

2000 International Conference
of the
Academy of Business and Administrative Sciences (ABAS)

on

Emerging Economies

Prague, Czech Republic
10-12 July 2000

**Current Trends in Internet Use: E-Communication, E-Information
and E-Commerce**

by

© **Dr Nada Korac-Kakabadse**

Senior Research Fellow
Cranfield School of Management
Cranfield, Bedford, MK43 OAL, United Kingdom

© **Alexander Kouzmin**

Professor and Foundation Chair in Management
Graduate School of Management
University of Western Sydney
PO Box 10, Kingswood NSW 2747, Australia
International Tel: +61 (2) 9685 9705
International Fax: +61 (2) 9685 9707
E-mail: a.kouzmin@uws.edu.au

and

© **Andrew Korac-Kakabadse**

Professor, International Management Development
Cranfield School of Management
Cranfield, Bedford, MK43 OAL, United Kingdom

Brief Biographies

Nada Korac-Kakabadse is currently a Senior Research Fellow at the Cranfield School of Management. Previously, she was employed as a Senior Information Technology Officer with the Australian Public Service Department of Employment, Education and Training. She has worked for international organizations in Scandinavia, the Middle East and North Africa, as well as for the Canadian Federal Government. Her research interests focus on information technology and organizational dynamics; diversity management; performance improvement in private and public sector organizations and excellence in politics of decision making. She has a BSc in Mathematics and Computing; a Graduate Diploma in Management Sciences; a Master's Degree in Public Administration and a Phd in Management. She has co-authored (with A. Korac-Kakabadse) two books - *The Essence of Leadership* (1999) and *A Study of the Australian Public Service* (1998). She has contributed 14 chapters to international volumes and has published 25 scholarly and reviewed articles. She is co-editor of *The Journal of Management Development*.

Alexander Kouzmin holds the Foundation Chair in Management in the Graduate School of Management at the University of Western Sydney, Australia. His research interests include organizational design; technological change; project management; comparative management; administrative reform; and crisis management. He has published eight volumes of commissioned work. Among these are his edited *Public Sector Administration: New Perspectives* (Longman Cheshire, 1983); his co-edited (with N. Scott) *Dynamics in Australian Public Management: Selected Essays* (Macmillan, 1990); (with L. Still and P. Clarke) *New Directions in Management* (McGraw Hill, 1994); (with J. Garnett) *Handbook of Administrative Communication* (Marcel Dekker, 1997); and (with A. Hayne) *Essays in Economic Globalization, Trans-national Policies and Vulnerability* (IOP Press, 1999). He has contributed chapters to many national and international volumes and has published some 180 papers, including scholarly and review articles in more than 50 leading international refereed journals. He is on the editorial board of *Administration and Society*; *Administrative Theory and Praxis*; *Global Virtue Ethics Review*; *International Journal of Management History*; *Journal of Management Development*; *Journal of Public Affairs Education*; *Public Administration and Management: An Interactive Journal*; *Public Policy and Administration*; *Public Productivity and Management Review*; *Public Voices* and is a founding co-editor of the international *Journal of Contingencies and Crisis Management*, published quarterly since 1993.

Andrew Korac-Kakabadse is Professor of Management Development and Deputy Director of the Cranfield School of Management. He is also European Vice Chancellor for the International Academy of Management. He has worked in the health and social services field and then undertook various consultancy assignments concerned with local government re-organization and large capital projects in developing countries. He is currently a consultant to numerous organizations - ranging from banks; motor manufacturers; high-tech companies; oil companies, police and other public sector organizations and numerous multi-national corporations. He has consulted and lectured in the UK; Europe; US; Russia; South-East Asia; Gulf States and Australia. His current areas of interest focus on improving the performance of top executives and top executive teams, excellence in consultancy practice and the politics of decision making. He recently completed a major world study of chief executives and top executive teams. His data base covered 14 nations and over 7,500 business organizations; including studying the strategic skills of top management in Japan; China; Hong Kong and the US. He is also the Director of the Cranfield Centre for International Management Development. He has published 19 books, 12 monographs and 106 articles; including the best selling books - *Politics of Management*; *Working in Organizations*; *The Wealth Creators*; *Essence of Leadership* (with N. Korac-Kakabadse) and *Success in Sight: Visioning*. He is a co-editor of *The Journal of Management Development*, is the out-going editor of *The Journal of Managerial Psychology* and is the associate editor of *The Leadership and Organization Development Journal*. He has a BSc (Environmental Sciences) (Salford University); MA (Public Administration) (Brunel University); Phd (Management) (Manchester University); Diploma in Psychiatric Social Work (Manchester University); as well as being Fellow of the British Academy of Management, Fellow of the British Psychological Society and Fellow of the International Academy of Management.

Current Trends in Internet Use: E-Communication, E-Information and E-Commerce

Rapid developments in the application and use of the Internet create new opportunities as well as the reformulation of "older problems". This paper reviews current trends in Internet use, realizing that this is a "snap-shot" subject to rapid obsolescence.

The paper clarifies the origins of the Internet and the World Wide Web, critically canvasses what is on the Internet and focuses upon the broadening opportunities for E-Commerce - incorporating E-Channels and E-Marketing. More importantly, the paper highlights emerging problems of Internet abuse, intrusions into privacy and the need for global management of the Internet at a time of increasing exposure and vulnerability of many stakeholders finding themselves dependent on, or addicted to, the Internet.

Introduction

In the late 1920s, John Maynard Keynes, the British economist, wrote that the globalization or integration of the world economy to ordinary British people seemed "normal, certain and permanent" (Keynes, 1981). Although globalization today differs significantly from that of the gold-standard period (1870-1913), as the speed and complexity of "virtual" transactions are incomparably greater, the situation at the end of the 20th Century seems to be similar to that of the late 1920s. However, it remains to be seen whether the surge of the contemporary version of the earlier *laissez-faire* ideology, market fundamentalism, will prove to be as unsustainable within increased globalization; the basic dilemma being that expanding and freewheeling global markets, and the rapid demise of sovereign national states, are both facilitated by the proliferation of information technology (IT), which spans time and space - exemplified by the Internet.

Like its progenitor, paper, invented by Ts'ai Lun, in China, in AD 105, the Internet also breaks the barriers of time and distance and permits un-precedented growth of opportunities. Although, the Internet is not a society, nor a communication method, nor a market, for many of its users it provides all these and more. The Net or the Internet, BITNET, FIDOnet, UUCPnet, and other physical networks, are an infrastructure that facilitates the creation of all these concepts for those who access it.

It is well known that the Net was originally conceived, in the 1960s, as a military project supervised by the Department of Defense's Advanced Research Project Agency (ARPA), created during the Cold War as an information system capable of surviving a Soviet nuclear attack (Miller, S.,1996).

The Net grew in the 1960s when ARPA began research on the development and testing of computer communications networks that would conserve funds by avoiding duplication of computer resources. Those same features of decentralization and flexibility that would make it militarily invulnerable contributed to giving rise to the Internet of today: an international, chaotic, dense bazaar inhabited by all kinds of people. The project attempted to connect incompatible mainframe computers and was named the ARPA Computer Network (ARPANET) - it had two major objectives (*The Economist*, 1995):

- to develop techniques and obtain experience in inter-connecting computers in such a way that a very broad class of interactions were possible; and
- to improve, and increase, computer research productivity through resource sharing.

The ARPANET was a success story and its lasting contribution was to demonstrate how a backbone infrastructure could serve as a connection between gateways (part of a computer programmed to receive messages from one network and transfer these onto another network). Furthermore, E-mail was seen as a source of major productivity increase. By 1983, the ARPANET officially shifted from using NCP (Network Control Program) to TCP/IP (Transmission Control Protocol/Internet Protocol). A key point to TCP/IP's success was its simplicity. The ease and simplicity of operating over various platforms accounted for its continued existence as a *de facto* standard for the Internet up to the present time.

The ARPANET was supplemented by CSnet and, eventually, replaced by the US government funding of its successor, NSFnet. Both CSnet and NSFnet were created by the US Government in response to research scientists' and professors' petition to the National Science Foundation (NSF) for similar connectivity. The NSFnet was also created to provide access to the five supercomputers in the computing centres around the country. The NSFnet became the US backbone for the global network known as the Internet and provided an alternative route for the distribution of Usenet (*The Economist*, 1995).

The original prototype networks, ARPANet in the USA, the network of the National Physical Laboratory in the United Kingdom, CYCLADES in France and other networks around the world, paved the necessary physical infrastructure for a fertile social network to develop. The Internet, BITNET, FIDOnet, other physical networks, the Usenet, VMSnet and other logical networks, have rapidly grown and a critical mass of people and interests has been reached (*The Economist*, 1995).

The initial intention was to produce an easy method of communicating with other users at the same site - to share local bulletin boards and global communication. Usenet grew as a grassroots connection of people. The gateway of ARPANET mailing lists into Usenet attracted a wave of users. These users became attracted to Usenet when two ARPANET mailing lists, SF-LOVERS and HUMAN-NETS, began to appear on Usenet. These lists provided interesting material and discussion, paralleling France's Telecom success with Minitel, which became popular only when Minitel users, serendipitously, discovered that they could have live and *anonymous* conversations with other users.

Similar to the ARPANET, NSFnet was a constant connection run over leased lines. One of the ways Netnews is distributed is by using the NNTP protocol over Internet connections, allowing for both the Netnews and E-mail to be distributed quickly over a large area. Internet connections also assist in carrying Usenet and E-mail internationally. The Internet class networks and connections include established government, university and business-sponsored connections. However, individuals are connected at home via phone lines and various versions of UUCP. For example, even as late as 1992, when 60 per cent of Usenet traffic was carried over the Internet via the instantaneous Network Transport Protocol (NNTP), 40 per cent of Usenet was still carried through the slower UUCP connections. There are still many examples of various types of connections using UUCP - by users at the "fringe", for example. However, there is also a growing number of commercial services which, for a fee, provide connections for electronic mail and Usenet access, as well as access to the Internet provided an individual has a computer modem (that device that sits between the computer and telephone line, translating data into the digital form, to send and receive digital form to text so that it can be displayed on the monitor in a readable form) and the telephone connection.

An account with an Internet Service Provider (ISP), such as American On-line (AOL) and CompuServe, gives an individual access to the Internet and sets an individual E-mail address. Like other infrastructures, Internet operations and maintenance require resources which are not free. The Internet is operated, maintained and owned by MCI/Worldcom, SPRINT, UNET and many other multi-billion dollar companies. These companies maintain the backbone network of copper, fibre and satellite links on which all users "piggyback". Governments around the world, typically, own their own backbones, into which they "tie" other backbones. This "tie into process" is possible because protocols (TCP, IP, UDP, HTTP) were agreed which enabled individuals, companies or countries to join the Internet. This protocol is similar to the other two international protocols, POTS (plain old telephone service) which allows individuals to plug an analogue telephone into any country's analogue phone system and the world-wide standards for traffic signals (red/yellow/green).

Today, the Internet is an extremely complex network with thousands of geographically - dispersed networks including more than 100,000 individual computer networks owned by governments, corporations, universities and non-profit groups. The Internet is, effectively, a free form of global communication resource (Sharp, 1998). When an organization connects its own private network, or Intranet, to the Internet, it must also manage, in addition to its own internal resources and people, other resources and people external to the organization, greatly complicating network management.

However, there is a new Internet body, the Internet Co-operation For Assigned Names and Numbers (ICANN), which will gradually take over responsibility for co-ordinating technical tasks such as domain/name system management, IP address space allocation, protocol parameter assignment co-ordination and root/server system management. In the past, the US Government, with groups such as the Internet Assigned Numbers Authority (IANA) and Network Solutions, the company that has a monopoly on the registration of ".com", ".org", and ".net" generic top-level domains, was responsible for these tasks. The ICANN will take over these activities (Long, 1999).

There is no agreed-upon definition of the Internet, as it consists of a set of common protocols, a physical collection of routers and circuits, distributed resources and, even, a culture of connectivity and communications - a massive global network of inter-connected, packet-switched computer networks. The Internet requires synthesis of three perspectives: a network of networks, based on the TCP/IP protocols; a community of people who use and develop those networks; and a collection of resources that can be reached from those networks (Krol and Hoffman, 1993).

Some applications on the Internet (personal homepages) represent "narrow-casting" in the extreme, with content created by consumers and for consumers. As a marketing and advertising medium, the Web has the potential to change, radically, the way firms do business with their customers - by blending together publishing and real-time communication, broad-cast and narrow-cast.

The size of the Internet user population is currently smaller than its extensive publicity might lead people to believe - however, it is growing. European Internet consultancy, Nua, has estimated that there are 153.25 million Internet users, of which 1.14 million are in Africa, 26.55 million in Asia/Pacific, 33.39 million Europe, 0.078 million in the Middle East, 87 million in USA and Canada and 4.5 million in the South America (*Asiaweek*, 1999b). Whilst there were 56 million Internet users in the USA, alone, in 1998, it is projected that by 2002 that this number will grow to 137.5 million users (IDC, 1998).

This eclectic collection of individuals adds to the interests and specialities of the whole Net community. Like its predecessor, the telephone, the Internet has a range of uses (and abuses), of which three aspects are most prominent:

- communications (E-mail, chat rooms);
- information provision; and
- electronic commerce (for example, marketing, shopping and/or banking).

Similarly, when the telephone was first invented, it was used for relaying live concerts - then, large companies adopted it. Slowly, the general public came to use it, first from post offices and drugstores, then from their own homes. Now billions of pounds change hands via telephone sales and even more through TV sales. However, the rate of growth in Internet use outstrips all previous similar consumer and business media technologies such as radio, TV and cable (Bray, 1997). But, as Internet use grows, so does the amount of fraud due to the cheap and efficient reach to large numbers of people.

What is on the Net?: Information or What?

Prototype community network systems are forming around the world - exemplified by Cleveland Free-Net, Wellington Citynet, Santa Monica Public Electronic Network (PEN), Berkeley Community Memory Project, Hawaii FYI and National Capital Free-Net. Access to these community systems is as easy as visiting the community library and membership is open to all who live in the community. In addition to the living body of resources this diversity of "Netizens" represents, there is also a growing body of digitized data that forms another body of resources. These span from digitizing "great" literature of the past, exemplified by the otherwise obscure Gutenberg Project, and Project Bartleby, gathering non-mainstream material such as various religions, unusual hobbies, gay lifestyles and fringe activities. As an operational model of distributed computing, the "Net" supports:

- discussion groups (USEnet news, moderated and un-moderated mailing lists);
- multi-player games and communications systems (MUDs, irc, chat, MUSEs);
- file transfer (ftp) and remote login (telnet);
- electronic mail ("E-mail"); and
- global information access and retrieval systems (archie, veronica, gopher and the World Wide Web).

One can find on the Net Usenet; Free-Net; E-mail; library catalogues; ftp (file transfer protocol) sites; remote computing logging facilities; free software; electronic newsletters; electronic journals; multi-user Domain/Dungeon (mud)/mush/moo; Internet Relay Chat (IRC); the multimedia World Wide Web (WWW) with global information access and retrieval systems; variety of data banks; multi-player games and communication systems; and discussion groups and much more.

The Internet's strength is the network's ability to tame massive amounts of data and make it easily searchable (Sandberg, 1998). Different servers, such as WWW, WAIS and gophers attempt to order and make utilizing the vast variety and widespread information easier by the provision of Net "browser" or "search engines" - the computer program that allows an individual to send, and view, information such as Microsoft's Internet Explorer or Netscape's Navigator.

For a geographically-sparse group, MU* allows users to share news and communicate with each other, giving a sense that there is a community with things happening, whilst an associated "ftp site" allows art and text to be distributed. In the area of information provision, Nets have helped, enormously, in the dissemination of information from individuals, knowledgeable in certain areas, and specialized repositories, difficult to obtain otherwise. However, the millions of page information on the Net can make locating useful information, and enjoyable stops at Web sites, hard work.

The Internet and Web Sites: Anarchy or a New Information Freedom?

The World Wide Web has grown dramatically since its inception by Tim Berners-Lee, as well as the use to which the Web has been put. Once simply a means of accessing information stored across various platforms, the Web is now a widely-used medium for communication (Jackson, 1997). The hypertext system and the link are the essence of the World Wide Web. The link is a mechanism through which information can be passed across, otherwise incompatible, systems, platforms and networks. Berners-Lee (1990) conceptualized and led the development of the World Wide Web at the CERN - the European Laboratory for Particle Physics in 1990. Berners-Lee (1990) envisaged that the new system must allow any sort of information to be entered. Another person must be able to find the information, sometimes without knowing what he (sic) is looking for (Berners-Lee, 1990).

Acknowledging the philosophical vision of hypertext, Berners-Lee's (1990) proposal focused on the development of a system sensitive to the CERN context, which would be capable of the following:

- accommodating a network of heterogeneous systems;
- operating without any central control or co-ordination;
- providing access to existing databases;
- allowing "private" links, to and from, "public" information;
- having a minimum of "bells and whistles";
- supporting data analysis; and
- supporting links to "live," non-static data.

Thus, the software for *storing* information was separated from the software for *displaying* information, constructing the concept of the "browser" and the notion of client-defined, rather than server-defined, information displays. Web users could construct their own documents, on their own systems, to link to various material accessible to the "Web," but they could not modify documents "owned" by other users or other systems (Jackson, 1997). The original vision of the hypertext ideal of completely inter-locking text was abandoned, as was the notion of the un-determined path. The hypertext vision, independent of any specific technological implementation, is of information perceived by the user to be joined into a single Document with each user being able to wander according to his her own interests and motivations. Instead, well-planned links allow the user to reach specific information efficiently. Notwithstanding that the Web is also incomplete, it is hard to imagine that all possible links could be put in by authors, compared to the small number of links sufficient for getting from one site to another in the smallest number of stops (Berners-Lee and Cailliau, 1990).

Currently, there is no central repository of material accessible by Web browsers, which means that authors have no way of knowing of other documents to which they might link. There is no signed agreement that owners must make their information accessible, to all, for all time (Jackson, 1997). Documents on the Web are owned. Whoever owns such documents may elect to remove them from the Web, at any time, change their location or their name-creating "dead links" in other documents that point to specified material. It is possible to have a completely self-contained and closed set of documents never accessible because no other documents link to them (Jackson, 1997). Divisions on the Web are identified by the phrase "Web site," denoting territory or property. Currently, the techniques practised by Web-site owners is that they continually change their information so that people will want to re-visit. They also form alliances with other site owners and agree to link to one another in "Web rings." This empire-building technique undoubtedly will continue to grow (Jackson, 1997).

To the user, the "World Wide Web" facilitates the movement of the user from one document, commonly called "pages" or "URLs", to another. Technically, however, the Web facilitates movement of documents from a server to a client computer, preserving issues of ownership, boundaries and territory (Jackson, 1997). To the increasing numbers of Web "squatters" who want to entice users to return to, and stay within, their "site" (the collection of documents over which an owner has complete control), the Web is a collection of destinations. Since these sites are increasingly in competition with each other for user attention, in the emerging commercial world of the Internet, one Web site might have to pay another in order for the second to establish a link to the first (Jackson, 1997).

The leading internet service provider (ISP), American On-line (AOL), with a market value more than General Motors, has more than 15 million subscribers and expects to command millions more with its acquisition of Netscape's popular Netcenter "portal" - a "launch pad" for exploring the Internet (*The Economist*, 1999a). The other elite Internet pioneers, Amazon (worth more than all America's bookstores, including Barnes and Noble and Borders, put together) and Yahoo (the aristocrat of the Internet, with a market capitalization of over US\$30 billion, and most visited site with 167 million page views a day), have

also acquired blue-chip status with Internet enthusiasts, creating pre-eminent Internet brands and defining the markets they inhabit.

The competition amongst ISPs is intense, raging from existing and upcoming portals, which include Yahoo; AOL.com; AltaVista; Excite; Infoseek; Lycos; MSN.com; Netcenter and Snap. Portal sites provide search services and additional features that often include news; stocks; games; chat; free E-mail; free Web space; appointment diaries; directories; shopping and personalized start-up pages, whilst non-portal sites are destinations in themselves. Furthermore, portals sites are continuously adding new features such as private clubs, city guides and personalized features for users which are then matched by competitors - with Excite and Yahoo leading the pack (Branscum, 1998). For example, Yahoo's progress from search engine to content aggregator has been phenomenal. Whatever Yahoo provides, has been either copied or previously offered by rivals such as Excite, Lycos, Netcenter and MSN (*The Economist*, 1998). Excite's private club, www.excite.com/communities, provides a shared-group calendar, contact list, a discussion area for posting and responding to messages, a photo area and a live chat room. Similar facilities are provided by Yahoo's My Club Area (www.clubs.yahoo.com) (Branscum, 1998). However, none of the well-known portals have tried to make themselves distinctive by appealing to a particular group in the way that most other media do, preferring to be all things to all people (*The Economist*, 1998). Yahoo provides interest directories such as Yhooligans (www.yahooligans.com) for children and Seniors Guide (www.seniors.yahoo.com) which caters to the over-50-group. Although My Yahoo (www.my.yahoo.com) allows users to personalize the site in many ways, it takes time to customize a portal to one's own taste, making switching tiresome (*The Economist*, 1998).

However, there are also "vertical portals" or "central hubs", better known as "hubs". Whilst portals link to the whole Internet, hubs link only to sites in a chosen area - such as history, medicine, football or some other major area of interest. While there are half of a dozen or so portals, there are hundreds of hubs. There are also "destination sites" or "content sites" which hold real information and of which portals and hubs make real use. Although it appears that portals are consolidating, the Internet is not shrinking (American on-line has taken-over CompuServe, Netscape, Mirabilis ICQ and MovieFone) as it is the destination sites that actually make the whole information provision aspect of Internet worthwhile.

E-Commerce: E-Channels and E-Marketing

The terms "electronic commerce" and "E-commerce" are simply references to business transacted by electronic means. Via electronic media, suppliers can advertise goods and services, customers can make purchase enquiries and arrange sales and payments. In the case of goods such as software and publishing, electronic delivery of goods and after-sale service are possible. The strategic importance and viability of electronic channels to market has been a continuing subject of debate for over two decades (Reynolds and Davis, 1988; Hoffman and Novak, 1995; Evans and Wurster, 1997; Peterson, 1997; Cavanaugh, 1998). Whilst adoption of on-line and Internet use is considered the most extensive challenge facing marketers today, effective usage is likely to lend itself to fundamental change in the nature of consumer behaviour. Research suggests that technology has overtaken the marketing industry's ability to exploit it (Reed, 1997). Organizations are now lagging behind in the generation of ideas and ways of doing business utilizing the capabilities offered by IT. Moreover, many enterprises believe that innovative and successful application of electronic marketing and commerce will expand markets, motivate customers to pay higher prices and/or reduce costs of supply and overheads through greater competition.

The range of channels for electronic commerce and marketing are broad - each impacts, in a varied way, on consumer behaviour. Available channels are radio; television (both one-way and two-way transmission); computers and computer-based technologies (including databases); telephone and telephone-based technologies; facsimile machines; videography; CD-ROM technologies; interactive kiosks; electronic ticket machines; pagers; optical scanners; and smart cards.

It is now broadly accepted that the Web needs to engage users through effective information provision and that consumers need to be attracted to Web sites by innovative means. Commercial Union, for example, used its sponsorship of the popular television programme, "London's Burning", to attract potential consumers to its financial service sites. Moreover, it is also important to integrate new electronic channels within an overall marketing strategy. A primary decision for a retailer is to determine whether its marketing assets are directly transferable to an electronic channel (Reynolds, 1994). Web sites, for example, publicized as an automated response to telephone calls, highlighted that advertisements can be used as effective information or sales channels (*Journal of Advertising Research*, 1997). In one of the early UK shopping sites, Barclay Square, the Innovations (catalogue shopping) Web site was reported to receive up to 5,000 visits a day, while the Argos site, also in Barclay Square, received "little interest" (Miller, R., 1996). On examination, it was revealed that this was a direct consequence of Innovations including the Web address on all promotional material, which Argos failed to do (Miller, R., 1996).

The International Benchmarking Study carried out, in 1996, by the Department of Trade and Industry, found that 19 per cent of all UK businesses had established Web sites, but that only 12 per cent of them were using Web sites for on-line sales. The majority were treating their sites as experimental and not as key marketing channels (UK Department of Trade and Industry, 1997). The fundamental question marketers need

to address is whether any Internet presence is to be purely informational, transactional in nature (value-added retail products and services designed for electronic environment, facilitate easier shopping of essential goods and services and improve the quality of shopping of non-essential goods and services) (Reynolds, 1994) or derivative. Marketing journals report that, at present, much of the money spent on advertising for on-line services is generated from research and development budgets, not marketing (*Journal of Advertising Research*, 1997). A lack of marketing focus could mean that high-potential innovations fail to be exploited or that diffusion is slowed by a failure to address the immaturity of markets. Indeed, some notable multimedia innovations are believed to have succeeded precisely because they were driven by marketing, not IT, departments. It is also important to integrate new electronic channels within an overall marketing strategy that takes consideration of each economy's political, economic, social and technological context. In the UK, for example:

- Political: UK government services make extensive use of "back office" information systems, but few offer direct interactive use for consumers, thus creating an opportunity to outsource services to the private sector.
- Economic: In the UK, like the US, an over supply of goods and services has led to a breakdown of divisions between previously separate industries, thus opening new opportunities for business using electronic channels and leading to reduced costs of market entry and enhancing the influence of customers.
- Socio-cultural: Consideration should be given to those products and services which can successfully be sold electronically, such as commodity items and banking services, bearing in mind that other items remain more effectively sold by traditional channels.
- Technological: For effective E-commerce, consideration needs to be given to the comprehensive use of the following sophisticated technologies:
 - Web-Enabled Lead Collection, whereby a Web home page facility collects customer information (with the customers's permission and privacy provisions) and provides up-to-date service facilities to potential customers.
 - User-Friendly Marketing Information Browsers (Web browsers) integrated with sales and marketing information systems.
 - Internet Data Synchronization Database and Replication Technologies that allow field staff to easily and rapidly synchronize laptop databases with corporate databases through dial-up modem connections.
 - Internet-Working Computing or Corporate Client/Server Applications that operate in real-time on the Internet.
 - Internet-Working, or Virtual Computing, which allows for detailed information on requests for product and services previously mass marketed (for example, providing individual measurements and design for tailor-made Levi jeans).

Ignoring these considerations is likely to be detrimental as change in technologies and services is occurring rapidly. The forthcoming introduction of digital interactive television and of the "cashless (electronic) purse" using "smart cards", both of which have been trailed in recent years and have begun to be rolled out in late 1998, are likely to have considerable impact. The changes are expected to drive on-line banking, E-shopping and new ways of accessing the Internet and may further alter broadcasting from a mass to

one-to-one communications medium (Reed, 1997). Thus, whilst retailers have an opportunity to take the initiative in designing the future, their initiative is contingent on the retailers' supply-chain economy within electronic channels and by the ability to re-orient their asset base (Reynolds, 1994).

E-Commerce and Issues For On-Going Consideration

The most rapid developments are occurring on that portion of the Internet known as the World Wide Web (WWW). The WWW is a distributed hypermedia environment within the Internet which allows multimedia information to be located on a network of servers, around the world, which are inter-connected, allowing one to travel through the information by clicking on hyperlinks. Any hyperlink (text, icon or image in a document) can point to any document anywhere on the Internet. The user-friendly, consumer-oriented homepages of the WWW utilize the system of hyperlinks to simplify the task of navigating among the offerings on the Internet.

The present popularity of the WWW as a commercial medium (in contrast to other networks on the Internet) is due to its ability to facilitate global sharing of information and resources and its potential to provide an efficient channel for advertising, marketing and, even, direct distribution of certain goods and information services.

The concept of integrated marketing holds appeal and promise for business efforts on the World Wide Web, because the Web offers enormous potential for developing customer relationships and customizing the offering to individual customers. There are a number of functional categories of Commercial Web Pages. Each function can be considered as an element in an integrated marketing program in the context of digital commerce. However, these are rapidly changing and some Web pages and links may have changed or disappeared altogether. Some of current functions are presented below (Gaffin, 1994; Cleland, 1995; Donaton, 1995).

- On-line Storefront - Web sites offer direct sales through an electronic channel via an electronic catalogue or other, more innovative, formats.
- Internet Presence (Flat Ad, Image and Information) - Internet presence sites provide a virtual "presence" for a firm and its offerings.
- Content (Fee-Based, Sponsored, Searchable Database) - Fee-Based content sites where the provider supplies and/or pays for content which the consumer pays to access. Sponsored content sites sell advertising space to reduce or eliminate the necessity of charging fees to visitors. In Searchable Database, merchants or advertisers pay a provider for information placement in an organized listing.
- Mall - The site typically constitutes a collection of on-line storefronts, each of which may contain many different categories of goods for sale and where the provider charges rent in exchange for virtual real-estate and may offer a variety of services to the storefront.
- Incentive Site - This represents a unique form of advertising that attracts a potential customer to a site. The objective is to *pull* the user to the commercial site behind it, thus helping marketers generate traffic to their Web sites.
- Search Agent - The purpose is to identify other Web sites, through keyword searches of a database, that extend throughout the Web. Software agents are used to generate and/or assist the search through the database.

Commercial Web-site design usually include On-line Storefront sites, Internet Presence sites and Content sites and are rapidly changing.

At its broadest level, E-commerce can mean any use of electronic technology in any aspect of commercial activity. The National Information Infrastructure (NII) Task Force on electronic commerce more narrowly uses the term to mean the use of a national information infrastructure to perform any of the following functions (NTIA Office of the Assistant Secretary, 1995):

- bring products to market (research and development via telecommunications);
- match buyers with sellers (electronic malls, electronic funds transfer);

- communicate with government in pursuit of commerce (electronic tax filings); and
- deliver electronic goods (information).

With the speed of developments in E-commerce, constant attention will need to be given to segmentation and the ever-changing demographics of consumer groups (Schneider, 1997). Currently, Internet users tend to be comparatively wealthy people with families. If services are targeted exclusively to these segments of society, the attractions of purchasing IT and on-line facilities will remain strongest for these groups - to the exclusion of older and less wealthy segments. There is increasing evidence that the use of Internet and electronic services are already biased towards the younger-age group. However, neglecting older customers may even risk alienating a further, potentially, highly-profitable group (*Bankers Magazine*, 1997). A further risk is that the electronic delivery of government services will be slowed, as many potential users of those services could be IT "have-nots".

An alternative, more optimistic view is that the rapid uptake in recent years of the World Wide Web, in particular of E-mail, indicates that barriers to change may not be as rigid as some expected. Although men initially took to the technology, women, as key household purchasers and managers of domestic finances, are likely to be increasingly targeted. Whether older consumers will be similarly included remains to be seen. Overall, consumers of differing demographic profiles are increasingly becoming Internet users in the US and this is likely to occur in the UK, as well. A summary of the evolving forces of supply and demand driving such changes in consumer behaviour, is highlighted below.

The key aspects of technology change shaping consumer behaviour are:

- production technology altering production processes and offering greater customization and variety;
- distribution technology and developments in logistics, electronic data inter-change, point-of-sale applications and automation; and
- technology for personal use, where one can expect to experience the fastest gains in price-related performance.

The key changes in lifestyle and demographics are likely to be:

- negative growth birth rates and rising median age in developed societies (older consumers tend to respond more favourably to relationship marketing approaches than do younger consumers);
- more women in the workforce, leading to changes in families and households;
- lifestyle, income and ethnic diversity;
- increase in regional differences, both within and between societies;
- increased stress as the nature of work changes;
- greater concerns for privacy;
- emphasis on safety and security; and
- entrepreneurialism, giving rise to niche markets.

Whilst electronic channels for marketing in the US are, increasingly, getting momentum, European-wide trends toward market fragmentation suggest that channels to markets which permit the more careful targeting of identifiable market segments, such as electronic channels, will represent a considerably more efficient business development strategy for retailers. Europe faces considerable debate over the technical obstacles to widespread domestic Internet usage, particularly over bandwidth or speed of connectivity. In the UK, for example, there has been considerable experimentation with retail Web sites. A number of retailers are responding to fragmented markets though technology with strategies to generate more information about their customers' behaviour, database marketing and loyalty schemes (OXIRM and KPMG, 1996).

In addition, home shopping channels in European homes, particularly Germany, Italy and France, have come much later than in the US. However, the growth of ISP in Europe, including American providers such as APL, CompuServe, and national ones such as those provided by telecom companies - BT in the UK and Telecom in France, provide a variety of choices for marketers. Electronic channels provide unrivalled opportunities for shifting from a mode of one-to-many marketing strategy and communication to a mode of one-to-one, with an immediate feedback opportunity in a strategy for closer monitoring of consumer behaviour (Reynolds and Davis, 1988). However, current practice by retailers across Europe is a complex, dynamic and somewhat serendipitous activity, as the user often discovers services by chance (OXIRM and KPMG, 1996).

Although commercial use of the Internet is rapidly expanding, doing business on the Internet raises a number of legal and cultural issues which must be considered by business (Bennet, 1998; Farrell, 1998).

- Retailing on the Web is currently tough, as the sheer pace of on-line change and E-market immaturity makes trading fragile. However, in considering opportunities for electronic commerce, retailers need to determine whether marketing assets are directly transferable to an electronic channel. If so, then retailers need to determine whether Internet activity needs to be purely informational or transactional in nature.
- Advertisement and competition laws vary across the continent and countries. In France, for example, any Web site that is specifically aimed at the French consumers, by law, must be in French. In Germany, two-for-the-price-of-one offers and gifts with purchase offers are illegal. In Sweden, toy advertisement may not be aimed at children. Language and culture increase the costs of engaging in cross-border commerce. The need to present national-language Web pages can be a barrier to entry into the ranks of successful E-commerce venture.
- Legal uncertainties in cross-border trade are considerable. Who is liable if a product is faulty? What are the consumers' rights if they do not like what they have brought and want to return the product? Which country's value-added tax (VAT) or consumers tax rate applies? Not only do VAT rates differ in various European countries but, also, that rate, applied to certain types of goods, may differ. For example, the UK has a fully competitive book market whereas in Germany book prices are fixed.
- Payment systems: In the UK, for example, paying by credit card or debit card is common and widespread. In Germany, cash-on-delivery is a popular payment method. Thus, German catalogue retailers will not sell to customers who do not have a delivery address in Germany or an account with a German bank. Euro-cheques are common on the European continent but almost non-existent in the UK. Furthermore, any cross-border payment transaction that is not carried out using either a credit card or a Euro-cheque involves lengthy and costly procedures, so much so that for most low-value consumer goods, the cost of paying may exceed the value of the item.
- Delivery of consumer goods: Free movement of goods and services is enshrined in the European Union law. However, freely and easily obtaining goods are often difficult. For example, it is still more costly to ship an item 30 miles across a frontier than to ship the same item 300 miles within the same country. In addition, there are issues with insuring shipment and liability of damage. While consumers can select anytime from a Web site and pay for it "securely", it takes three weeks to get the goods cleared through customs, complete with the payment of import duties, discouraging repeat purchase. Similarly, small merchants in most countries do not have one-stop agencies that can help with customer formalities and other import-export regulations, leading to a reduction of profit margins after shipment of goods to purchase.

- Companies often pay too little attention to the differences in Internet uptake in the various European countries and elsewhere. The differences in telecommunications environments are a major determining factor in the development of on-line markets.
- The need for writing: One can carry out business and make legally-binding agreements via the Internet. However, where a document is required to be in writing or where a signature is required by legislation (for example wills and land transactions), electronic data and digital signatures may not suffice. In some cases, transactions via the Internet may, therefore, not be legally enforceable.
- Offers to the world: Although the Internet offers borderless business, it also encounters several problems. Sales of certain goods and services may be prohibited in parts of the world. Also, the size of the potential market may cause demand to exceed supply. Thus, designing a Web site that offers to provide goods or services, binding business whenever consumers respond, should be avoided.
- Acceptance of offer: Uncertainty currently exists as to where electronic acceptance of an offer occurs - when the E-mail of acceptance is posted or received? What constitute "postage" or "acceptance" of E-mail also goes unresolved. This is important in that it determines when a contract has been formed between the parties and because the law of the country in which an offer is accepted usually governs the contract.
- Consumer Protection: Internet transactions potentially expose business to consumer protection legislation in all legal jurisdictions of the world, irrespective of a country's laws governing the contract. Litigation on this issue in the US has, to date, divided courts.
- Fear of the Internet's double threat, privacy and security, by business and consumers, has stunned E-commerce (Sandberg, 1998). Business has traditionally been conservative about the Net, fearing hackers and the loss of trade secrets. Consumers, fearing the same thing, are also wary of exposing sensitive private data, ranging from name and address to financial information. The Electronic Privacy Information Centre acknowledges reports of hackers spraying digital graffiti onto Web sites and software giants, such as Microsoft and Netscape, having to plug security flows being a common occurrence (Sandberg, 1998). For example, in a single week in September 1998, the Web site of a leading political party in Sweden was hacked, software used by on-line auction houses in the US exposed thousands of credit-card numbers to theft and a group calling itself, "Hacking for Girlies", papered digitized porn on *The New York Times'* site.

Because of the speed with which the Web has swept through organizations, many Web sites have been developed "on the fly", thus without the effectiveness that a more methodical approach would have brought. Although this *ad-hoc* and decentralized approach created opportunities for innovation, it also generated particular problems. Opportunities created by the free form and decentralized development of corporate Web sites produced a wealth of creative solutions to Web problems and large and diverse Internet facilities. However, drawbacks are the proliferation of duplicative and un-maintained information. The challenge for information providers is to integrate information in a way that helps users be more effective in finding what they need. This may involve adopting standards for metatags, developing an internal content classification system, deploying layered search architectures and adapting other knowledge infrastructure components.

Balancing creativity and innovation with the need for levels of standardization and control requires time spent building support and developing corporate plans, guidelines and strategies. Business units can be responsible for developing the content of the information, but the corporate IT unit needs to be responsible for security policies, encryption, infrastructure and network performance issues. With increasing information flow, there is a need for corporate information librarians to be involved in selecting and implementing the company-wide crawler and search engine, indexing and catalogueuing major content sites and over-seeing the process for authenticating Web sites. The value of library expertise in information retrieval, in catalogueuing and indexing is increasingly more important in the Web context. Increasingly, librarians are seen as a

strategic asset. As a result, librarians are likely to be asked to participate in cross-functional teams where their expertise would not have previously been sought.

E-Commerce on the Net

The Net has become a bizarre bazaar - for some, a global yard sale, for others, a mega-mall - accessible for the cost of a dial-up account and some Web software, people, now, have the ability to pawn or purchase goods world-wide. For others this is an inaccessible dream or a frightening alternative for shopping. Retailing on the Web is tough, as firms are fragile due to their relative immaturity and the sheer pace of on-line change; exemplified by broadband cable systems and the move towards free Internet access, again, illustrated by the Fresolver and ISP, by Dixon, a British electronic retailer, and Energies, a telecomm company. Furthermore, with falling prices of fibre-optics, the network bandwidth (capacity) is becoming incredibly cheap and, in a few years, the Internet will be piped through the offices and homes like other utilities such as the electricity and water supply (*Journal of Advertising Research*, 1997; Reed, 1997), signalling further jockeying amongst portal ISPs for market share.

However, Net advertising spending by industry continues to grow according to the Inter Media Advertising Solution Report which suggests that the top 25 industries, of 400 surveyed, increased their on-line advertising spending 86.7 per cent over the first three quarters in 1998, compared with the same period of previous year (Flynn, 1999). Although on-line advertisements accounted for 1.5 per cent of overall advertisement budget, close analysis shows that the highest spending, 17.3 per cent, was within computer and software industries. Internationally, Microsoft was the top individual spender on Internet advertising, during 1998, followed by IBM and Excite (Flynn, 1999). The fastest growing industries were pharmaceuticals, government organizations, direct response companies, retail and financial services (Flynn, 1999). Advertisement sales based on key words account for about a quarter of the advertising revenue generated by portal and search sites, such as Excite (Flynn, 1999). However, selling advertising access to so-called key words, so that their banner ads appear near certain search results, based on key words such as a competitor's brand name, is widespread in the Internet business, often ending in lawsuits in the US and challenging some fundamental assumptions of Internet advertising. A search on "Amazon" on the Lycos search engine, for example, may display an ad for the Amzon.com bookseller's chief rival, Barnes and Noble. To find out how widely their names are being used in keyword purchases, companies can use a free service, Bannerstake (www.namestake.com), to display ads associated with their names (Flynn, 1999).

Despite potential threats, a growing number of transactions are performed on the Internet. Companies trading computers and accessories are doing well (for example, www.cdw.com, www.necx.com, www.isn.com). Similarly, whilst most traditional mass media have regulated pornography to their peripheries, the Internet has given "smut-viewing a new lease on lust" (Sandberg, 1998). Commerce which plays to the Internet's strength as a communications medium also does well, such as on-line auctions (for example, www.onsale.com, www.ebay.com). Users, who bid for goods posted on-line, can view other buyers' comments and banter as they bid, as well as indulge in on-line brokering (for example, www.discoverbrokerage.com, www.schwab.com, www.etrade.com). Goods already familiar to consumers tend to do well on-line. For example, Amazon.com has rocketed from obscurity to the fourth largest bookseller in America in three years. A similar case is with CD stores. Buying a car (for example, www.autobytel.com, www.carpoint.com), shopping for financial services and booking traveller reservations (www.travelocity.com, www.priceline.com) are among the more mature segments of electronic commerce (Sandberg, 1998). The more commodified the product, the simpler it is to sell on the Internet.

Luxury goods, apart from hard-to-find collectibles, however, do not take well to the sight-unseen nature of on-line buying (Sandberg, 1998). To date, E-commerce has been built on the assumption that customers desire something in particular, such as a book on marketing, where the E-shopper can browse the Net for a particular book title or general marketing book. The very act of "clicking on" a site before it can be seen, involves a degree of intention that is alien to many traditional shoppers (Auchincloss, 1998). Although many shoppers may have a shopping list, once in a store, inspiration often takes over and serendipity and unexpected discovery often provide the greatest satisfaction. Further utilization of other senses, such as feel and smell, play important roles, in addition to the social experience of being in the shopping mall. Stroking a cashmere cardigan or smelling a bar of soap adds to shopping charm (Auchincloss, 1998). E-commerce assumes that shopping is a rational exercise, rather than a realm where false hopes, changed minds and sudden enthusiasm reign supreme (Blythe, 1997; Auchincloss, 1998).

Although on-line shopping has captured the imagination of the public, Internet transactions do not currently represent significant proportions of electronic transactions (Miller, 1997). The most prevalent forms of E-commerce used to date are business-to-business electronic commerce (B2B). In Australia, for example, in 1997, business-to-consumers Internet transactions accounted for only AUD\$55 million of the AUD\$16 trillion of electronic transactions completed in Australia. B2B E-commerce in Europe follows a similar trend. It is expected to grow from US \$126 million, in 1997, to more than US \$5 billion, in 2002, whilst B2B E-commerce will expand from US \$1 billion, in 1997, to more than US \$30 billion, in 2001. Although B2B E-commerce is still predominately done via "closed systems", requiring proprietary software and private networks, such as Electronic Data Interchange (EDI), Automated Teller Machines and EFTPOS, there is an growing

uptake of B2B via the Internet. This is especially amongst small and medium-sized companies which cannot afford the high costs of private networks considering that Internet solutions can be the simplest and least expensive to implement. However, currently, these solutions suit users whose needs are flexible in response to the Internet's variable speed. File size and network traffic affect the route and speed of devices, making delivery times somewhat unpredictable. The bandwidth also is dependent, or unpredictable, because the data route cannot be prescribed or predicted. Speed or rate of throughput is determined by the slowest of the networks and unpredictably routes "packets" through different alternative paths to the final destination at the receiving site.

The Internet depends on the telephone companies' wires and fibres for transporting digital traffic (and, in some cases, satellite links). Compression software and increased bandwidth have potential to make Web-to-Web options an effective solution for data and time intensive customer applications in the near future. The Internet provides an "open system" of E-commerce, involving the use of open networks, accessible by anyone, to complete transactions. Forester Research, a technology consultancy, expects world-wide, B2B, Internet transactions to double, in 1999, to US\$109 billion, six times the forecast for on-line business to consumer sales (Erikson, 1999). They predict, that, by 2003, Internet retail sales in the US will be in vicinity of US\$108 billion as 40 million American households make purchases on-line. However, considering that the total value of American retail sales in 1998 was around US\$1.7 trillion, with estimated on-line retail sales US\$7.8 billion, it means that, by 2003, on-line retail sales will represent 5 per cent of trade (*The Economist*, 1999a). A September 1998 report by the Organization for Economic Co-operation (OECD) stated that during 1997 only US\$26 billion changed hands on-line, being 0.5 per cent of retail sales in the OECD's seven largest economies (Sandberg, 1998). Most of this came from B2B revenue. The percentage of E-commerce in Europe and other continents is even more anaemic (Sandberg, 1998).

Internet Abuse

Internet has magical and frightening opportunities as it frees the imagination from the everyday world. On-line context can remove people from a proper understanding of reality and of the proper tests for trust (Lacayo, 1993), as it is difficult to verify people's identity and connect on-line with real life. It is persuasive, far-reaching and clandestine (Lacayo, 1993). The Internet community, or the virtual community that is supported by global connectivity (global computer network), consists of Net users who exist as citizens of the world and are called, by some, "netizens" (Net citizens). Although the Internet is a cheap and efficient way to reach a large number of people, quickly, there are those who take advantage of these efficiencies to carry out security fraud (Neuman, 1995). As the Internet grows, so the amount of fraud grows. The US Federal Trade Commission (FTC), for example, receives as many as 1,500 complaints a day in relation to the Internet fraud and that number is reported as being on the increase (James, 1998). It is also important for the Web site's front to mesh effectively with its back-office business systems. The new connectivity creates new value chains and new sources of competitive advantage, as well as new *vulnerabilities*. The emerging global connectivity presents not only a threat to established ways of working, but also presents new opportunities and new risks (James, 1998).

Using the Internet as a getaway to on-line trading databases, hackers can transfer money into their trading accounts, a crime previously limited primarily to banks. There are other, more subtle dangers; hackers do use the intimate details of various customers' financial positions to direct their own investments (James, 1998). Furthermore, because it is easy to set up and publicize a stock offering on the Internet, criminals can mount a stock scam at a fraction of the cost it would take to do so via traditional methods. The new medium allows them to commit crimes cheaply, immediately, efficiently and worldwide, right from their living rooms (James, 1998).

Currently, it is easy to impersonate others on-line, making the Internet a hothouse atmosphere for fraud (Hamilton, 1999). The best example is the method of connecting to file repositories, via FTP (file transfer protocol), by logging in as an "anonymous" user. Most, if not all, World Wide Web Sites, Wide Area Information Systems (WAIS) and gopher sites are open to all users of the Net. Some think that there is a need for a system of certified electronic "signatures", administered by a trusted third party, that are *almost* impossible to be faked. This strategy is adopted by Scandinavian and Hong Kong Post, operating as digital certification authorities. Cyber-shopping is still in its infancy; even in the US, shady practice is common. Examples of misleading advertising, inaccurate billing and orders never arriving are over-whelming (Withmore, 1999). The Internet is a new technology and rather than taking advantage of the Net's interactivity to enhance customer service, many retailers have used the Net to lower costs and the number of staff. Often, incompetence poses a greater risk than fraud, with over-paying and double-charging being typical mistakes (Withmore, 1999).

The creation of the "Dominion of Melchizedek" may serve as a harbinger of more to come in a field where today's law-enforcement officials are yet to develop expertise. Melchizedek, variously situated in Antarctic, the Pacific and, even, the Carpatian Mountains of Central Europe, exists only in cyberspace, (www.melchizedek.com) (Lintener, 1998). It made a brief foray into physical reality with arrests of its creators in November 1998. The Dominion of Melchizedek, on the Web site, was offering a wide range of services, including passports, banking facilities, university degrees, lawyer's certificates and a virtual stock

exchange (Lintener, 1998). In January 1998, the "dominion" even managed to have the immigration authorities in both Singapore and Malaysia respond favourably to a letter asking whether a "Melchizedek passport holder" needed a visa to visit those two countries. In the same month, the Asia-Pacific Parliamentarian's Union, in Taipei, issued a statement recommending observer status for Melchizedek, unaware that it is not an actual country, merely a virtual one (Lintener, 1998). The Australian Federal Police's Transaction Report and Analysis Centre stated in its most recent report that fighting "cyber-crime" will be the most important challenge of the 21st century (Lintener, 1998).

Privacy concerns are increasing as an elaborate electronic record is kept on E-shoppers with their likes and dislikes (Levy, 1998). The customer information helps Web retailers to mimic the intimacy some consumers have with local stores, as it lets them target their customers with sharply-targeted E-mail instead of onerous "spam" or unsolicited cyber-junk mail (Levy, 1998). Consumers are actually asked if they would like these intimate relationships to take place. Some of the information is needed to allow devices to interact and get guarantee security, trisections, copyright protection or similar conveniences. Some digital identifiers can be used by marketers who want to build customer profiles by a totalitarian regime interested in persecuting those trafficking in "wrong" ideas (Schenker, 1999). For example, news of strife in Indonesia's East Timor, through an independent "virtual East Timor", has been assaulted by, allegedly, Indonesian government-backed hackers (*Asiaweek*, 1999c), despite the fact that Dublin Internet Service Provider (ISP), named Connect-Ireland, established the site with the backing of East Timorese 1996 Nobel peace prize winners, Bishop Carlos Belo and Jose Ramos Horta. A sophisticated hacker attack, coming from computer servers in Canada, Australia, the US and Japan forced Connect-Ireland to shut down its service (*Asiaweek*, 1999c).

"Cookies" are digital identification tags that track consumers as they page through Websites and enable site operators to compile a portrait of a user's interest and, even, financial status (Schenker, 1999). Although dirty E-mails can be deleted, filtered or ignored, the big worry for Net users is the potential for cyberspace harassment to cross into real life (Manketelow, 1999). In the US, the first cyber-stalker has been charged with stalking and harassment on the Internet, computer fraud and solicitation for rape (Driscoll, 1999). In the UK, Novell, one of the world's leading providers of network software, began researching computer "spam", unsolicited electronic junk mail, in an effort to estimate the cost to business in terms of time and money wasted (Driscoll, 1999). Spam now makes up about 10 per cent of all E-mail around the world (Hagel and Singer, 1999). As a spin-off from their research, they uncovered an alarming number of women, 41 per cent of regular Net users, who said that they had been sent pornographic material or had been harassed or stalked on the Net (Driscoll, 1999).

In summary, Internet abuse can be categorized in four major areas - international and domestic fraud, as in the case of the "Dominion of Melchizedek" scam is one, slovenly reporting, which happens because the standards of accuracy on the Internet are low and speed of dissemination is high, is another. For example, in the case of Pierre Salinger, former television newsmen, where, on the basis of a Web page of dubious origin, it was propagated that he claimed, at a news conference, that TWA 800, a passenger plane that crashed into the Atlantic killing all aboard in 1996, had been downed by a missile (*The Economist*, 1999b). Slovenly reporting also includes malicious gossip or fictions that one would have circulated in a small group. This now spreads across the world, instantly forwarded by E-mails and newsgroups. Then, thirdly, there is the "Chinese whisper", which makes the Internet a perfect vehicle for urban legends. Usually, somebody puts something on the Internet and someone else turns it into something else altogether, often into something intriguing. Lastly, there is invasion of privacy, exemplified by "spam", unauthorized information collection such as "cookies" and Internet harassment, even stalking.

Protecting rights and privacy is becoming more difficult. In the US, marketers expose an average consumer to roughly a million marketing messages a year, across all communication media, or about 2,750 a day (Hagel and Singer, 1999). There are new technologies which will permit consumers to challenge marketers for control of personal information, such as "anonymization" software which allows people to shield their identities as they surf the Web, "Cookie" suppressers that stop information collection by Web sites and E-mail filters that attempt to protect individuals from "spam" (Hagel and Singer, 1999).

Managing the World Wide Web

The adoption, by consumers, of the World Wide Web element of the Internet is being presented as a revolutionary innovation, taking off only within the last few years. The Web's structure is largely governed and determined by the World Wide Web Consortium, known to insiders as W3C. The Consortium is headed by Web inventor, Tim Berners-Lee, now at the MIT Laboratory for Computer Science (LCS), and currently consists of 275 member organizations, including companies, non-profit organizations, industry groups and government agencies from all over the world (Garfinkel, 1998). The W3C is the closest thing to the governing body of the famously decentralized Web. According to critics, W3C merely rubber-stamps what its leader, Berners-Lee, desires to be done, inducing a steady decline of member attendance at semi-annual meetings to 110 out of 140 members, in 1996, to only 70 out of 240 members in 1998 (Garfinkel, 1998). Berners-Lee has a large influence on the operation of the W3C; its influence earned by his role in the Consortium of the Web itself. Essentially, what Berners-Lee invented was a scheme for linking a document from many kinds of sources to any computer and then to the Internet. Dubbed the Universal Resource

Location, or URL, this innovation gave everything on the Internet its own unique address. Once one types an URL into a special program called Web browser, the program puts out to the Internet, fetches the information and displays on the user's computer screen (Garfinkel, 1998).

One of the biggest impediments to E-business is the fact that computers and Webs are not very effective in recognizing context; thus, many Web searches result in unwanted information. The reason is that the Web's main language, HTML (hypertext markup language), is essentially superficial. It tells a Web browser how to lay out the contents of a Web page, but it remains ignorant of the content. The World Wide Web Consortium (W3C) developed an extension to HTML, called XML (eXtensible Markup Language), which, in addition to describing content, also provides a way of indexing data (*The Economist*, 1999a). It is a system of tagging data with relevant information, allowing applications running on the computers to respond in an appropriate way. For example, XML makes it clear that "The Times" is a newspaper and in a particular time zone. By using meta-tagging data that describes data, XML can also speed searches in the way a librarian's card index can. However, in order for XML to work effectively, there is also a need for some agreement on definitions. This can be achieved within particular professions, such as medicine, although there is a need for a shared language of business, on the Internet, across industry. Microsoft is using its market clout to enforce global standards via its product, "BizTalk", which will be incorporated into Office, BackOffice and Windows (*The Economist*, 1999a).

The biggest issue on the Internet is privacy; a concern that has a significant commercial impact motivating the World Wide Web Consortium member's debate. According to some surveys, as many as 80 per cent of Internet users refuse to make purchases on-line because their privacy may be violated via the information they surrender in making transactions (Garfinkel, 1998). Whilst clicking onto one Web site may provide complete anonymity, on the other hand, a different site might secretly record a user's name, E-mail address and all information to which one has access (Garfinkel, 1998; Schenker, 1999). A new Platform, For Privacy Preference Project, overseen by the World Wide Web Consortium and backed by companies such as IBM, aims to allow users to be informed of Web site privacy practices and control what information users give out (Schenker, 1999).

Drafting legislation is fraught with problems, as political and business interests vie in having their view taken on board by legislators. The original aim of legislation, often, is lost and the end result fails to satisfy anyone. Some believe that if E-commerce is to be adopted successfully by UK companies, the regulatory regime should be acceptable and user-friendly to those businesses most affected by E-commerce whilst still giving adequate protection to the public interest. At the core of the debate is a proposal to ensure that the security services have access to the encrypted material being sent over the Net. European governments and the US have radically different approaches to data privacy. The European Commission issued a Directive, in October 1998, giving national data regulators wide powers to control what types of data could be processed abroad and to hold export of personal data to countries, such as the US, deemed to have inadequate protection (Schenker, 1999). The US government overly relies on industry self-regulation (Garfinkel, 1998; Schenker, 1999).

Putative Benefits of the Internet

The most often quoted benefits from the electronic delivery of information are timeliness and connectivity. The fact that the fundamental factor of globalization rests, first and foremost, on reducing the costs of information and its transmission can never be over-stressed. Thus, the prediction that by the year 2001, three-quarters of households in the US, along with over a half a billion people globally, are expected to subscribe to a wireless communication service, highlights the degree of future communication patterns. Equally, it is worth noting the degree of future social division, exemplified by the fact that two billion inhabitants on this planet do not yet have electricity and that about half of the current world population has never made a simple telephone call.

Internet commerce is believed to shift the balance of commercial power to buyers as, on the Net, competition is just a click away, giving instant choice. Furthermore, people can easily find a wealth of information and can compare prices. Similarly, the Net allows consumers and corporate buyers to pool their purchasing power and get volume discounts. The Net also eliminates geographical protection through offering a global reach.

It is often argued that the information and the mechanisms for delivering information provide the basis for competitive advantage. Communication technologies (ICT) hold broad meanings and refer to computers, communication software and devices; satellites and cable networks; video cassette recorders and glass-fibre cables; direct mail; electronic mail; video-, computer- and tele-conferencing; teletext; on-line database; interactive television and the Web - all of which have become realities of contemporary communication media.

In the traditional communication media, such as mail, informational components of value were deeply embedded in the physical value chain and these were often obstructive to the visibility of their separate existence. For example, when information was carried by traditional modes of communication, such as an individual or by direct mail, information was delivered to its intended destination following the linear flow of the physical value chain. However, in the electronically connected or wired environment, information can

travel in many directions, simultaneously offering the possibility of being un-bounded from its physical carrier.

Notwithstanding that information technology provides gains in time advantage, in shipping information to destinations and that some have argued that allowing everyone to communicate with everybody is, essentially, a zero cost, there are associated costs with digital connectivity. For those organizations which work with multiple sites, speed, efficiency, reliability and flexibility provided by digital connectivity more often than not justifies the associated costs, provided suitable connectivity channels are chosen.

In addition, for example, the Net provided an easy way of evading government censors to facilitate news around the world - such as recent events in China. In a similar way, students in France used the French Minitel system to organize a successful fight against plans by the French government to restrict admission to government - subsidized universities. Those who use the Net control the information flow on the Net. There is a much more active form of participation than what is provided by other forms of mass media. Television, radio and magazines are all driven by those who own and determine who writes for them. The Net gives people a media they can control. This control of information is a great power not available before to the everyday person. For those who have no skills, or time, to exercise information control, there is a personal information intermediary, "infomediaries", who aggregate information with that of the consumer and use this combined market power to negotiate with vendors on the consumer's behalf (Hagel and Singer, 1999). These infomediaries become the custodians, the agents and the brokers of information about consumers; marketing this information to business and giving them access to it while protecting the consumers' privacy (Hagel and Singer, 1999). In the US, the Fourth and Fifth amendments to the US Constitution defend the right to privacy or the right to be left alone. In 1928, Mr Justice Brandies, in *Olmstead versus United States*, declared that 'the right to be left alone is the most comprehensive of rights and the right most valuable by a free people' (Hagel and Singer, 1999: 7).

Of course, if one does not have access to an Internet connection, or cannot afford the connection fees, it does not make any difference that information is on-line. What the Internet does do is bring down the cost of accessing information to a point that makes it realistic for many more people to use the Internet than ever before.

Conclusion

Each organization's need for connectiveness will depend, in part, on environmental forces it faces and its own internal dynamics. The move to global or Web-to-Web connectivity will occur at different speeds and with varying intensity.

On the one hand, fears exist that electronic banking, shopping and the development of other electronic services might increase social division within, and between, social groups. Today, people without telephones, credit cards and bank accounts are becoming marginalized by society, whilst, in the future, the same is likely to happen to those who lack access to the Internet.

On the other hand, E-commerce will enhance competition, as "standard assets" such as retailing, warehousing, factory and office space, lacking flexibility and functionality to meet new needs, will be driven out of the market. Enterprises will be required to:

- develop a better understanding of technology and how it can be utilized to the company's benefits;
- in the face of rationing, learn how to attract and enhance customer loyalty;
- behave ethically to build customer trust and loyalty;
- learn how to work in an integrated fashion, in cross-functional teams, incorporating internet-librarians, and be oriented to meet customer needs; and
- increase interactive, one-to-one marketing and trading.

Over the long term, enterprises that remain unprepared for E-commerce and consequent changes will experience crisis. Alternatively, enterprises that understand the implications of E-commerce will be able to adjust better and thrive. Carnegie Mellon University, for example, is offering a Masters degree in Electronic Commerce; a field that judging by the lack of profits from almost all Internet companies, no one has actually yet mastered. The curriculum is designed to train a new generation of managers, planners, analysts and programmers (*Asiaweek*, 1999a). Because the Internet is a neutral, free, open and un-regulated communication channel, it implies that all users are connected but that no one is in charge in cyberspace (Friedman, 1999). The Internet is democracy, but without a constitution (Friedman, 1999). The Internet

makes all "netizens" broadcasters and, because of this, it is important to cultivate citizens that uphold critical values and ethical behaviour (Moor, 1985; Friedman, 1999).

The power of the Internet in its current state lies in its resistance to governmental regulation (Gibson, 1999). Its ability to speed information past censors and across borders makes it a force for free expression, as well as an "spewing front" for propaganda, mis-information, vengeance and even terrorism (Gibson, 1999). Concern with the Internet's potential to invade people's privacy and cause untold additional havoc has politicians around the globe considering new laws to prevent the revolutionary communication channel from being mis-used. Although the ECHELON globe-trading system, run by the US National Security Agency (NSA), is a combination of spy satellites and sensitive listening stations, it eavesdrops on just about every electronic communication that crosses national borders, phone calls, faxes, telex and E-mail, plus radio signals, including short-wave, airline and maritime frequencies (Port and Resch, 1999). Business executives worry that the worldwide electronic market-place will be ruined by a patchwork of inconsistent local regulations, exemplified by Kuwaiti decency standards, European privacy laws and, even, Iowa sales taxes (France, 1999). Current self-regulation and policies made by the quasi-governmental World Intellectual Property Organization (WIPO) do not have sufficient checks and balances (France, 1999). Issues such as electronic contracts and cybersquatting, in addition to Internet taxation and privacy, seem to be too important not to be dealt with in a transparent or regulated way (France, 1999).

References

- Asiaweek*, (1999a), 'Dream Career Track', Volume 25, Number 5, February, p. 59.
- Asiaweek*, (1999b), 'Net Tales', Volume 35, Number 3, December, p. 28.
- Asiaweek*, (1999c), 'Trouble in E-Timor', Volume 25, Number 5, February, p. 59.
- Auchincloss, K. (1998), 'Real Men Don't Click', *Newsweek*, Volume CXXXII, Number 23, 7 December, pp. 4-5.
- Bankers Magazine* (1997), 'Alternative Delivery Systems: Supermarkets, ATMs, Telephone Banking, PCs and On-line Banking', May, pp. 5-12.
- Bennett, M. (1998), 'The World-Wide Sell', *CIO*, September, pp. 44-45.
- Berners-Lee, T. (1990), *Information Management: A Proposal* [On-line], available at WWW URL, <http://www.w3.org/pub/www/History/1989/Proposal.html>.
- Berners-Lee, T. and Cailliau, R. (1990), *WorldWideWeb: Proposal For a HyperText Project* (On-line), available at WWW URL, <http://www.w3.org/pub/www/Proposal.html>.
- Blythe, J. (1997), *The Essence of Consumer Behaviour*, Prentice Hall, London.
- Branscum, D. (1998), 'Web Sites For All Eyes', *Newsweek* (Special Issue), Winter, pp. 20-25.
- Bray, P. (1997), 'Yield to Electronic Impulse: The Internet', *The Sunday Times*, 20 April, p. 18.
- Cavanaugh, K. (1998), 'Bandwidth's New Bargains', *Magazine of Innovation Technology Review*, Volume 101, Number 4, November-December, pp. 63-65.
- Cleland, K. (1995), 'On-Line Offers Truly Receptive Promotion Target's', *Advertising Age*, 20 March, p. 18.
- Donaton, S. (1995), 'Pathfinder Blazes a Trail to Ads', *Advertising Age*, 10 April, p. 19.
- Driscoll, M. (1999), 'You've Got Mail: "Scream"', *The Australian*, 8 March, p. 15.
- Erikson, J. (1999), 'Middlemen Beware', *Asiaweek*, Volume 25, Number 3, 19 March, p. 46.
- Evans, P.B. and Wurster, T.S. (1997), 'Strategy and the New Economics of Information', *Harvard Business Review*, Volume 75, Number 5, September-October, pp. 71-82.
- Farrell, R. (1998), 'Electronic Commerce: Basics For Beginners', *Briefings*, Issue 59, December, p. 11.
- Flynn, L. (1999), 'Testing the Links', *The Sunday Morning Herald*, 23 February, p. 4c.
- France, M. (1999), 'The Net: How to Head off Big-Time Regulation', *Business Week*, 10 May, pp. 73-74.
- Friedman, T.L. (1999), 'Judgment Not Included', *The New York Times*, 27 April, p. 18.
- Gaffin, A. (1994), 'Mall-Hopping on the Internet', *Network World*, Number 4, 10 October, pp. 11-41.
- Garfinkel, S.L. (1998), 'The Web's Un-Elected Government', *Technology Review*, Volume 101, Number 6, pp. 38-46.
- Gibson, H. (1999), 'Web of Spies', *Time*, Volume 153, Number 20, p. 35.
- Hagell, III, J. and Singer, M. (1999), 'Private Lives', *The McKinsey Quarterly*, Number 1, pp. 6-15.
- Hamilton, A. (1999), 'Super-Charging Snail Mail', *Asiaweek*, Volume 25, Number 5, February, p. 59.
- Hoffman, D.L. and Novak, T.P. (1995), 'Marketing in Hypermedia, Computer-Mediated Environments: Conceptual Foundations', Working Paper Number 1, Project 2000 Research Programme, available at <http://www.2000.ogsm.vanderbilt.edu>.
- International Data Corporation (1998), 'Internet Users - Asia Pacific', *Hong Kong Business*, Volume 17, Number 198, December, p. 2.
- Jackson, M.H. (1997), 'Assessing the Structure of Communication on the World Wide Web', *Journal of Computer Mediated Communication*, Volume 3, Number 1, pp. 17-23.
- James, G. (1998) 'Stock Scams and Spams on the Internet', *Upside* (9th Anniversary Issue), Volume 9, Number 1, November, pp. 77-86.
- Journal of Advertising Research*, (1997) 'Advertising: Brand Communications Styles in Established Media and the Internet', March, pp. 17-23.

- Keynes, J.M. (1981), *The Collected Writings of John Maynard Keynes, Volume 19: Activities 1922-1929 - Return to Gold and Industrial Policy*, Cambridge University Press, Cambridge.
- Krol, E., and Hoffman, E. (1993), *FYI on What is the Internet? Network Working Group Request For Comments: 1462; FYI: 20*. URL:gopher://dsl.internic.net/00/fyi/fyi20.txt
- Lacayo, R., (1993), 'The Lure of the Cult', *Times*, Volume 149, Number 14, pp. 39-40.
- Levy, S. (1998), 'Christms.com', *Newsweek*, Volume CXXXII, Number 23, 7 December, pp. 46-50.
- Lintner, B. (1998), 'Fantasy Island', *Far Eastern Economic Review*, Volume 161, Number 50, 10 December, pp. 32-35.
- Long, G. (1999), 'World Body Shakes Up Net Rules', *The Australian*, 9 March, p.33.
- Manktelow, N. (1999), 'Users Open to Abuse', *The Australian*, 8 March, pp. 15.
- Miller, R. (1996), *Marketing Technology: IT and Miss-Marketing*, Haymarket Publishing, London.
- Miller, R. (1997), *Point-of-Purchase: Banks Branch Into POP Marketing*, Marketing Publications, London.
- Miller, S. (1996), *Civilizing Cyberspace: Policy, Power and the Information Superhighway*, ACM Press, New York.
- Moor, J.H. (1985), 'What Is Computer Ethics', in Terrell Ward Bynum, (ed.), *Computers and Ethics* (Metaphilosophy Journal) (Special Issue), October, pp. 266-275.
- Neuman, P.G. (1995), *Computer-Related Risks*, Addison-Wesley/CM Press, New York.
- NTIA Office of Assistant Secretary (1995), *Electronic Commerce* [On-line], available at <http://www.ntia.doc.gov:80/opadhome/ecom3.html>, December.
- OXIRM (Oxford Institute of Retail Management) and KPMG, (1996), *The Internet: Its Potential and Use by European Retailers*, Templeton College, Oxford.
- Peterson, R.A. (ed.), (1997), *Electronic Marketing and the Consumer*, Sage, London.
- Port, O. and Resch, I. (1999), 'They're Listening to Your Calls', *Business Week*, 31 May, pp. 58-60.
- Reed, D. (1997), 'Marketing Technology: Up Close and Personal: One-to-One Targeting is Definitely on the Marketing Agenda But is That Personal Touch Always Welcome', *Marketing Week*, Centaur Communications, 5 June, pp. 6-7.
- Reynolds, J. (1994), 'Is There a Market For Tele-Shopping': The Home Network Case', in McGoldrick, P. (ed.), *Cases in Retail Management*, Pitman, London, pp. 112-123.
- Reynolds, J. and Davies, R.L. (1988), *The Development of Tele-Shopping and Tele-Services*, Longman, London.
- Sandberg, J. (1998), 'The Electronic Mail', *Newsweek* (Special Issue), Winter, pp. 10-19.
- Schenker, J.L. (1999), 'Who Watches the Web', *Time*, Volume 153, Number 15, 19 April, p. 64.
- Schneider, M.L. (1997), 'When Overnight Isn't Fast Enough', *Graphic Arts Monthly*, February, Volume 69, Number 2, pp. 68-73.
- Sharp, D.E. (1998), 'Extranets: Borderless Internet/Intranet Networking', *Information Systems Management*, Volume 15, Number 2, Summer, pp. 31-33.
- The Economist* (1995), 'The Internet - The Accidental Super Highway', Volume 348, 1 July, pp. 118-119.
- The Economist*, (1998), 'When the Bubble Bursts', Volume 350, Number 8104, 30 November, pp. 21-22.
- The Economist*, (1999a), 'The Net Imperative: Business and the Internet', Volume 351, Number 8125, pp. 5-44.
- The Economist*, (1999b), 'Truth, Lies and Cyberspace', Volume 351, Number 8116, 24 April, p. 122.
- [UK] Department of Trade and Industry (1997), <http://www.edma.org.>, 7 October.
- Withmore, S. (1999), 'How Not to Get Ripped-off While Shopping', *Asiaweek*, Volume 25, Number 11, p. 51.