E-COMMERCE

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E-commerce is now synonymous with the Internet. Users - private or corporate - can communicate with web-based online stores using a web browser such as Microsoft Explorer or Netscape Communicator. An Internet store provides all the facilities a customer needs, including a product catalogue, a virtual shopping basket, and a secure credit card payment system.

In theory, the Internet has no geographical, political or temporal boundaries. It has a common infrastructure available to all. The universal availability of access to the Internet, while not radically changing logical processes, has created new opportunities and removed some of the physical limitations of traditional methods of conducting business.

CAT Paper 5 and ACCA Qualification Paper F1 students may be interested in the social and employment consequences of e-commerce. For Paper P3 candidates, e-commerce is now a weapon of competitive strategy, offering the possibility of new products and services, more efficient ways of performing traditional business processes, and new distribution channels.

BUSINESS-TO-BUSINESS (B2B)

E-COMMERCE

E-commerce can be simply defined as conducting business transactions over electronic networks by way of linked computer systems. When the concept was originally introduced, it was envisaged that it would mainly involve business organisations linking their computer systems to conduct business with each other more speedily, efficiently and economically.

B2B e-commerce is well-established and is still a fast-growing area. Examples include companies linking to their suppliers to facilitate Just-In-Time (JIT) stock control. To enable this to happen, participating companies have had to agree on interface and application standards. Many office equipment and consumable suppliers can now take orders online and provide direct delivery to business customers.

One of the key drivers associated with B2B e-commerce is the overhaul of inefficient trading processes. Companies can link directly to suppliers, check availability of products, and then place orders and track shipments without delay or human assistance. In an increasingly competitive world, the best businesses are using new technologies to clarify customer demand, target marketing efforts more precisely, tighten business processes, and investigate new methods of distribution.

BUSINESS-TO-CONSUMER (B2C)

E-COMMERCE

The volume of B2B e-commerce has been overtaken in the last five years by the growth of consumer e-commerce applications as the general public (B2C) increasingly conduct business over networks with commercial and public sector organisations. The catalyst for B2C e-commerce has been the growth in the number of people who have access to both a home computer and the Internet. Most e-commerce applications are now Internet-based, trading goods and services. Other terms used to refer to this practice include e-business, e-tailing and e-trading.

BUSINESS ACTIVITIES

Commerce refers to the activities in which an organisation or individual engages in order to complete a transaction. Most stages in the lifecycle of a product or service can be conducted in an e-commerce environment. For example, a book retailer might undertake the following e-commerce activities:

- market research
- advertising
- providing product information
- contacting customers
- taking orders
- tracking shipping
- receiving and processing payments
- ordering stock from publishers.

The list of activities or logical processes does not differ significantly from the list of business activities that the organisation has always carried out. The difference is that the company can conduct its retail business by using computers and telecommunications technologies instead of, or in addition to, operating stores.

BENEFITS FOR BUSINESS

Some of the organisational benefits of doing business over the Internet include the following:

- Business can be conducted 24-hours-a-day, 7-days-a-week.
- Products can be supplied to anyone, anywhere in the world (as long as there is an economic and reliable distribution channel).
- Suppliers can respond quickly to customer requirements.

- Suppliers can build a one-to-one relationship with customers. Through search tools and customer profiles, information can be tailored to customer requirements on demand. Direct communication results in improved pre and post-sales support.
- Customers can access up-to-date information - expensive printed catalogues and service guides can be replaced by a single electronic product database (which must be kept up to date at all times).
- E-mail distribution is cheaper than direct mail, and providing the information on a website is cheaper still if users can be encouraged to access it for themselves.
- The overheads of maintaining a physical retail outlet are reduced.
- Routine business operations can be automated, saving time and money - the supply chain is shortened so delivery times and costs are reduced.
- Staff costs can be reduced - standard enquiries and sales can be handled automatically via software, leaving staff with time to handle the difficult or higher added-value transactions.
- Entirely new services can be developed - for example, software and music can be delivered instantaneously and cheaply via the Internet.

THE SELF-SERVE ECONOMY

E-mail and websites are as easily, and readily, accessible as telephones and faxes. As a result, consumers are becoming more confident in the use of electronic media to conduct all kinds of transactions, from transferring money between bank accounts, to reserving film or theatre tickets, to ordering books online. The willingness of consumers to help themselves, and to make new technologies part of their daily lives, bypassing the shop assistant and customer service representative, is the principal characteristic of the self-serve economy. Self-serve characteristics, valued and required from an e-commerce service include availability, reliability, choice, speed, and convenience. A well-run and efficient e-commerce operation will deliver the following benefits to consumers.

- 24-hour shopping, 7-days-a-week.
- Global choice and access to a wider range of goods and services than in any local retail store or shopping centre.
- Lower prices - because of reduced operating costs and wider competition.
- Ease of use when identifying and browsing the choices available.
- Rapid response to orders - not as fast as retail off-the-shelf, but few retail chains provide their complete product offering at every outlet, and frequently products have to be ordered.
- For products that can be delivered electronically, such as software, video, newspapers and music, supply is instantaneous without any delay caused by intermediaries.

SOCIAL AND EMPLOYMENT COSTS OF E-COMMERCE

Although the benefits of e-commerce are significant, they do not come without the risk of some longer-term social costs.

- If substantial numbers of residents of small communities choose to shop on the Internet, local stores may not be able to compete and may have to close. For those who do not have, or do not wish to have access to the Internet, such closures could lead to social deprivation.
- Many aspects of electronic shopping are automated and fewer staff are needed to process orders, leading to a possible rise in unemployment in certain economic sectors.
- E-commerce businesses have access to global markets but they are also subject to global competition. This means that costs and working practices need to remain flexible to cope with changing consumer demands and competitor activity. Suppliers can choose to operate from offshore low-cost bases. This has a particular impact on high wage/high social cost economies which may find that jobs are exported to lower cost economies.
- Flexibility to operate offshore and to buy internationally means that it is very difficult for national governments to police the legality of operations and to ensure the quality and safety of some products supplied (eg medicines).
- Ensuring the reliability, security and integrity of data and operations can be a problem - electronic hacking is often one step ahead of the security industry.

E-COMMERCE - A GLOSSARY OF TERMS

INTERNET DEVELOPMENT

E-commerce would not have developed so rapidly without the global network of computers which we now call the Internet. In the 1960s, the US government developed the connectivity standards to network computers for defence research purposes. The agency responsible for managing and developing the network, and linking together universities and defence research establishments, was called the Advanced Research Project Agency (ARPA). The ARPANET became the Internet. At the core of its design philosophy was flexibility and resilience - enabling new computers to be easily linked and, in the event of any catastrophe destroying one or more computers, for the remainder of the network to be able to continue to function.

Over the following 30 years, the US National Science Federation (NSF) played a guiding role in developing the network. The developing Internet was mainly used as a communications tool in the scientific and academic communities for electronically transferring and exchanging research materials. In 1989, the NSF opened the Internet

to commercial network traffic. Then, in 1992, Tim Berners Lee, working at the European Laboratory for Particle Physics, created the World Wide Web (www).

While we tend to use the terms Internet and World Wide Web interchangeably, the Internet describes the entire system of networked computers and the World Wide Web describes the method used to access information contained on computers connected to the Internet. The availability of a common Internet infrastructure - of computers, networks and protocols - and the development of an easy to use Graphical User Interface (GUI) have been the catalysts for the growth of e-commerce. It has created an open community - easy to join and easy to use.

HYPERLINK

This is the highlighted text on a web page. You can click on a hyperlink and be routed to another web page, either on the same website or to a different website anywhere in the world. Hyperlinks are designed and set up to enable consumers to easily navigate and find information and purchase products.

INTRANET

This term refers to a closed community of users, often within an organisation. Intranets are designed to be used for internal business purposes only. It uses the same standards and protocols as the Internet, but with increased password and security protection. Intranet websites can look just like the Internet websites, but normally a firewall surrounds the Intranet to prevent access by unauthorised users. A firewall examines all requests and messages entering and exiting the Intranet and blocks any not conforming to specified criteria.

EXTRANET

An Extranet is an extension of an organisation's Intranet. The difference is that an Extranet is accessible to selected people or groups outside the organisation. Many B2B transactions are made over Extranets. An individual can enter an organisation's public website on the Internet, obtain a password authorisation and then be routed to the organisation's Extranet to conduct transactions and obtain information not available to the public. Extranets are frequently used to connect an organisation's corporate Intranet with the Intranets of the organisation's suppliers, distributors and corporate customers.

WEB BROWSERS

Internet users (private or corporate) communicate through their web browsers (such as Microsoft Explorer or Netscape Communicator) with websites. The web browser is a software utility program with a Graphical User Interface which helps users navigate through the web. It takes a request and then transmits and receives information from other users or information providers. Using a browser, the user does not need to know the format and location of the information required. They can jump from site to site by clicking on hypertext links.

NAVIGATION AIDS

Website developers create navigation aids to enable customers to navigate their way around a website. A navigation aid can be hyperlink text, buttons, and tables of contents or graphical symbols such as icons or pictures. Navigation aids are designed to allow users to visit a website and conduct their transactions instinctively, quickly and easily, moving between pages and re-tracing steps as necessary.

WEBSITE SEARCH TOOLS

An online store can use a search tool to help customers quickly find products. Techniques include simple features such as drop-down lists, where customers click a downward pointing arrow to display a list of products or specifications from which they may choose. Another technique is inviting the entry of key words which trigger a site search. The challenge for the designer is to pre-identify as many alternative (or even misspelt) versions of potential key words as possible. Most website search tools use indexing robots - software which electronically visits a site, follows all links contained therein, and automatically indexes the contents.

DATABASES

Online businesses need to access, store, retrieve, amend, and generate data in a wide variety of formats. A database is defined as a collection of information that is organised so that the required information can be quickly retrieved, amended if necessary, and then the electronic image updated. There are a number of proprietary database management systems that can provide the necessary functionality - and operate in a real time processing environment, with high volumes - while maintaining security and availability.

FORM DESIGN

An e-commerce enabled website must include mechanisms for customers to enter information such as their name, address, and credit card number. This information is then stored in a database. Website developers create forms for customers to complete. Most electronic forms comprise text boxes combined with drop-down lists to simplify tasks for the customer and to avoid transcription errors where possible.

SHOPPING CARTS AND CHECKOUT

Many online stores use the image of a shopping cart (or trolley) to characterise the online shopping process. The shopping cart is now considered a standard component of all online stores. A shopping cart records the ongoing results of the ordering process, generated from a database, and is effectively the interface between the customer and the database. In the browser, these results appear on a web page that is updated every time a customer adds an item to the cart. Shopping carts are usually set up so that the customer can view all details of the ongoing transaction on request,

at any time. When all transactions are complete, the customer is invited to go to the checkout to complete the purchasing process.

The checkout is usually located on a secure server that protects customer payment information during its transmission. For small businesses, standard software modules can be bought in for the shopping cart and checkout processes. In such cases the payment process is routed to a secure server managed by a specialist company, eg PayPal.

Although a small number of products and services can be distributed electronically, most products need to be physically delivered. Once a commitment to purchase has been made, ensuring that distribution is controlled, speed and visibility are critical success factors for the online store. Most online stores offer a variety of shipping methods with different timescales and prices. Some online stores will choose shippers who have 'track and trace' monitoring procedures available online. Customers are provided with the identity of the shipping agent and a reference for their package. They can then track its progress.

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