerce in each of these processes are summarised in the table below;

Table 2 Advantages of using e-commerce

Information sharing	Transacting	Service and support
<ul style="list-style-type: none"><li>• Access to new markets and customers</li></ul>	<ul style="list-style-type: none"><li>• Sales in new markets</li></ul>	<ul style="list-style-type: none"><li>• Retention of customers</li></ul>
<ul style="list-style-type: none"><li>• Improved communication and internal efficiencies</li></ul>	<ul style="list-style-type: none"><li>• Improved supply chain</li></ul>	<ul style="list-style-type: none"><li>• Internal focus on customer</li></ul>
<ul style="list-style-type: none"><li>• Closer links with suppliers / business partners</li></ul>	<ul style="list-style-type: none"><li>• Cost savings</li></ul>	<ul style="list-style-type: none"><li>• Cost savings</li></ul>
<ul style="list-style-type: none"><li>• Cost savings</li></ul>		

Each of the business advantages is discussed in more detail in the following sections.

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## 3 Information sharing

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### Introduction to information sharing

While much has been discussed about the potential for buying and selling over the Internet, the main use of e-commerce for businesses today is effective information sharing.

In this section, we discuss the advantages of using e-commerce to share information.

#### Advantages of using e-commerce

Information sharing	Transacting	Service and support
<ul style="list-style-type: none"><li>• Access to new markets and customers</li></ul>	<ul style="list-style-type: none"><li>• Sales in new markets</li></ul>	<ul style="list-style-type: none"><li>• Retention of customers</li></ul>
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<ul style="list-style-type: none"><li>• Cost savings</li></ul>		

Information can be shared with the customer using the Internet, with business partners and suppliers using an extranet, or internally using an intranet.

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## 3 Information sharing

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### Access to new markets and customers

The media hype about the Internet and e-commerce means that a lot of Irish companies have jumped on the bandwagon and reached the "hanging a website" stage in developing an e-commerce strategy. The advantage is an opportunity to reach new markets and potentially develop a new distribution channel. However, a badly thought out website may do more damage than good if it compares unfavourably to competitors.

- The web site

A web site will inform the general public (e.g. potential customers and suppliers) of the business offering. The site also offers interaction with the business via e-mail.

- Interaction

More advanced interactive sites will include a platform to enable the visitor to input specific information requirements. A database engine then constructs customised web pages.

An example of an interactive database-driven Irish site is an online motor mart. This site allows the visitor to create customised web pages which detail a selection of appropriate cars / suppliers in Ireland which meet the individual's personal search criteria. The web pages are created when the visitor inputs preferences such as the make of car and / or the location and / or the price they are interested in.

- Advertising

Attracting customers to a website requires advertising through the usual media of TV and print but also through other websites using banner advertisements or link buttons. The most popular sites for advertising are those which have the greatest traffic such as search engine sites.

Currently, the most popular Irish sites for advertising include the Internet Service Providers (ISP) home pages and specific advertising from employers on recruitment sites such as [www.jobfinder.ie](http://www.jobfinder.ie).

- Capturing customer information

Reviewing the number of "hits" and the most popular pages visited helps a company understand what interests potential customers. The popular on-line feedback form is also a valuable tool in reviewing a site's effectiveness.

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## 3 Information sharing

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### Improved communication and internal efficiencies

While the business to consumer market is still developing, the advantages of using Internet technologies to share information internally, i.e. an intranet, have already been realised by many companies. Some of the common applications of an intranet are listed below:

- Marketing, customer service and support

Having immediate access to information from multiple data sources ensures that customer requests can be attended to immediately.

The Irish sales office of Dell, the US multinational computer manufacturer, has been using an intranet since the beginning of 1998. Telesales operators, therefore, can respond to telephone queries with the most up-to-date consumer purchasing information, including the availability and price of products.

- Product development

Intranets encourage communication and collaboration between people, regardless of geographical separation. This benefit can be successfully applied to the product development process.

For example, Hewlett Packard's intranet, which can be accessed by over 125,000 users, has over 100 private news groups for employees. According to Paul Acton, Business Development Manager for Europe, Middle East and Africa, this encourages employees to share ideas, and discuss product improvements and opportunities for new products.

- Human resource management (HRM)

Intranets can be used to improve the effectiveness and efficiency of in-house training. An individual can often address their own training needs rather than having to rely on others. Other HR functions such as appraisals, internal recruitment, etc., can easily be deployed on an intranet.

Employees at Dell use the company intranet to access up to date training manuals and on-line tutorials on software packages such as PowerPoint and Excel.

- Teleworking

An intranet facilitates the increasing trend of teleworking, i.e. it provides the opportunity for employees to work remotely, on a client's site or from home.

Windmill Lane Pictures, based in Dublin, uses a form of company intranet which allows the head of multimedia to work at home in England for three days of every working week.

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## 3 Information sharing

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### Closer links with business partners / suppliers

Allowing specified external parties, such as suppliers or key customers, to have access to part of a company's intranet is what creates an extranet. Large organisations have for many years been using private networks for EDI and Electronic Funds Transfer (EFT) between key suppliers and partners. The increase in usage of the Internet in recent years, however, means that e-commerce is now easily accessible to individuals and all sizes of businesses.

- Enhancing existing distribution channels

Assurelink is an extranet wholly owned by the top nine assurance companies in Ireland and developed in conjunction with the Irish Brokers Association. Assurelink is used by insurers to inform and exchange information with brokers to improve customer service and make significant cost savings.

Assurelink currently provides:

- Secure e-mail
- Web access
- Access to product information
- Access to each member insurer's client and policy database.

According to Tom Rourke, Network Director of Assurelink, "future plans call for implementation of full electronic trading between brokers and insurers i.e. all information flows will be electronic and all processes will be facilitated electronically. In addition, we are also examining how we can enable the broker to provide support for the end customer electronically."

- Value added communications

Uniphar plc uses an extranet to share information with their business customers. Uniphar is a wholesaler of pharmaceutical products to a large proportion of the pharmacies throughout Ireland. Uniphar uses the extranet to provide pharmacies with access to recent product, pharmaceutical and medical information, as well as current issues forums in the pharmaceutical sector. The extranet also provides a platform to identify the availability of pharmacy locums.

- Joint projects

An extranet enables in-house staff developing a new product to co-ordinate easily with suppliers on product specifications and production methods. The extranet removes compatibility problems allowing all participants to work as a single team, regardless of organisation. Customers can also be added to the loop where required.

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## 3 Information sharing

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### Cost savings

The use of the Internet, intranets and extranets to share information can result in significant cost savings. Some examples of these cost savings are outlined below

- Printing, publication and distribution costs

Communications that are produced on paper, and which require frequent updates, generally incur volume-related, high printing costs. Transfer of these communications to an intranet can result in substantial cost savings.

By putting a directory of general company information on their intranet, General Electric saves US\$240,000 a year in printing costs alone.

According to Interforum UK Ltd, British Telecom made a 5-1 return on the investment made on its intranet. This figure is derived from savings made on storing and printing of documents (previously around US\$20M a year).

Hewlett Packard estimate that, due to their intranet, annual savings in the IT and administration costs are in the region of US\$200M. In addition, printing and distribution costs have been reduced by approximately 70%.

- Employee time

An advantage for insurers using Assurelink is the reduction in broker support costs. The electronic access to information reduces the need for employees to telephone or fax brokers with policy quotes. Customer service levels are also enhanced as broker support staff are now needed only to respond to exceptional requirements of customers. Assurelink activity peaks mid-morning and mid-afternoon as per traditional call centre activity, however, interestingly activity has been recorded at all times except in the hours from 2am through to 5am, effectively lengthening the working day.

- Physical presence v virtual presence

Until the expansion of the Internet, access to new markets often involved setting up retail outlets, a branch network or a direct sales force. The cost of building an effective interactive site represents good value for money when compared to physical market entry strategies.

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## 4 Transacting

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### Introduction to transacting

For many, the definition of e-commerce is confined to the process of transacting using Internet technologies.

Transacting can be with customers via the Internet or with third parties to the supply chain, via an extranet.

#### Advantages of using e-commerce

Information sharing	Transacting	Service and support
<ul style="list-style-type: none"><li>• Access to new markets and customers</li></ul>	<ul style="list-style-type: none"><li>• Sales in new markets</li></ul>	<ul style="list-style-type: none"><li>• Retention of customers</li></ul>
<ul style="list-style-type: none"><li>• Improved communication and internal efficiencies</li></ul>	<ul style="list-style-type: none"><li>• Improved supply chain</li></ul>	<ul style="list-style-type: none"><li>• Internal focus on customer</li></ul>
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<ul style="list-style-type: none"><li>• Cost savings</li></ul>		

### Sales in new markets

Many companies use the Internet not only to interact with web site visitors but also to sell their products and services to them. Forrester, the research company, indicates that consumer spending on-line was only US\$240m in 1994, however, this grew to US\$993.4M in 1996. The company predicts that consumer commerce will reach US\$6.9BN by 2000.

- Indirect sales

There are indirect sales web sites which use the web to display pictures, product sizes etc. These sites do not take orders and, therefore, only facilitate the sales process.

- Direct Sales

In contrast, direct sales sites are a distinct distribution channel and allow the customer to order and pay on-line. Examples of Irish companies currently selling over the Internet include Kenny's book shop and specialised giftware companies such as Royal Tara China and Frank Clark (marketing specialised painting kits). A major market for many of these companies is the US where the level of home PC penetration is higher than it is in Ireland. According to Lisa Doolan, Marketing Adviser for Enterprise Ireland (formerly the Irish Trade Board), approximately 90% of enquiries / orders for Irish companies selling gift items over the Internet, come from the US market.

- Shopping malls

Some ventures have unsuccessfully tried to transfer existing business models to the web, for example, by setting up a virtual shopping mall. The main reason for their limited success is that the web allows users to be very specific. If wishing to purchase a particular product such as, for example, a Walt Disney Mickey Mouse watch, then the search engine would direct the customer to the Walt Disney site rather than to a general retailer.

- Payment

The lack of public confidence in electronic payment systems is considered as one of the main factors constraining business to consumer e-commerce. This area is dealt with in more detail in Section 9 "Constraining Factors".

- Fulfilling the transaction on-line

Some sites are able to accept an order and fulfil the transaction online. Software companies download software purchases over the Internet and CBT Systems, providers of interactive education software, offers its library of interactive education software over the Internet. Other examples include Cerberus 1996 which launched a Digital Juke Box in January 96. Registered customers, using a "Cercure Identification" number (CID) issued on receipt of credit card details, can download selected tracks onto their hard disk.

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## 4 Transacting

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### Improved supply chain

Business to business commerce is more significant than the business to consumer market. GE Lighting, a division of the US giant General Electric was one of the first companies to streamline its supply chain. In 1997, GE sourced around £1BN of products and services using its extranet and predicts that this will grow to £4BN this year.

- Tendering

An extranet provides a more efficient method for suppliers to respond to invitations to tender. Product specifications, delivery time, etc., can all easily be accessed by the supplier on the company's extranet reducing the time taken to respond and hence shortening the production cycle.

- Customer ordering

An extranet can allow customers to place orders, receive invoices, track shipments and process payments.

Boeing, in the US, launched their on-line spare parts extranet in October 1996. There are 2,500 enquiries per day from customers and US\$25M of orders have been transacted via the web since its launch.

- Just-in-time ordering

Large retailers are using extranets to communicate with suppliers and streamline their inventory management systems.

For example, inventory records are constantly updated through swiping bar-codes when products are sold. The supplier can then be alerted via e-mail when new stock is required or the supplier can have access to the retailers stock levels and can replenish its product in accordance with service level agreements, thus removing the need for purchase orders.

### Cost Savings

The attractiveness of the Internet, as a channel, is the low cost per transaction, when compared to other channels, and the reduction in paper based transactions.

- Low cost channel

The average cost per transaction, for a financial services provider, is greatly reduced when using Internet technologies, as illustrated by the following table:

Table 3 Average cost per transaction per channel

Channel	Cost per financial transaction
Branch full service	US\$1.07
Telephone average	US\$0.54
ATM full service	US\$0.27
Internet Banking	US\$0.01

Source: Unisys

- Paperless sourcing from suppliers

The switch to paperless sourcing using an extranet allowed GE to cut the time taken to generate a request for a proposal from two weeks to less than one day. The company estimates to have obtained overall savings of 15-20% as a result of the process.

- Extranet v EDI

An extranet is an enhanced form of EDI, which has successfully streamlined the supply chains of car manufacturers, supermarket chains and pharmaceutical companies for the past twenty years. However, the complexity and the relatively high cost of EDI has traditionally excluded smaller companies. E-commerce, using Internet technologies, allows companies of all sizes to realise these benefits.

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## 5 Service and support

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### Introduction to service and support

The uniqueness of Internet based e-commerce is the opportunity it offers businesses to enhance the servicing and support element of the sales cycle in a cost effective manner.

In this section, we discuss the advantages of using e-commerce to service and support the customer.

#### Advantages of using e-commerce

Information sharing	Transacting	Service and support
<ul style="list-style-type: none"><li>• Access to new markets and customers</li></ul>	<ul style="list-style-type: none"><li>• Sales in new markets</li></ul>	<ul style="list-style-type: none"><li>• Retention of customers</li></ul>
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## 5 Service and support

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### Retention of the customer

The Internet allows businesses to cost-effectively collect customer information and understand their preferences. In addition, the business can also use this channel to reinforce existing relationships.

- Creating a customer relationship

Kennys bookshop in Galway is a good example of how the Internet can be used to provide customised service. Customers are invited to register by e-mail to the Book Parcels Club. Every few months, Kennys will select a parcel of books tailored to each readers interests and budgets. This service is currently provided to approximately 1300 registered clients across the world.

- Assisting the customer to use the product effectively

Microsoft uses this aspect of e-commerce effectively by providing three levels of support;

Primary	Free on-line support including frequently asked questions (FAQs), articles and newsgroups
Priority	Web response and Pay Per Incident (PPI)
Premier	Contractual technical support with consulting arrangements

Microsoft has classified its customers into three user groups; individual customers, developers and corporate customers. Primary and Priority support are available to all three and Premier support is available on a contractual basis to large corporate customers only. Bank of Ireland offer internet training, in conjunction with The Irish Times, through their Banking 365 online service.

- Efficient cross-selling

There is a clear opportunity for cross-selling to Internet customers. For example, when a customer applies for a car loan on the Internet from a broad financial services provider, there is an obvious opportunity to cross-sell car insurance. Other features, such as offering price discounts for customers with a number of products, could also be introduced. The overall aim is to sell more to existing customers and reduce the customers propensity to shop around.

- Offering new services

Federal Express (Fedex) are extending the service they provide to customers further by introducing a business to business service. Businesslink provides customers with their own customised web page on the Fedex server which displays web catalogues, and takes orders via the customer's server, with shipping handled through Fedex. The benefit for both the customer and Fedex is increased business.

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## 5 Service and support

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### Internal focus on the customer

- Using customer feedback to improve the product

Information on customer preferences and suggested improvements in existing services or products, which is easily collected via an extranet, can all be used to develop the next generation of products.

- Information products

In the traditional business model, information is a support mechanism which helps monitor and control the business processes such as production, marketing and sales. The additional value of information collected via Internet technologies is that it can be used as a product in itself. For example, publishing the answers to FAQs, and collecting and republishing customer solutions to frequent problems. For example, the website of a tourist destination could publish the top ten places to see or things to do, as voted by previous visitors, to encourage new guests and to ensure they enjoy their visit.

### Cost savings

- Self service proposition

Fedex has been one of the pioneers in using extranets to serve customers.

Through the Fedex extranet customers can make a shipment and track the progress of their packages. This provides the customer with an easy to use self-service proposition, which reduces service costs for Fedex and, hence, the charges made to the customer.

- Customer satisfaction

In 1997, Cisco Systems, providers of software for networking via internet, had US\$3.2BN in sales over the Internet, with cost savings of US\$320M. In the same year, customer satisfaction ratings increased by 20%.

The challenge, however, is to translate customer satisfaction into customer loyalty.

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## 6 Summary of the advantages of e-commerce

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Table 4 Summary of the business advantages of e-commerce using Internet technology

E-commerce technology	Potential business advantages
Intranet	<ul style="list-style-type: none"> <li>• Low cost method of providing a private corporate network</li> <li>• Structured, easy to use systems</li> <li>• Leveraged intellectual capital and harnessed employees skills and ideas</li> <li>• Improved co-ordination of widely dispersed resources</li> <li>• Enhanced information for decision making</li> <li>• Reduction in errors due to greater automation</li> <li>• Cost savings in training, corporate, administrative and operational communications</li> </ul>
Internet	<ul style="list-style-type: none"> <li>• Low cost opportunity to reach new markets</li> <li>• Stronger customer relationships leading to improved customer satisfaction</li> <li>• Faster information gathering and response time</li> <li>• One-to-one marketing, semi or fully automated customer service and support</li> <li>• Customisation of product and market focused, collaborative product development</li> <li>• Reduction in overhead costs such as sales support and customer queries</li> </ul>
Extranet	<p>In addition to the advantages listed for the Internet, an extranet will facilitate:</p> <ul style="list-style-type: none"> <li>• Improved supply chain communications and co-ordination</li> <li>• Shorter lead times in supply</li> <li>• Increased effectiveness of business partnerships</li> <li>• Reductions in cost of supply and sales</li> </ul>

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## 7 E-commerce applications in practice

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E-commerce is currently challenging and improving business processes in many industries. In this section, we look briefly at the opportunities and developments in e-commerce in the following sectors;

- Healthcare
- Financial services
- Tourism

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## 7 E-commerce applications - Healthcare

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Increased customer expectations in the healthcare market in Ireland have placed the focus on technology as an enabler of improved customer service. The technology paradox in healthcare is that while technology can reduce the costs of care by improving productivity and reducing the length of in-patient stays, the cost of investment can be prohibitive.

Within the healthcare sector, there is a necessity for many individuals to be able to access information about patients. The management of large amounts of information relating to patients within the healthcare system has traditionally been a labour intensive and a time consuming process. For example, many medical staff may need to gain access to laboratory results, request forms, reports or discharge summaries relating to an individual patient.

An intranet is currently being used by many healthcare organisations and hospitals to improve customer service, improve internal efficiencies and reduce costs. Hospitals such as the Beth Israel in Boston and the Regenstrief in Indiana use a hospital intranet to link together all individual hospital systems and create the opportunity to check different parts of the data against each other. For example, doctors receive e-mail warnings if they prescribe inappropriate drugs to a patient with allergies or administer an incorrect dose. (Source : BMJ).

A Dutch healthcare firm, Heel General Hospital, intends to go one step further in order to deliver better customer service to patients by using an extranet which gives patients access to their own health records. The extranet has an added advantage in that it enables the patient to find out about a particular condition, as well as sourcing information about a procedure or treatment they may be receiving in the future.

Teaching hospitals around the world keep in contact through Medline an Internet based information service.

A range of opportunities exist for Irish hospitals including, for example, allowing hospitals to connect via extranets with off-site GPs, outpatient clinics or more remote hospitals or clinics.

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## 7 E-commerce applications - Financial services

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The financial services market is facing a number of changes including increased competition from non-traditional entrants, post EMU competitors and single product providers. In addition, the traditional distribution channels are being challenged by telephone, Internet and non financial services retail outlets. Value for money is seen as the most important customer expectation in an environment where customer focus is increasingly the key success factor.

Within the financial services sector we look at two Irish players with e-commerce interests:

1. A financial services provider
2. A software manufacturer to the financial services sector

The financial services provider

Internet banking allows the customer to perform common banking transactions over the Internet e.g. statement enquiry, bill payment and funds transfer.

Although figures quoted in table 3, page 17 are US based statistics, the message to Irish and UK banks is very clear; there are very attractive potential cost savings to be made from effectively utilising e-commerce.

Currently the two banks offering Internet banking in Ireland are:

- Bank of Ireland
- AIB Bank.

Both banks started on-line banking transactions in 1997 and provide the following range of services to personal account holders:

- Transfer of funds between customer's different internal accounts
- Payment of bills to a limited range of utility vendors e.g. Bord Gáis, Electricity Supply Board
- Account statements
- Cheque searches
- Balance queries.

Ulster Bank, National Irish Bank, and The Irish Permanent currently have only information-based web sites but all plan to implement on-line transaction services in the near future.

Bank of Ireland have recently added customised statements to their Banking 365 online features. The online service has attracted 9,000 requests, with 7,000 active customers, 67% male and 33% female. In addition to Banking 365 online, Internet banking for personal customers, Bank of Ireland also provide "Commercial Electronic Banking"; as the business alternative. Business customers are able to view branch retail, international banking, credit card and treasury account information. Additional functionality includes funds transfer, third party payments, same day money transmission and EFT (e.g. for payroll / supplier payments). Value added services for the business customer include reporting functions, market commentary and the facility to export data to a host of standard software packages.

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## 7 E-commerce applications - Financial services

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According to Conor O'Toole, Head of Internet banking in Bank of Ireland, business to business commerce will be the key growth area and they are exploring banking initiatives in this area. Bank of Ireland have found that the previous "wait and see" attitude of customers and suppliers is now beginning to turn into action as customers become more and more interested in the advantages of personal and business Internet banking.

E-commerce has not yet meant major organisational structure changes for the industry. Bank of Ireland have set up a designated business unit known as Internet businesses, to focus on e-commerce and the Internet. In addition, other business units are starting to identify Internet specialists within their own units although it has not yet seeped down to branch level.

It is likely that the Internet will evolve as a fully fledged channel for the majority of financial services e.g. loan and mortgage applications and share buying. Financial advice services will also open up on the Internet enabling customers to interact with financial advisors on line.

The financial services software manufacturer

FM Systems (FMS), founded in 1987, is a Dublin based original software manufacturer to the global financial services industry. FMS pioneers the brand Allfinanz, a suite of software enabling providers of financial services to take a web-based approach to how they market and sell their products.

Allfinanz products combine an automatic underwriting facility with browser-based or Internet technology. For the first time, it enables a consumer to go to a provider's web site hosting Allfinanz software, get a quotation, be automatically underwritten, accept the terms and place themselves on cover all at one sitting. FMS believe that this in itself creates a brand new market, namely the purchase, rather than sale, of life assurance and related products. It also creates a new customer, the 'virtual' customer, and a new channel for distributing products, the virtual channel.

However, the company believes that the real growth in financial services in 1998 will not come from the Internet as a new channel. Instead, it will come from the use of Internet technology to enhance existing distribution strategies and channels. Jim Maher, CEO / MD of FMS explains: "Our software can do two things for providers; firstly, it creates the virtual channel in its purest sense, using the consumer-to-provider medium of the Internet. Secondly, it 'virtualises' the existing channels, i.e. the call centre, broker / agent and bank branch to the consumer. This is because of the universal language that is browser technology, either Netscape or Internet Explorer."

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## 7 E-commerce applications - Financial services

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Providers with established broker relationships can have their brokers dial into an extranet and guide their clients through to the point of purchase on the broker's premises. Bancassurers can employ the same tactic in their bank branches with an intranet application, where the only requirement is a PC, a browser and Allfinanz software. Intranet solutions are equally applicable for call centres.

FMS believe the future of financial services business is going to be browser based because of the following advantages it delivers:

For the provider, it means;

- getting products to market and gauging feedback at an unprecedented pace
- reacting quickly to market conditions
- vast time and money savings
- an enhanced relationship with and loyalty from brokers.

For intermediaries, it means;

- faster service for clients and, therefore, a better relationship with their clients
- faster commission cheques.

For the consumer, crucially, it means access, speed, freedom and choice.

Reflecting the development of the markets, early interest in Allfinanz products was from the US. Customers include Reinsurance Group of America (RGA), one of the largest life / reinsurance companies in the US. Closer to home, there are also two UK-based providers who will be rolling out Allfinanz solutions over the coming months, indicating that UK providers are beginning to see e-commerce as a means of genuinely enhancing their distribution strategies.

The message from FMS is that the Internet might be "a tomorrow thing" in terms of bottom line, but Internet technology is too great an opportunity to pass up today.

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## 7 E-commerce applications - Tourism

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A key factor in the success of Ireland as a tourist destination over the next five years will be the ability to market the sector as a whole overseas. A number of companies have already developed this idea

Gulliver Infores (a joint venture between FEXCO a financial services company based in Kerry, Bord Failte and the Northern Ireland Tourist Board) operates an on-line Tourism Information and Reservation System. They are currently building an extranet for their suppliers (accommodation providers). This new website will provide the suppliers with the facilities to allocate their accommodations to the Gulliver Database. Major e-commerce enhancements to Bord Failte's website are currently being jointly developed by FEXCO and Bord Failte. These include a booking facility and an itinerary planner.

Global Golf Ltd. has been in business for the last three years with two sites, [www.globalgolf.com](http://www.globalgolf.com), with a teetime reservation system, and [www.holiday-ireland.com](http://www.holiday-ireland.com). The company has a client base of over 2,000 world-wide and is currently in the process of merging with two US companies.

According to Managing Director, Liam Gallagher, the success of the venture is based on its global reach. Global Golf has formed an alliance with Golfers Guide Magazine, North America's leading regional golf publication. The Golfers Guide network comprises 10 regional magazines reaching nearly 8 million golfers annually. With a banner advertisement across the front of each magazine, Global Golf is establishing itself as a brand name, so that it will stand out amongst the thousands of responses a "golf, Ireland" search will return.

Approximately 60% of Global Golf enquiries come from the US. Golf clubs may set up their own web page, but only the local market will know their name to search for it. According to Liam Gallagher "the idea of Global Golf is that the user will easily navigate their way to a specific location or desired type of course, without having to travel through thousands of other golf related sites."

Through their alliances Global Golf have the marketing budget to reach a global audience.

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## 8 Constraining factors

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### Constraining factors inhibiting the growth of e-commerce

- Management appreciation of e-commerce

A lack of management appreciation of the potential for competitive advantage through e-commerce is a major inhibitor, which is particularly prevalent outside the software industry. A recent survey carried out on behalf of the Institute of Directors revealed important attitudes towards technology. Among the most striking findings of this research was that:

- 50% of UK chief executives were not sure or did not believe that their company gained competitive advantage from IT
- Despite this fact, 82% of surveyed companies set IT strategy at board level.

In addition, senior management are often quick to dismiss the over-hyped short term projections of the impact of e-commerce. However, while Bill Gates of Microsoft concedes that people overestimate what e-commerce will do in two years, he insists they underestimate what it will do in five.

- Infrastructure and bandwidth

This is seen as the main barrier to growth of the Internet business to consumer commerce. However, it is expected that infrastructure and bandwidth will become less of a barrier in the future as the market is deregulated and competition increases amongst telecommunications providers.

The use of the Internet for e-commerce has implications for its infrastructure, including its accessibility, reliability, charging mechanisms and capacity.

If e-commerce over the Internet is to become the norm for the mass market, easy accessibility and reliability is required. Currently, first time users of the Internet often express disappointment at the response time in accessing and downloading information, which can counter the convenience proposition.

The speed of the Internet is also a common grievance against use of the Internet for business purposes. Industry experts believe this will not be a problem for much longer due to:

- Investments in network infrastructure through the public and private sector, e.g. ISDN lines
- More powerful servers and better compression techniques
- Growth of service provision of cable companies helping to relieve congestion
- New digital television broadcast channels who may provide Internet access.

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## 8 Constraining factors

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- Security issues

It is widely believed that the perceived lack of security is one of the biggest barriers limiting the growth of e-commerce in Ireland.

There are four aspects of security which companies need to address to conduct secure electronic transactions.

The table below summarises the security threats that companies face and solutions which overcome these threats:

Table 5 Security issues raised by electronic commerce

Threat	Security solution
1. Information, intercepted, read or modified illicitly	Encryption - software which encodes data to prevent tampering
2. Users gain access to information by using a false identity to commit fraud	Authentication - software which verifies the identities of both sender and receiver
3. Unauthorised user on one network gains access to another	Firewall - software which prevents information from being accessed by those who are unauthorised
4. Parties may deny engagement in transaction	Non repudiation with a digital sign, provides an audit trail for transactions

At the time of writing this report the technology exists to conduct secure e-commerce between business partners.

- Secure payment methods

The issue of transacting business with the general public, however, is not as developed. The main reason for the slow growth to date has been the lack of payment systems.

However, recent advances in security techniques have made Internet payment transactions safer than other methods such as telephone credit card payments or paper-based cheque signatures. Developments include the Secure Electronic Transfer (SET) standards now in use by Mastercard and Visa which will reduce the capacity for fraud and, correspondingly, corporate and public fears. Even if the system gets cracked and an account is broken into, the only way to retrieve money is to transfer it into a different account, producing an obvious paper trail.

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## 8 Constraining factors

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- Cost of Investment

The initial costs for the company includes design of the Web site and payment to the Internet Service Provider (ISP). Costs can vary greatly depending on both the level of sophistication and the functions of the site, e.g. to provide information or to sell products. The next step for some companies with a high volume of business may involve bringing the technology in-house. This would include investing in servers, bandwidth, e-commerce software, security technology and support staff.

The cost of E-commerce software will become increasingly accessible as the software is commoditised.

- Legal and regulatory issues

The legal and regulatory issues governing the Internet concern trading businesses, consumers and national governments. These issues include:

1. Intellectual Property rights

There are currently two EU directives governing the legal protection of computer programmes and databases and the European Commission has identified priority copy right issues for further legislation. Internationally, The Berne Convention provides for minimum standards of copyright protection.

2. Consumer protection

Further harmonisation is required so that consumers are aware which country's laws of contract apply to an international purchase. For example, the contract laws governing return of faulty goods may vary in different countries.

A recent EU directive on personal data prevents the unauthorised use of personal data. This may help to prevent "junk" e-mail.

Other issues include illegal content regulation, protection of encrypted services, and cross border issues.

- Linguistic and cultural issues

To date the development of e-commerce using Internet technologies has been very US centred. This has often given Irish and European companies an excuse to ignore the opportunities. However, the disadvantages exist mainly for non English speaking countries. US web search engines may not always cope with European character sets. While conceding that the Internet may have an "American accent" the opportunities for companies in the UK and Ireland are as immediate as those for US companies.

Business to consumer e-commerce in the US is probably helped by the strong mail order culture that already exists. However, as businesses start to make a low cost proposition for products and services over the Internet the appeal should strengthen in the Irish and UK markets.

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## 9 The industry view

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### Quotes from Irish practitioners

#### Why should I be thinking about e-commerce?

"One can think of e-commerce (i.e. internet driven business change) in one of two ways, firstly as a force for change in traditional customer acquisition and product distribution, or, secondly, as a force capable of changing the industry structure over time. Smart companies are equally and concurrently concerned with both."

Conor O' Toole, Head of Internet Banking Businesses, Bank of Ireland Group

"Before you begin to develop an intranet, you must develop a clear plan identifying exactly what you want to deliver out of the intranet...the information available on an intranet must be of use to the people who use it and it must, therefore, be continually updated."

Barry Collins, Internet Business Manager, UK & Ireland, Dell

"The Internet is the best marketing tool created this century."

Angela Kennedy, Director, Megazyme

"The future of financial services is browser based."

Jim Maher, Managing Director, FM Systems

"To date the security risks associated with e-commerce has inhibited many organisations from exploiting the internet as a business tool. As users gain awareness and confidence in today's security solutions, exchanging information electronically will become the norm."

Paddy Holahan, VP Business Development, Baltimore Securities

"It is the human resource, training and marketing departments of Irish commercial institutions that should be using e-commerce now...it greatly increases the effectiveness of communicating internally with staff and externally with their clients and suppliers. A far reaching e-commerce solution will inevitably strip the old organisational structure to the bone and replace it with an entirely new one that is not based on old or hierarchical structures."

Allen Mc Caskill, Head of Multimedia, Windmill Lane Pictures Ltd.

"One of the greatest benefits by far in having a web site is having a catalogue of the company's products that can be updated on a regular basis, and that is immediately accessible by either trade or the consumer."

Lisa Doolan, Marketing Adviser, Enterprise Ireland

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## 9 The industry view

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"To date, the return we have received on our investment on the Internet has exceeded our expectations. We added fully integrated mortgage application processing functionality to our web site in October 1997. We set ourselves an initial target of £0.5M of new mortgages in the first 18 months, we met our target after only six months....One of the most exciting developments was when we were able to help an individual living in Canada return home by arranging his mortgage through our Internet services."

Paul O' Grady, Head of Business Excellence, ICS Building Society

"E-commerce represents an exciting opportunity for businesses, but a technology capability is not a business strategy. As with all initiatives, understanding the strategic implications, for your business and the marketplace, is the key to success."

David Duffy, Managing Director, Prospectus Strategy Consultants

"The critical issues for senior management to consider are the business implications and opportunities presented by the new electronic infrastructure that has emerged from the evolution of computing and communications technologies...The successful organisations of the future will be those that have developed the mindset and models for thinking about the business areas, business strategies, and business processes enabled by the evolving electronic infrastructure."

John Mooney, Lecturer in e-commerce, UCD

"In my view, the intranet / extranet is already up and firing on all cylinders...it only remains for e-commerce between parties that don't know each other to take off. The area governing the growth is the lack of payment systems...until the technologies are fully proven we will not see the explosive growth forecasted by the IDC. But we will see it in the next two years or so, make no mistake."

Conall Lavery, Managing Director, Entropy

"E-commerce is neither a buzz word nor an aspiration. It is a business strategy that has fundamentally changed the way our competitors do business. Indigo has invested in this strategy and is reaping the rewards. Irish industry must do likewise if for no other reason than to maintain and increase its competitive advantage and customer base in the face of international competition. Can you afford to lose out?"

Ciaran Nelis, Web Development Sales Manager, Indigo

Electronic commerce means conducting business electronically

Conducting business electronically means conducting, managing and executing transactions (includes exchanging information between parties as well as the exchange of money for goods and services) using Internet technologies.

The Internet is a system of linked computer networks, that facilitates data communication services such as remote login, file transfer, e-mail and newsgroups. It is global in scope and is strongly decentralised.

The Internet is also referred to interchangeably as "the web."

The world wide web (www), however, is the global hypertext system that uses the Internet as its transport mechanism. The hypertext system allows the user to navigate between documents by clicking hyperlinks, i.e. the familiar "point and click" on text or graphic link buttons.

An intranet is a private network within an organisation which uses Internet technology, but has its own lines and routers, or a closed user group on the public network. In either case, the intranet is only accessible by individuals who work within the organisation.

An extranet is an extended intranet, i.e. it provides selective access to specified external parties such as preferred suppliers and customers.

A firewall is a combination of hardware and software applications that control access in and out of a company's network, i.e. protects the interface between the private company network and a public network such as the Internet.

EDI (Electronic Data Interchange) is the electronic communication of business transactions such as orders, confirmations and invoices between organisations. Historically, completed over private networks called VANs (value added networks).

EFT (Electronic Funds Transfer) is the transmission of electronic payments

FAQs are frequently asked questions

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## 10 Glossary

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AIB Bank	<a href="http://www.aib.ie">www.aib.ie</a>
Baltimore Securities	<a href="http://www.baltimore.ie">www.baltimore.ie</a>
Bank of Ireland	<a href="http://www.boi.ie">www.boi.ie</a>
Boeing	<a href="http://www.boeing.com">www.boeing.com</a>
Bord Gáis	<a href="http://www.bge.ie">www.bge.ie</a>
British Telecom	<a href="http://www.bt.com">www.bt.com</a>
CBT Systems	<a href="http://www.cbtsys.ie">www.cbtsys.ie</a>
Cisco	<a href="http://www.cisco.com">www.cisco.com</a>
Dell	<a href="http://www.dell.ie">www.dell.ie</a>
Electricity Supply Board	<a href="http://www.esb.ie">www.esb.ie</a>
Enterprise Ireland	<a href="http://www.enterprise-ireland.com">www.enterprise-ireland.com</a>
Entropy	<a href="http://www.entropy.ie">www.entropy.ie</a>
Federal Express	<a href="http://www.fedex.com">www.fedex.com</a>
Fexco	<a href="http://www.fexco.ie">www.fexco.ie</a>
FMS	<a href="http://www.fms.ie">www.fms.ie</a>
Forrester Research	<a href="http://www.forrester.com">www.forrester.com</a>
General Electric	<a href="http://www.ge.com">www.ge.com</a>
Hewlett Parkard	<a href="http://www.hp.com">www.hp.com</a>
ICS Building Society	<a href="http://www.mortgagestore.ie">www.mortgagestore.ie</a>
Indigo	<a href="http://www.indigo.ie">www.indigo.ie</a>
Interform UK Ltd	<a href="http://www.interforum.org">www.interforum.org</a>
Kilkenny Design	<a href="http://www.blarney.ie">www.blarney.ie</a>
Kompass Ireland	<a href="http://www.kompass.ie">www.kompass.ie</a>
Mastercard	<a href="http://www.mastercard.com">www.mastercard.com</a>
Megazyme	<a href="http://www.megazyme.com">www.megazyme.com</a>
Microsoft	<a href="http://www.microsoft.com">www.microsoft.com</a>
Windmill Lane Pictures	<a href="http://www.windmilllane.com">www.windmilllane.com</a>
John Mooney	<a href="http://www.ucd.ie">www.ucd.ie</a>
Prospectus	<a href="http://www.prospectus.ie">www.prospectus.ie</a>
Reinsurance Group of America	<a href="http://www.rgare.com">www.rgare.com</a>
Royal Tara China	<a href="http://www.royaltara.ie">www.royaltara.ie</a>
Touch Tel	<a href="http://www.touchtel.ie">www.touchtel.ie</a>
Uniphar	<a href="http://www.uniphar.ie">www.uniphar.ie</a>
Unisys	<a href="http://www.unisys.com">www.unisys.com</a>
Visa	<a href="http://www.visa.com">www.visa.com</a>