Chapter I

E - Commerce
E-commerce has led to profound changes in the way business is conducted. Networked organizations and decentralized corporate processes have changed relationships between the producers and users of goods and services, and spurred the rapid integration of global markets. Information and communication technologies and new developments such as online business-to-business exchanges and virtual trading networks have transformed traditional business practices by connecting critical business systems directly to key constituents like customers, employees, suppliers and distributors via the Internet. These exchanges have reshaped the world of business and trade transactions. The private sector has been the driving force behind this phenomenon. The paradox remains, however, that while networked technologies are a great leveler of economic and social structures, they also have the potential to exacerbate the "digital-divide"—the gap between the level of e-commerce development in industrial countries and that in countries and organizations standing on the sidelines of the global e-commerce revolution.

Internet-based business-to-business electronic commerce creates new market structures that enable business partners to switch allegiances at low cost, since the Internet expands choices and options to suppliers and consumers on an exponential basis. In addition, it enables contracting parties to exchange information, best practices and market feedback in real time. Countries left out of the loop could experience the costs of severe economic isolation in this highly competitive environment. Recent findings by Computer Economics, an e-business adviser to corporations, suggest that while e-commerce will continue to boom in the next decade, Africa, South America and parts of Asia could be left out of the trade revolution.

There is a very real possibility that developing countries may be constantly playing catch-up with the technologies and policy principles that have been formulated in the developed world. Also, the "digital divide" is hampering the
ability of developing economies to be part of the ongoing process in developed economies: of assessing and possibly re-defining the existing rules for global electronic commerce.

One of the key functions of the Global Information Infrastructure Commission (GIIC), an independent, non-governmental initiative launched during the G-7 summit meeting at Brussels in 1995, has been to ensure that developing countries are constantly engaged in this dialogue.

Through its global network of private and public sector commissioners who represent both developed and developing countries, the GIIC has worked with national governments, industry groups, and international organizations - to advance the dialogue on the rules needed for the global information economy, as well as to create awareness and build constituencies for change. In its work over the past five years, several factors have led the GIIC to conclude that the global networked economy needs increasingly flexible legislative solutions to the challenges posed by rapid technological change. The factors are:

1. Regulatory Frameworks in Constant Flux

The technological convergence of telecommunications and computers has revolutionized the way in which society produces, stores, and uses information. Meanwhile, the rapid growth of networks across national boundaries has blurred the lines between providers, suppliers, and originators of information. These developments have called into question how regulatory systems can ensure trust, confidence and consumer protection within a rapidly globalizing technological environment.

For example, on-line issues related to digital copying and Internet domain names are raising critical issues about the ownership of copyrights and patents - and are creating brief and sometimes fluctuating values for intellectual property
rights, privacy, and security, as information is digitally transformed and moves through its various iterations.

The continued education of government regulators and consumers, as well as the development of technology-neutral self-regulatory schemes in partnership with the private sector, is essential to spur institutional adaptation and quick response to new technologies and applications.

2. New Definitions of Individual Rights

In networked economy, businesses can employ data integration technologies such as customer profiling to understand customer needs, provide support over the Internet, and integrate these customer demands within their supply chain. The use of these technologies is leading to increased awareness of what consumers perceive as potential violations of their rights as individuals, such as the misuse or usurpation of personal data, inaccurate and incomplete information and payment fraud. By the same token, the networked economy has put information and power back into the hands of the individual, with user communities being redefined in accordance with common interests rather than by geographical or physical proximity.

In the electronic age, the buyer has access to information - and is thus empowered to change loyalty in an instant. So if businesses in the electronic age are to maintain customer loyalty and be competitive, they have to improve the service and value they bring to their customers. Businesses recognize that it is in their best interests to protect the privacy of their customers, and to build trust and confidence that personal data are accurate and will not be misused.

As a result, businesses are collaborating to develop self-regulatory codes of conduct, trustmarks, and seals to ensure flexible yet enforceable trust systems
that are awarded to online retailers who comply with a high- and independently verifiable standard for electronic commerce.

These seals cover every aspect of their operations, from their trading status to their privacy and security policy, customer service and support policy, information integrity, and warranty information. In its work in both developing and developed countries, the GIIC has observed that many countries do not have laws or cultural morés that support the preservation of personal privacy.

3. Challenges to Jurisdiction in Cyberspace

As transactions become more global, the control of government institutions over economic or other activity occurring in cyberspace is increasingly eroded. Jurisdiction and rules of origin are the two key factors impacting cross-border e-commerce, requiring that national and international frameworks be harmonized to enable dispute resolution and redress.

Currently, issues relating to taxation, intellectual property, and consumer protection all depend on the rules of origin -or country of consumption. However, as transactions move online and become increasingly global, both business and consumers are becoming wary of the costs they may incur if they need to engage in cross-border litigation of their rights.

By using Alternate Dispute Resolution (ADR), consumers and merchants can settle their disputes through a trusted third party in a low-cost and speedy way. There are several examples of ADR, such as BBBOnLine, part of the Council of Better Business Bureaus in the United States, and Cybertribunal in Canada.

Other organizations involved in international dispute settlement for electronic commerce are the ICC International Court of Arbitration of the International Chamber of Commerce (ICC), and the World Intellectual Property
Organization's Internet-based WIPO-Net, which has been set up to arbitrate IP-related electronic commerce issues. However, to give businesses and consumers in global electronic commerce additional certainty, together with robust, reliable electronic commerce transactions, such certification efforts need to be extended to other countries and jurisdictions.

4. Authentication and Security

Authentication and security are critical for assuring people that they are transacting electronic commerce in an environment free from illegal attack or trespass. Strong, market-led encryption technologies are essential, as well as minimum necessary legal frameworks to authenticate electronic signatures.

In addition, a legal framework must be in place to punish the dishonest. Since the private sector is leading in the area of encryption, there needs to be a partnership between the private sector and governments to create the frameworks necessary to ensure the trust and authentication needed to stem criminal activity.

Since users tend to distrust government controls on encryption, governments should commit to removing all controls on cryptographic technologies and applications and should cooperate with businesses to facilitate the internationally secure exchange of information.

5. Universal Commercial Codes

Legal codes specifying commercial, contractual, and liability issues are the underpinnings of electronic commerce and are essential to building consumer confidence. As global electronic commerce expands, businesses are looking to a permanent framework for electronic commerce transactions that is also guaranteed and recognized by national governments.

The Model Law has been the basis for the development of e-commerce laws in Singapore, Korea, and Colombia, and has spurred the discussion of similar initiatives in Australia, Canada, Chile, France; Hong Kong, India, Slovenia, Brazil, Mexico, Morocco, New Zealand, Peru, the Philippines, Thailand and Tunisia.

However, in spite of this activity, most countries have been slow to convert what has been the norm for commerce between parties for several centuries -- the exchange of paper documents -- into the electronic environment. Increased education and the involvement of the legal community within countries or trading blocs or regions such as Asia-Pacific Economic Cooperation and Free Trade Area of the Americas are critical to the rapid expansion of global electronic commerce and the involvement of additional countries.

The GIIC has been spurring the dialogue about removing barriers to electronic commerce in many countries around the world, including India, China, the Philippines and Venezuela, as well as many countries in Africa. In addition, the GIIC has worked in partnership with the Alliance of Global Business (AGB), a coalition of businesses in 140 countries, to urge governments to rely on business self-regulation and the voluntary use of empowering technologies to create trust across the spectrum of users and providers for e-commerce goods and services. Some initiatives include the AGB's 1999 Global Action Plan for Electronic Commerce, the Fact Sheet on the Duty-Free Treatment of Electronic Transmissions, and the Discussion Paper on Trade-Related Aspects of Electronic Commerce.
Most countries of the world are still only learning how various information technology innovations will affect the economy and labor markets. For developing countries, this process is far more profound, as governments and private sector groups endeavor to restructure their economies for the global digital economy. The G-8 representatives at the Okinawa summit have a unique and unprecedented opportunity to facilitate international cooperation for a secure global environment and a new international approach to building a global information economy in which every nation and every individual has a chance to participate. Any global approach or framework needs to be flexible enough to support the growth of the information economy, encourage trade and investment flows, create jobs, and provide consumers with the benefits of competition, while encouraging a stable, secure environment for electronic transactions.

Partnership with the private sector and international organizations such as World Intellectual Property Organization, the World Trade Organization, Organization for Economic Cooperation and Development and UNCITRAL is essential in creating cooperative systems to:


2. Increase consumer satisfaction and confidence in doing business on the Internet.

3. Establish merchant credibility and trustworthiness.

4. Support and enhance the self-regulation of Internet commerce.

5. Encourage the development of guidelines and symbols to support electronic commerce.
Countries need to extend these endeavors to provide technical and financial assistance to those nations on the sidelines of the global electronic commerce revolution and also to bring consumers and small and medium-sized enterprises in the dialogue. The inclusion of these actors can only serve to create a robust, secure, global information infrastructure, expand global trade and economic growth, and, most significantly, minimize the threat of an ever-widening digital divide.

**Consumer Protection in Electronic Commerce**

The study of consumer shopping makes a number of recommendations that will focus the energies of policy-makers, providing evidence that there are certain key consumer protection issues that must be addressed. Many specific recommendations arise from the detailed research findings.

1. If consumers are to take full advantage of the global shopping mall theoretically offered by the internet, they must feel confident of receiving a consistent standard of consumer protection wherever they shop. In order to make this possible, a co-ordinated international approach is needed to the formulation of guidelines governing electronic commerce. National governments should be encouraged to adopt best practice guidelines developed at international level.

2. Because adherence to many aspects of best practice guidelines is voluntary, consumers need a way of recognising internet shops which offer high standards of consumer protection with ease, wherever in the world those shops are based. The development of an internationally recognised certification or labelling scheme, which indicates that shops meet agreed minimum standards on a range of key issues, would go a long way to offering this international reassurance.
3. As online consumers experience many types of problem, such as nondelivery of goods or obstruction in obtaining refunds, so there is a need for a third-party redress mechanism that offers a further channel to the consumer retailer that offers a further channel to the consumer once deadlock has been reached with the retailer. Such a mechanism needs to cover all companies selling goods to consumers on the internet. It needs to be accessible, affordable, fast, consumer-friendly, and binding on the company concerned. For such a mechanism to have teeth regardless of where a consumer shops, it must be supported by national governments.

Consumers should be made aware of the full name of the company they are dealing with, as this may not always be the same as the web address. The Consumers must at least be provided with the retailer’s geographic address, the country the company is registered in, a phone number, and an e-mail address. Where applicable, the consumer should also be given the registration number or licence number for the retailer, and contact information for the body with which the business is registered or authorised, to enable the consumer to check legitimacy. Sites should make it clear to the consumer which countries they deliver to, before the order process is embarked upon. This information should be clearly sign posted from the home page, and should be kept up to date. Sites must display one overall total price to the consumer before the order is completed, which should include any delivery charges. If sites are marketing to consumers in other countries, it is important that they design their sites with the facility to incorporate the delivery charge in the total price, once the consumer has provided the relevant information about where they live and what form of delivery they want.

Delivery charges can make a significant difference to the overall cost, so it is not acceptable to ask the customer to contact the retailer separately to obtain delivery costs. Retailers supplying to other countries can also do much more to
assist consumers in converting prices into their own currencies. Only one in four of the sites in other countries purchased from gave any assistance with converting prices. This is not a difficult facility to provide, and helps the consumer considerably when deciding whether to make a purchase.

Terms and conditions contain essential information such as cancellation and cooling-off rights, payment and delivery terms, and dispute resolution, so it is essential that they be presented to the consumer before the purchase is completed. Retailers should design sites to ensure that purchasers are shown the terms and conditions before confirming their order, or are offered a link to click on to the terms and conditions before confirmation.

Terms and conditions must be clearly sign posted/titled, and clearly differentiated from other information, so that consumers can identify that this is the legal part of the contract. Terms and conditions should be provided in a manner that can be readily printed off and kept by the consumer for future reference.

Consumers International and other consumer groups are firmly of the belief that the law governing internet transactions should be the law of the consumer’s home country, in order that he or she is familiar with the protection available. This is a controversial area which is engendering much debate at present.

Some retailers do stipulate within the contract which law they would like to apply, but a final decision on this, should a dispute arise, will be taken by the judge hearing the case. If a retailer specifies that the law governing transactions on its site is that of the retailer’s own country, rather than the consumer’s country of residence, that condition must be highlighted to the consumer in a clear and unambiguous manner.
If a consumer agrees to such a contract, the consumer must not be deprived of the key consumer protections offered in his/her own country. Equivalent levels of protection must be offered. In addition, the consumer must have the right to pursue any dispute with in his/her own country of residence. Prior to the conclusion of the contract, the process of finalising the contract should be clearly explained to the consumer. However, although access to the internet is growing all the time among individual consumers, they have been slower than businesses to explore the possibilities of buying products over the internet. Even in the United States, only 29% of the 53.5 million adults with internet access have made an online purchase. In the United Kingdom, shopping ranks well below issues like education, business and e-mail access as reasons both for going online in the first place and for continuing to use the internet. The slow take-up of online shopping can be put down, at least in part, to a lack of confidence in buying through this new medium, and to fears about security and fraud.

When consumers commit themselves to a purchase online, they may not know the full identity of the retailer they are dealing with. They may not be told the terms and and conditions of the contract, or what their rights are when returning goods or obtaining redress. Nor may they have sufficient access to the retailer if something goes wrong - and the chance of something going wrong, such as non-delivery or damaged goods, is fairly high.

If electronic commerce is here to stay, national authorities, consumer organisations and businesses all have an interest in building consumer confidence by ensuring that consumers have the necessary access, protection, and service standards when buying. So much work is going on around the world on amending existing legislation and codes of practice, and on establishing new guidelines governing electronic commerce, that it would not be feasible to list all these initiatives here. The ones set out below are those which are most relevant to the consumer protection agenda.
The World Trade Organisation (WTO) has established a work programme on electronic commerce (adopted by the General Council on 25 September 1998), and published a study (Electronic Commerce and the role of the WTO, WTO Publications, March 1998), which identifies a range of issues that need to be tackled, including access to the internet, regulation of content, security and privacy questions, and the legal and regulatory framework.

The Organisation for Economic Co-operation and Development (OECD) Committee on Consumer Policy is drafting guidelines (Guidelines for Consumer Protection in the Context of Electronic Commerce), with detailed input from consumer representatives. The Transatlantic Consumer Dialogue (TACD) formulated recommendations on electronic commerce at a conference on 23-24 April 1999 in Brussels. These recommendations cover the establishment of minimum standards for consumer protection, urge the development of an International Convention on Privacy Protection, special protection for children, minimum standards for disclosure of information by suppliers, intellectual property rights, and call for discussion of a proposal to create a permanent global institution for consumer protection.


1. place of establishment of service providers

2. commercial communications (advertising, direct marketing etc)

3. definition and transparency requirements

4. on-line conclusion of contracts
5. liability of intermediaries

6. implementation

7. strengthening enforcement mechanisms, facilitating the setting up of cross-border alternative dispute resolution systems, and a requirement for fast efficient legal redress in the on-line environment.

8. The European Union’s Distance Selling Directive, which is still in the process of being transposed into national legislation across the EU, is also highly relevant.

Consumer organisations in a few European countries, including the Consumers’ Association in the UK and Consumenten bond in the Netherlands, have recently launched a certification scheme which is run outside of the industry. Each participating consumer organisation provided information about what steps it and its government had taken on behalf of e-shoppers, and about the protection (if any) available for consumers making payment over the internet or wishing to return unsatisfactory goods.

Guidelines for e-commerce

Developed nations have been taken specific initiatives to develop guidelines for electronic commerce. In addition to these specific guidelines, electronic transactions are of course governed, like any other transactions, by existing rules, for example on advertising, marketing, and unfair contract terms. However, agreement on which laws should apply in cross-border transactions has been the subject of debate. Countries within the European Union are currently in the process of transposing the Distance Selling Directive into national law. This will have an important effect on electronic commerce.
Australia

In *Consumer Protection in Electronic Commerce; Principles and Key Issues, April 1998*, the government National Advisory Council on Consumer Affairs set out 12 principles for electronic commerce:

1. Consumers using electronic commerce are entitled to at least the same levels of protection as is provided by the laws and practices that apply to existing forms of commerce.

2. Consumers should be able to establish the identity and location of businesses with which they deal.

3. Consumers should have readily available clear and comprehensive information before and after any purchase of goods and/or services.

4. Sellers must state contract terms in clear, simple language.

5. Sellers should ensure they receive confirmed meaningful consent from consumers for a purchase of goods and/or services.

6. Consumers are entitled to receive clear information about the types of payment which will be accepted by the merchant or the payment provider.

7. Consumers are entitled to have their complaints and inquiries dealt with fairly and effectively.

8. Sellers should provide information to E-commerce guidelines and consumer rights: a country-by-country guide consumers about affordable and effective dispute resolution arrangements, when they are available.

9. Sellers must respect customer privacy.
10. Industry code administration bodies must closely monitor the application and effectiveness of their codes and be able to correct any deficiencies which are identified.

11. Each code-operating body should strive to maintain and promote consumer confidence in the global marketplace.

12. Governments should actively develop their consumer protection responsibilities. The Australian Consumers’ Association magazine Choice has published a number of articles giving advice to consumers on electronic commerce.

Belgium

There are no specific guidelines for electronic commerce. The Belgian consumer organisation, Verbruikersunie, published guidance on electronic commerce in Budget & Droits No 138, April 1998.

Germany

There are no national guidelines for electronic commerce business practices yet. However, a 1997 law (Informations-und Kommunikationsdienste-Gesetz-1uKD) covers electronic information and communication services, and contains consumer protection provisions in areas such as:

- identity of supplier

- data protection

- digital signatures and certification processes

- protection of children
copyright.

The German consumer organisation, AgV, has published a number of studies and brochures giving advice to consumers on electronic commerce.

Japan

Effective approaches to consumer protection in electronic commerce (interim discussion of issues), Consumer Business Research Committee, Ministry of International Trade and Industry, February 1998, promotes the use of guidelines prepared by the Electronic commerce Promotion Council of Japan. These cover:

- consumer protection
- privacy and payment
- clarification of the law governing sales
- made in the home
- the need for strict enforcement of existing laws
- the need for greater education of consumers.

Sweden

The Nordic Consumer Ombudsman's position paper on trading and marketing on the Internet and in similar communication systems December 1998.

- marketing material
- clear provision of information
Throughout this survey Hong Kong is referred rather than China, because the Hong Kong Consumer Council was one of the participating organisations, and because Hong Kong's consumer market remains distinct from that of the mainland.

- conclusion of contracts
- binding communications
- payment
- performance and complaints procedures
- use of e-mail
- processing of data
- marketing directed at children and young people.

**United Kingdom**

Various consultative documents have been issued by the Department of Trade and Industry. *Net benefit: the electronic commerce agenda for the UK* establishes some consumer and data protection principles, generally confirming that existing UK legislation covers internet transactions. The Office of Fair Trading issues extensive guidance to consumers on how to use the internet for shopping safely.

**United States**

The most important agency with regard to consumer protection and electronic commerce is the Federal Trade Commission (FTC). The FTC's philosophy is that the laws, regulations and guidelines it governs are as applicable to online transactions as other transactions. Various documents such as *Advertising and*
Marketing on the internet: The Rules of the Road and Guide to Online Payments illustrate this position. In addition, the FTC has held hearings to help it understand how traditional consumer protections can best be translated into the new medium.

The one instance in which the FTC is moving in a new direction because of the internet is the privacy of children. In 1998 the United States Congress passed the Children's Online Privacy Protection Act. One essential element of online shopping is the passing of credit card details to the retailer over the internet, and the associated worries about these details reaching unauthorised third parties.

Although there are few rules specifically about credit cards and the internet, existing legislation is relevant in some countries. If the transaction involves a card and a Personal Identification Number, the Electronic Funds Transfer (EFT) Code says the consumer is liable for the first A$50 of any unauthorised transaction, unless the misuse stems from the consumer's negligence, in which case the consumer is liable for the total amount. If the transaction involved a card and no PIN, but does require a signature, the consumer is notable for any unauthorised transactions. Transactions involving a card and no PIN, not requiring a signature, are a grey area.

E-Transactions

Transactions are not limited to purchases of goods and services, but move along a spectrum beginning with information gathering and exchange, progressing to negotiation and decision to purchase, finally to completion of transaction and after sales support. In fact, at present, much of electronic commerce activity is concentrated in information gathering and exchange used to support purchase decisions.
As electronic commerce grows, the importance of sales transacted on-line is expected to increase. Business-to-business applications are driving the growth of electronic commerce, accounting for about 80 percent of Internet-based electronic commerce. Businesses have used EDI for over 25 years to conduct transactions with suppliers.

Now, lower costs and greater accessibility are causing businesses to move to the Internet, or to create hybrid networks through the use of intranets and extranets. In addition, an entirely new group of business users is coming on-line, mainly small and medium-sized firms that lack the resources required to support EDI. Consumer use of the Internet is still in its infancy. A Commerce Net/Nielsen survey conducted in 1997 found that only about 16 percent of Internet users in Canada and the United States have made purchases over the Internet.

As companies anticipate rapid growth in electronic commerce, significant investments are being made in the hardware, software and services required to support it. Global Internet-related investments were estimated to sum to about US$40 billion between 1995 and 1997, a portion of which was dedicated to electronic commerce. This US$40 billion in fact exceeded electronic commerce revenues.

An entirely new cadre of network-based intermediaries is developing, providing information search and evaluation, marketing, product and customer information, and secure on-line payment. Traditional sectors of advertising and delivery also play critical intermediary roles.

The United States is estimated to account for about 80 percent of worldwide Internet commerce revenue, followed by Canada at 5 percent. The United States
accounts for between 70 and 85 percent of the top 100 sites by category of Internet purchases.

E-transactions: A Canadian Model

Canada has the second highest number of top-100 sites. Many people are predicting that electronic commerce will become a pervasive form of business within the next ten years. Assessing how likely this is to happen requires an examination of the intrinsic advantages and challenges of electronic commerce in general, and of specific types of transactions.

E-commerce encompasses three distinct types of transactions: those between businesses, those between businesses and consumers, and government services. These transactions are supported by the information technology infrastructure, consisting of hardware, software and enabling services. E-commerce provides a powerful means of diffusing the advantages of networking throughout the economy, based on a platform provided by the information technology sector. This sector is strong and growing, as demonstrated by increasing shares of gross domestic product (GDP).

In the United States, the information technology sector has grown from just under 5 percent of the economy in 1985 to just under 8 percent in 1997. Given that prices for information technology goods and services have fallen dramatically – for example, the cost of microprocessing computing power has fallen from US$230 to US$3.42 per MIPS (millions of instructions per second) since 1991 – this increasing share of GDP is even more impressive.

The story is the same in Canada. The information and communications technology sector accounted for 5 percent of GDP in 1990, increasing to over 7 percent in 1996. This sector accounted for 30 percent of total economic growth between 1990 and 1996, with compound annual growth rates of 7.6 percent
during this period, compared with 1.5 percent for the total economy. Electronic commerce will spur continuing growth in the information technology sector.

Given its potential to change how business is done, electronic commerce will have even broader impacts, promising to accelerate growth not only in the information technology sector itself, but also across all sectors of the economy, such as manufacturing and retailing. The intrinsic advantage of the Internet as a platform for electronic commerce rests on the open, non-proprietary nature of the network: the Internet allows businesses to use a global, interactive means of information exchange at a low cost. While some would argue that such a capability already exists through existing communications networks such as telephone, fax or proprietary networks, the Internet offers an unmatchable combination of interactivity, versatility, low cost and speed.

The implications of worldwide, low-cost information exchange are profound. The full potential of computerized design, manufacturing, delivery and services may now be realised by linking all parts of a distribution chain together, from product concept, design, testing, and manufacturing to marketing, after sales and service. For example, software designers and automotive manufacturers can test concepts and prototypes with users, and demand forecasts can be immediately passed from marketing to production and the supply chain.

As a result, efficiency and productivity are increased through lower procurement costs, reduced processing errors, reduced inventories, and faster time to market. For example, by linking marketing to manufacturing and procurement, IBM improved inventory turns and experienced savings of US$500 million due to lower investment and operating costs.
Automotive companies have reduced material flow to the supply chain from up to six to less than two weeks. Companies are also adopting the Internet as a base for business transactions to gain a competitive advantage, often at the insistence of other business partners in a supply chain. These forces are expected to result in the rapid growth of business-to-business electronic commerce. From the consumer’s perspective, electronic commerce offers significant benefits.

Convenience, increased access to information, lower prices, and choice are benefits cited most often by consumers. For example, a small business, Unique Patterns Design of Halifax, Nova Scotia, is able to offer custom patterns that are tailor-made for each customer. Electronic commerce is also being used to support purchases made in conventional retail channels, as it allows consumers to gather information and comparison shop on-line. Products and services most suited to electronic sale are those that are information intensive and can be delivered digitally, or tangible products that do not require tactile examination and can be easily shipped.

Early leaders in consumer electronic commerce have fit this profile, most notably financial services, computer hardware and software, travel, entertainment, and books and CDs. Electronic commerce has widespread benefits beyond those related to the transaction of business. Governments at all levels are turning to the Internet as a means of increasing the range, reach and availability of their services. Services are available 24 hours a day, seven days a week, independent of location. The costs of providing these services can be significantly reduced for both users and governments.

Electronic delivery of government services will also facilitate the future integration of government services from different departments and different levels of government. Other public sector institutions such as those in the
education and health sectors are also using the Internet as an affordable tool to increase the reach of their services.

Computer-based training can provide information which is immediately available and tailored to specific needs, making the goal of lifelong learning more attainable. In the health care sector, the Internet is being used to allow rural or remote doctors, clinics and hospitals to access specialized knowledge and services usually found only in urban centers, and to diffuse information to the public.

Most broadly, networking promises to allow citizens to participate more fully in society and create new sense of community through greatly improved means of communications.

The potential for electronic commerce is real. However, limiting factors exist, many based on the Internet itself, including issues of universal access, governance, and the future capacity of the underlying network. Access to the Internet, while growing, is far from universal: in Canada, 36 percent of households own a personal computer, and 13 percent had Internet connections in 1997. If Internet access from home, work, school and elsewhere is included, access is just over 30 percent. The majority of large businesses and an estimated 43 percent of small businesses have Internet access. While these levels of access are among the best in the world, they do not come close to the near-universal penetration of established communications technologies such as the telephone.

E-commerce promises to transform the conduct of business, consumer and government transactions, offering the benefits of more efficient supply chains, greater convenience and choice, and lower cost of doing business. However, before these benefits are realised, businesses and consumers want to know that
transactions are private and secure, that legal and financial frameworks exist to support transactions and that the information infrastructure works.

Many possible scenarios exist for the future of electronic commerce. Optimists assume that these issues will be addressed and that electronic commerce will continue to grow. The contrary, pessimistic belief is that growth in electronic commerce, particularly growth in on-line sales, will stagnate as underlying problems remain unresolved, which could lead to a spin-drying of the Internet into smaller managed proprietary networks. Electronic commerce promises to be a major generator of jobs and growth in the next century, through improvements in the productivity of business, growth in consumer transactions, and development of the supporting information technology infrastructure.

Experience has shown that early leaders quickly establish market dominance. Those who enter first are able to help shape evolving rules as well as business and consumer behaviour. Canada enjoys many advantages that position it to compete effectively in electronic commerce.

Canada has the highest standing of post-secondary education enrolment in the world, ranked first in knowledge workers by the World Economic Forum. Its telecommunications infrastructure is world class - it has among the lowest telephone costs in the world and the lowest Internet access charges among G-7 countries; it is second only to the United States in telephone mainlines and Internet hosts per capita among G-7 countries; and it has many pioneering telecommunications and information technology companies that are recognized worldwide.

Analysis of the challenges facing the use and growth of electronic commerce, reflecting views from business, consumers, provinces and territories, as well as international organizations, points to four key areas for electronic commerce
action in Canada. Most business relationships, whether between a consumer and a company or between firms, require a strong element of confidence and trust. The impersonal and remote nature of electronic commerce places a heavy burden on the need for means to reduce or eliminate risk.

Security, privacy and consumer protection are all required to instill trust in electronic commerce, for both businesses and consumers. A body of rules that govern how business and government transactions are conducted has developed over time. To remove barriers to the use of electronic commerce, these rules need to be examined to assess how they apply to the digital world, and adapted where necessary, to create a level playing field which is predictable and consistent for all kinds of commerce. Electronic commerce will not grow without a strong platform that includes network access and availability, and open standards. Electronic commerce is part of a broader process of economic, social and cultural change, characterized by the globalization of markets and the shift toward an economy based on knowledge and information.

Opportunities for jobs and growth created by electronic commerce need to be distributed as widely as possible among citizens, consumers and businesses, through development of skills and awareness, and government leadership as model users. The Canadian electronic commerce strategy is based on the recognition that the private sector has the key role in developing and expanding electronic commerce in Canada. Government’s role is to provide a supportive and responsive policy environment for businesses and consumers, one that allows for market flexibility while ensuring a minimum baseline for a fair marketplace.

Countries that can provide such environments will be better positioned to compete internationally. To this end, the Canadian government and private sector are working together to implement the Canadian electronic commerce
strategy. Electronic commerce is intrinsically global. The actions of any one country will have limited impact unless they are part of a larger international framework.

Canada is not developing domestic policies in isolation, but is committed to working with other countries to develop the international frameworks necessary to make electronic commerce grow.

*Organisation for Economic Co-operation and Development:* Canada's commitment to the international agenda is demonstrated by hosting the OECD Ministerial Conference on Electronic Commerce, in Ottawa, October 7-9, 1998. The conference includes governments and international organizations as well as business, labour and consumer interests. It leads to the establishment of agreements and action plans spelling out the current and future roles of government, international organizations and the private sector in addressing key electronic commerce issues. The Ministerial Conference represents the culmination of a series of electronic commerce conferences held by the OECD, beginning with a conference focussing on consumer views held in Paris in March 1997, followed by a conference focussing on business views held in Turku, Finland, in November 1997.

*Asia Pacific Economic Cooperation:* In November 1997, APEC leaders agreed to the development of a work plan for electronic commerce. Under the direction of a task force co-chaired by Australia and Singapore, the first phase of the work plan - consisting of benchmarking electronic commerce developments in member countries - has been completed. The second phase of the program is being reviewed by leaders at their meeting in Kuala Lumpur in November 1998, including the development of an electronic commerce vision statement to promote the use of electronic commerce in the region, and the development of recommendations for technical cooperation and capacity building, public sector
use of electronic commerce, and outreach programs targeted at small and medium-sized enterprises (SMEs). In addition to the Task Force, APEC Ministers of Telecommunications and Information Industries approved a reference framework for action to guide the work of telecommunications groups on a range of electronic commerce issues.

World Trade Organization: Canada has also taken a leadership role in ensuring that the trade disciplines of the WTO apply to electronic commerce. At the second WTO Ministerial in May 1998, members agreed to launch a comprehensive study of the trade policy aspects of electronic commerce, with a view to providing recommendations to ministers for future actions by the third Ministerial in 1999.

Free Trade Agreement of the Americas (FTAA): The FTAA has formed the Joint Government-Private Sector Committee of Experts on Electronic Commerce to make recommendations to ministers on how to increase and broaden the benefits of electronic commerce and, in particular, how electronic commerce should be dealt with in the context of FTAA negotiations. The committee is developing working guidelines and will be delivering recommendations for ministers prior to their October 1999 meeting.

G-8 Pilot Project: “A Global Market for SMEs”: The project, being coordinated by Japan, the United States and the European Commission, involves 20 countries and international organizations, including Canada. Its overall objective is to provide a framework and implementation plan for global coordination and cooperation in electronic commerce, focussing on SMEs. Business and consumer transactions require assurances of trust – trust that transactions are secure and private, that transactions are supported by complete and accurate information, and that consumer redress is available.
Measures developed for conventional commerce may be inadequate to provide trust in the digital economy. For example, while once data were held securely within an organization, either in paper-based files or in internal computer systems, now the Internet and hybrid forms such as extranets and intranets allow for potentially widespread information access. Issues of security once related only to law enforcement, not to protecting on-line transactions. Government baselines exist for business and consumer protection, but key issues - such as the verification of the identity of parties and the determination of transaction jurisdictions within a global context - remain unaddressed. In addressing these issues, both governments and the private sector have a role. Governments can legislate or regulate, while looking to the private sector to introduce voluntary codes and develop technological solutions.

Many of the elements of building trust involve both federal, provincial and territorial governments - the Uniform Law Conference of Canada, and the Consumer Measures Committee established under the Internal Trade Agreement, are pivotal in establishing model laws and providing guidance on consistent national approaches. Secure electronic transactions can be provided through the use of cryptographic technologies and certification authorities. These authorities, by binding parties to their respective digital signatures, provide authentication as to the identity of the transacting parties. Cryptographic technologies also provide for the integrity and confidentiality of the messages that are exchanged, and ensure that neither party to the transaction can deny its participation in the exchange of information (otherwise known as non-repudiation).

The benefits of cryptography for electronic commerce, privacy protection and crime prevention are clear. It is equally true that cryptographic technologies can be used to hide criminal activity and to threaten national security.
InVESTIGATIONS, PROSECUTIONS, AND THE ENFORCEMENT OF LAWS AND REGULATIONS COULD BE HAMPERED WITHOUT LAWFUL ACCESS TO THE EVIDENCE OF ILLEGAL ACTIVITY.

Canada does not restrict the freedom of choice of individuals or businesses to import or use cryptography. Users are free to determine what kinds of authentication and encryption products and services they need. Canada controls the export of cryptography along with 32 other nations that are members of the Wassenaar Arrangement, which stipulates which products require export permits and which do not. Canadian cryptography policy is under review in order to ensure that it contributes to the realisation of Canada’s goal to be a leader in the use of electronic commerce, and to ensure that it reflects an appropriate balance among business, human rights and privacy interests, public safety and law enforcement, and national security interests.

The policy, released in the fall of 1998, provides greater certainty for the business community, more confidence for consumers and support for law enforcement and national security. The strategy for the protection of privacy is to put the Canadian Standards Association National Standard into effect through light legislation, complemented by private sector action and consumer awareness. The Government of Canada’s fall 1998 private sector information privacy legislation strikes a balance between industry’s interest in compiling and using personal information and the consumer’s right to have personal information adequately protected. Consultations held during early 1998 found that there is strong support for using the Canadian Standards Association (CSA) Model Code for the Protection of Personal Information (also referred to as the CSA National Standard), as the basis for any such law, and the Office of the Privacy Commissioner of Canada as the oversight agency.

There is also general agreement on the need for a consistent approach among federal and provincial privacy laws for the private sector. While to date,
only Quebec has legislation, there is strong support for the use of the CSA Standard as the starting point for any new legislation. Canada has led the world in developing a National Standard for the protection of privacy. This Standard, developed by businesses, consumers and governments, addresses the way organizations collect, use, disclose and protect information, and the way individuals access personal information. An informed public is vital to the protection of personal information. Both the private sector and governments can work to raise awareness of privacy issues and ensure that citizens know their rights and the best way to protect their personal data. A good example is the partnership of the federal government and Stentor to fund a multimedia game, Privacy Playground: The First Adventure of the Three Little Cyberpigs, to raise privacy awareness among children. The government encourages the development and use of such technologies for the lawful protection of its citizens. The Working Group on Consumers and Electronic Commerce, composed of consumer and business associations and governments, is finalizing Canadian guidelines on consumer protection in electronic commerce. The guidelines define consumer protection requirements and provide the basis for development of voluntary and legislative measures related to consumer information, contract formation, privacy, security and redress.

A range of consumer protection legislation already exists in Canada, in both provincial and federal spheres. The Consumer Measures Committee established under the Agreement on Internal Trade is considering ways to address consumer protection in electronic commerce. Consumer Protection Rights in Canada in the Context of Electronic Commerce, a report prepared by the legal firm of Gowling, Strathy & Henderson, is being used as a basis for discussion.

The Government of Canada is also looking at provisions under the Competition Act governing deceptive trade practices and misleading advertising. Governments, business and consumer groups agree that voluntary
codes can play a vital role in areas not covered by legislation. For example, the Canadian Code of Practice for Consumer Debit Card Services, established in 1992 by consumer groups, businesses, and provincial and federal governments, has successfully guided consumer protection practices of financial institutions.

The Working Group on Consumers and Electronic Commerce will be addressing consumer awareness in the guidelines on consumer protection in electronic commerce, including the need for consumers to be provided with advice on how to minimize the risks entailed in electronic transactions, and legal rights and obligations. Technology can provide the tools to make information available to consumers. Examples include posting information on laws that apply in different jurisdictions, and posting seals of approval on Web sites that meet defined criteria.

As new forms of business practice evolve, marketplace rules play a critical role in creating codes of conduct – for example in the use of electronic signatures, the assignment of liability, and the protection of trademarks. Without clear rules, the use and growth of electronic commerce will be stalled. The overriding need is to remove barriers to the use of electronic commerce by clarifying how these rules apply to the digital economy and updating them where necessary. The objective is to ensure that equivalent treatment is provided for digital and non-digital transactions in a consistent and predictable manner.

Business has clearly stated that clarifying marketplace rules should be the government’s top priority. Consistency among and between provinces and territories and the federal government is critical, particularly for legal and commercial frameworks. The Uniform Law Conference of Canada (ULCC) is playing a leadership role in this regard. All government and business operations are subject to law. Law has traditionally presumed the presence of paper records – that presumption is no longer valid. As a result, the application of law to
paperless transactions may lead to uncertain results. Governments are acting to make adjustments to laws to bring certainty to the use of technology.

Over 300 federal statutes contain provisions requiring documents to be “in writing” or equivalent words. Rather than have each department amend legislation piecemeal, the Government of Canada’s fall 1998 electronic documents legislation allows departments to adopt a set of general provisions authorizing the use of electronic communications. Provinces and territories are being encouraged to undertake statutory reforms along similar lines, as set out in the Uniform Electronic Commerce Act approved in principle by the ULCC in August 1998. Many legal rules and the law of evidence assume the existence of paper, signed or original records. While most electronic records are, in practice, being admitted in litigation, the courts have struggled with the traditional rules of evidence with inconsistent results. The ULCC approved the Uniform Electronic Evidence Actin August 1998, which evaluates the integrity of an electronic record by considering evidence of the reliability of the record-keeping system that generated the record.

The federal Department of Justice has proposed amending the Canada Evidence Act, to make it consistent with the ULCC Uniform Electronic Evidence Act. Provinces and territories will also consider amending their legislation to reflect the ULCC Uniform Evidence Act. The challenge is to link the electronic signature to the person signing the electronic document. The Government of Canada is proposing that what makes an electronic signature trustworthy is the use of a reliable technology, such as digital signature technology, combined with a reliable certification authority (CA), such as those operating under the Government of Canada Public Key Infrastructure (GOC PKI) and those CAs that have cross-certification or are otherwise recognized by the GOC PKI. Internet Service Providers and other Internet intermediaries have expressed concern about the possible extent of their liability with respect to areas covered by a
number of federal and provincial laws - e.g. obscenity, copyright, consumer protection, fraud and defamation - which may result from actions of their clients.

The uncertainty surrounding liability may be an impediment to investment in electronic commerce and to its pace of development. The OECD has reviewed legal frameworks applicable to content in its member countries. The Government of Canada has released for comment a study on Internet content-related liability and is currently analyzing the issue. In the longer term, impacts on other aspects of legal frameworks such as corporate and competition laws will be of interest. The view of both Canadian and international taxation authorities has been that current tax systems and structures founded on basic principles of neutrality, fairness, certainty and simplicity will continue to be appropriate to address the changes brought about by electronic transactions.

Attention has been focussed on ensuring that tax administration can keep up with changes in the market. The Minister of National Revenue’s Advisory Committee on Electronic Commerce issued a report in April 1998 titled Electronic Commerce and Canada’s Tax Administration that examines how existing taxation systems apply to electronic commerce. The report examines, among other issues, jurisdictional questions (e.g. the concept of a permanent residency), impacts of disintermediation (the splintering of intermediary services) on tax collection, and tax compliance. The Government of Canada’s response to the report was released in the fall of 1998.

Given the global reach of electronic commerce, most of these issues can only be dealt with in an international context. Canada is participating with other OECD member countries in developing international implementation strategies that will include the implications of electronic commerce on tax treaties, transfer pricing guidelines, the application of consumption taxes and customs duties and tariffs. In May 1998, WTO members agreed to refrain from applying customs
duties on the electronic products and services delivered electronically and to review this decision at the third WTO Ministerial meeting in 1999.

A two-track approach, linking a comprehensive WTO work program on electronic commerce with a moratorium on customs duties, was based on a proposal submitted by Canada to the General Council in April 1998, and was later adopted by ministers of the QUAD (Canada, the U.S., the Commission of the Europèan Union and Japan). Financial firms are rapidly expanding their delivery channels, by using new communications technologies to broaden the geographic scope of their operations and obtain more convenient, cost-effective links with customers. Financial intermediaries, such as banks, credit unions, brokerages and insurance agencies, are supplementing personal branch banking with on-line services through the Internet, telephone networks and automated teller machines.

Intermediaries are applying new digital technologies to reduce their cash-handling costs and simplify payment processing. With the help of new technology, specialized financial service providers are entering the sector, increasing competition and leading to the unbundling of services in certain markets. For example, brokers offering both trading and securities market information are now competing with on-line brokers who simply trade and provide no other services. Changing delivery channels are intrinsically linked to opportunities to create new products and services. Technologies such as risk management tools, digital certification and cryptography create potential for new products such as automated sourcing of capital, on-line clearing and payment intermediaries, and information brokerage. Canada’s financial institutions are involved in the development of new technology that may improve the efficiency of transactions and consumer convenience while helping to ensure privacy and the security of financial information.
These changes are having an impact on the nature and structure of the Canadian financial services sector. The (MacKay) Task Force on the Future of the Canadian Financial Services Sector, which reported to the government in September 1998, made recommendations aimed at ensuring the sector’s ability to meet global competitive challenges and the interests of consumers, and to take advantage of technological advances.

The global nature of electronic commerce also raises issues related to cross-border transactions in financial services. These issues are being examined by both national governments and international bodies such as the Basle Committee on Banking Supervision and the World Trade Organization. Intellectual property (IP) laws establish the rules for the ownership and use of key types of digital content central to the development of electronic commerce, such as music, computer programs, video and multimedia works.

In addition to the need for clear rules on ownership and access to content, other key IP issues include liability of Internet intermediaries, trademarks and domain names, and database protection. New international agreements and other forms of cooperation are being considered to address these concerns, through the WIPO, the FTAA, APEC and the OECD. Canada is an active player in these discussions. Canada’s national IP legislation is being reviewed to determine whether it needs to be adapted and whether it will be in Canada’s interest to undertake any new international obligations.

WIPO member countries adopted two new treaties in December 1996, the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. These treaties give right-holders including authors, performers and record producers an exclusive right to make their works, performances and sound recordings available through interactive media on a demand basis.
Canadian banks are partnering in the development of new electronic payment systems based on smart cards that allow consumers to purchase goods and services using prepaid electronic "value" in lieu of cash. The value is typically stored on an integrated circuit in a plastic card and can be read using special devices including point of sale terminals. Special encryption software helps ensure the security of the electronic value. Some electronic money systems allow for the transfer of value over communications networks as well as direct, person-to-person transfers. They also contain provisions with respect to copy protection and rights management information, among other new rights.

Canada signed the WIPO treaties in December 1997, but has not yet ratified them. In July 1998, the government released two discussion papers that consider what, if any, amendments to the Canadian Copyright Act would be necessary in order to comply with the treaties. Canada’s copyright legislation, as amended in 1997, already provides a framework for copyright protection that is largely up-to-date compared with legislation in many countries.

The Canadian government is currently analyzing the issue of the liability of Internet intermediaries, such as Internet Service Providers, for intellectual property infringements, as part of its ongoing consultations on Internet content-related liability. WIPO is also considering certain aspects of liability, including applicable law and jurisdiction.

Ongoing reform of the Canadian and international domain name systems (DNS) has highlighted the need to ensure that these systems and other Internet practices reflect IP rights and obligations appropriately, notably trade-marks. One major structural problem is that the Internet is international, whereas trade-marks law is national in scope. WIPO, with private sector input, has convened an international process to solicit recommendations on IP issues associated with the DNS. Progress on the reform of the Canadian DNS has also led to the recognition
that a balanced approach is needed. In the context of increased availability of data through electronic means, databases are more and more important in a knowledge-based economy.

Industry Canada and Canadian Heritage are engaging in a consultative process with major stakeholders to assess how Canadian laws apply to protection of databases, and whether a special form of IP protection should be developed for databases.

Electronic financial services

The banking and finance sector was one of the first industry sectors to benefit from the use of information technology more generally. Early computers were used for scientific and military purposes, not for commerce. The banking and finance sector has been a rapid adopter of e-commerce. The sector displays many characteristics that will facilitate the adoption and extension of e-commerce activities, such as the importance of product over location, many of its key services are easily virtualised, and great importance is placed on quick response times. For some time now most of the transactions between banks in the payments system have been undertaken electronically. Banking systems have also progressively automated deposit taking and payments. Key developments have included the now widespread acceptance and utilisation of ATMs and EFTPOS.

Use of Internet banking is also growing rapidly. Of the 1.7 million Australians using the Internet regularly, nearly 150,000 are involved in Internet banking. This is a threefold increase from a year ago. Internet consultancy www.consult projects that there will be about 270,000 Internet banking users by the beginning of 2000. Most users are expected to extend their existing banking
relationships. While the four big domestic banks have Internet-banking offerings, the Commonwealth Bank is the largest.

Forty five per cent of regular Internet banking users bank online with the Commonwealth Bank and nearly 30 per cent with Westpac. National Australia Bank is Australia’s biggest banker to small business. Users of NAB Internet Banking, are reported to have increased from 8 000 to 26 000 in two months and are signing up at twice the rate of personal customers. The key attributes that the commercial banks offer in their Internet banking facilities typically include:

1. review transaction details;

2. transfer funds between accounts;

3. pay bills;

4. transaction records and account statements;

5. buying or selling of funds that can be used in other e-commerce sites;

6. communicate securely with the bank;

7. standard fees, or sometimes, lower banking fees per transaction; and

8. customer convenience in terms of 24 hours a day, seven days a week service, without queues and from the comfort of one’s home or office.

E-banks

E-banks are able to design their business without wasteful and lower value ‘bricks and mortar’ assets and liabilities. They may have a ‘second mover advantage’ because they do not have to face the cost of restructuring. There is evidence that they are able to offer financial services at prices well below
traditional firms. This has not had an impact in the Australian banking industry at present. This may be because the traditional banks still offered a wider range of services that customers considered safe or perhaps reflect the fact that Australia’s major banks have been quick to develop their own relatively sophisticated online banking functionality. The Commonwealth Bank was online in December 1995 and had Internet Banking in February 1997. Nevertheless, traditional banking approaches are increasingly under competitive pressure. Relationship marketing is becoming more difficult as more organisations enter the market.

Banking and finance institutions now face competition from online trading organisations that gain a complete picture of a consumer’s financial relationships by building around the equity holdings and into banking, insurance, superannuation, etc. This can lead to an unbundling and rebundling of services. Bill-paying over the Internet is likely to become usiness-as-usual within just a few years. The Gartner Group predicts that in two years virtually all banks will offer online bill payment, and industry analysts believe that Internet portals such as America Online (AOL) and Yahoo! will soon be offering online payment under their own brands. AOL’s Rob Shenk says, ‘A lot of people have stock portfolios, but everyone has a checking account. So it’s a much more elemental service.’ A reluctance on the part of customers to switch to new providers may make sense: good financial relationships should not be thrown away for the sake of small short-term savings.

Growth of Internet banking and new competitors does not imply the end of traditional banks or financial services brokers. Reflecting existing strengths and consumer awareness, it may be a matter of changes in roles and involvement at different levels. One example of the transfer of value from the industry is the bundling of financial services as part of another transaction, e.g. buying a car, or factory equipment. The finance can be provided or facilitated by a party other
than one from the industry, distancing banking and finance from their customers, or replacing them.

However, if banking and finance take a higher view of their role, using a business event model this opens opportunities for creating value and improving relationships using e-commerce in ways which it would be too expensive to do face-to-face.

There are issues here of who has the ‘right’ or credibility to provide the service, i.e. who bundles whom. The transfer of value occurs if the service that brokers offer is unbundled. Brokers currently offer advice, risk management and execution. Risk management could be unbundled to the insurance sector, or new participants could enter using e-commerce services.

Banks from smaller countries in Scandinavia and Europe have been very aggressive in penetrating larger European markets with an Internet banking presence. Is there a scope for entry of banks from abroad into Australia using a similar strategy? There is no evidence to indicate that there has been a significant transfer of value to overseas firms through widespread offshore banking or other financial transactions. In contrast, there is anecdotal evidence to indicate that despite falling transaction costs and improved information, many investors find overseas investment or deposit in overseas banks to be too risky. Industry sources indicate however that there is some scope for migration of this service, albeit over time.

The inflow of value from overseas is not significant and would be predominantly from the acquisition of international banking operations by the Australian banks and any associated movement of functions to Australia. For example the Bank of New Zealand owned by NAB operates its Internet site and undertakes all its processing in Australia including monitoring and supporting
its ATM network. E-commerce is a major enabler of this, specifically EDI, the Internet and other dedicated networking systems. The opportunities opened up by e-commerce is a factor driving change in the banking and financial services sector.

Use of e-commerce is shifting demand and supply in the sector to lower cost more convenient service delivery channels. In meeting the broad range of financial service needs that customers have within a single entity, the distinction between banks and other traditional financial service roles is becoming blurred.

The potential of online financial services has reduced many barriers to entry and is increasing competitive pressures. It is likely that cost savings that will result from this process will be passed on to consumers.

When looking at quantitative analysis of the sector it seems reasonable to factor in a wide range of direct changes:

1. direct labour savings extending the staff reductions the sector is already achieving;

2. banking is also expected to be able to disintermediate other input costs, particularly those that relate to the operation of branch networks. To reflect this it can be assumed that a small reduction in inputs of construction and paper products is achieved;

3. reflecting the increased convenience of online banking and financial services, time savings should be included as an efficiency gain for other industries that use the services of the sector as well as households;

4. the sector has already boosted expenditure to purchase e-commerce inputs and these are already factored in to the base case forecasts.
for the moment it is assumed that this sector will not face greater international competition or experience a significant boost in exports from e-commerce.

The IT industries have a number of unusual characteristics. They are among the fastest growing industries. Technological change is rapid and product life cycles are short. Most product and service prices are falling rather than rising. Convergence in the industries is leading to the increasing inter-relation and interdependence of computing, communications and the media. This is also profoundly changing the structure and dynamics of the IT industries.

Change in the IT industries and their capacity is driving change in the use of e-commerce while the IT industries are also being driven by changes in e-commerce usage. The IT industries extend through a value chain including electronics to computing and telecomm-unications platforms, office equipment and consumer electronics, telecommunications carriage and services, IT services and to information and entertainment services. Computing power has been doubling every 18 months for the past 30 years. At the same time, the average price of a transistor has fallen by six orders of magnitude, due to microprocessor development.

In just six years, the cost of microprocessor computing power decreased from $230 to $3.42 per MIPS. No other manufactured item has decreased in cost so far, so fast. Whether traded or non-traded, the IT industries are growing strongly at a rate in excess of ten per cent per annum.

It is estimated that approximately 500 000 Australians are employed by, or spend a substantial part of their time engaged in the commercial activities of the information industries. Official statistics indicate that use of IT in Australia by the private sector is high: companies employing 100 or more people are almost
fully computerised; 50 per cent of smaller companies are computerised and this rate is growing. Use of e-commerce by the IT industries.

The IT industries have been rapid adopters of e-commerce technologies and business models. The biggest advances in this sector have been in business-to-business e-commerce. More use is being made of e-commerce to facilitate the purchase of goods and services by consumers, but it is still very much behind the magnitude of sales made between businesses. The greater use of e-commerce in the sector has the potential to add value or reduce costs in the following areas:

1. value chain disintermediation;

2. enhancing value in sales and after sales support activities; and

3. improved operations.

The IT industry is now able to deliver many of its products using e-commerce. Items such as software and documentation that traditionally had to be shipped can now be delivered online. Hardware is also becoming upgradeable without the need to physically replace parts. Software can be delivered online to allow customers to upgrade hardware such as modem cards.

In general, there are many areas where businesses in the IT industries or their customers are using e-commerce to reduce supply chain costs, or enhance their convenience. Warehousing, inventory and the volume of product in the cycle are much less than would otherwise be. This has also reduced the real estate required to store the inventory.

The number of suppliers has been reduced, Cisco now tends to deal with the original manufacturer and manufacturers of components. The additional suppliers added time to the process and also forced Cisco to be a manufacturer.
In some cases, Cisco has eliminated its own involvement. The other major elimination that has occurred is in the number of trips provided by the transport sector, now that many deliveries take place directly from the supplier to the customer. Cisco builds virtually all its products to order, so there are very few off-the-shelf products. Before the company established an Internet sales capability, ordering a product could be complicated. Generally, an engineer at the customer site knew what type of product was needed and how it should be configured. The engineer communicated this information to his procurement department who then created the purchase order and sent it to Cisco via fax, phone or email.

A Cisco customer service administrator entered the order into Cisco’s system. If the order went through ‘clean’, it would be booked and production scheduled within 24 hours. Nearly one out of four orders didn’t get a ‘clean’ bill of health, however. Instead, when Cisco’s system tried to validate the order, it discovered an error in how the product was configured. The ‘dirty’ order would be rejected, the customer contacted and the procurement cycle would begin again. In July 1996, Cisco rolled out its web-based ordering and configuring system. Today, that same engineer can sit down at a PC, configure the product online, know immediately if there are any errors and route the order to the procurement department. Because the customer’s pricing structure is already programmed into the Cisco site, the authorised purchaser can complete the order with a few keystrokes.

Rather than calling Cisco to find out the status of the order, invoice or account information, a customer with the proper authorisation can access the information directly on the website. With the online pricing and configuration tools, about 98 per cent of the orders go through the system the first time, saving time both at Cisco and the customer’s site. Lead times have dropped two to three
days, and customers’ productivity has increased an average of 20 per cent per order.

E-commerce is now fundamental to Cisco. Eighty per cent of orders in Australia are generated by e-commerce, up from 40 per cent three years ago. The objective is to grow the orders received electronically to 90 per cent next year. Cisco’s business is $400 million in Australia and $12 billion worldwide. As well as the benefits to Cisco, this use of e-commerce impacts on a lot of businesses that buy from Cisco.

The use of online ordering has reduced the headcount in the order entry department by one in the last two years, although the volume of orders received has tripled. The quality of order entry has also improved, due to online checking at the time of entry, from a 30 per cent error rate to less than two per cent. Customers can also check delivery schedules online. The whole process is more profitable, and better for customers. Orders are faster, cleaner, are checked against the manufacturing cycle, while more orders can be processed using fewer people. Customer satisfaction has increased from 3.5 to four, with five being a perfect score. The users of the system, Cisco’s customers, are medium to large businesses. Cisco does not sell direct to consumers.

Cisco is also working on supply chain management, aiming and succeeding in being a ‘virtual organisation’. Suppliers provide components, such as chips and boards. Cisco demands that suppliers be online. This has eliminated complex processes, and made a tighter link to manufacturers with no middlemen. Effectively, 50 per cent of the physical boxes are delivered to the customer direct from Cisco’s supplier.

Cisco has an Intranet used by employees and suppliers alike. Suppliers access the same forecasting information as Cisco. Eighty to 85 per cent of
software is now downloaded by customers, whereas it was previously distributed by CD-ROM. It used to cost $125 to send a CD, downloads cost $5. This has also eliminated the deliveries of CDs. All product information, including technical information is available online. Eighty per cent of technical information is now sourced online by customers. Customers can also enrol for seminars online. This has achieved the objective of increasing customer satisfaction, while saving on the cost of distributing physical documentation. Internally, expense accounts are submitted online and profiled automatically. Payments are made by direct credit to the employee’s bank account. This system is used by all 18,000 employees worldwide. Cisco hopes to have invoicing online soon. The main benefits to Cisco of e-commerce have been the reduced head count, reduced inventory, reduced paperwork, and reduced direct costs such as with the downloading of software. IT industries will also have to purchase more electronic inputs from new intermediaries in order to engage in greater e-commerce. The indications are that these costs will be relatively modest, certainly in proportion to the potential efficiency gains that IT industries are likely to obtain.

The use of e-commerce is also increasing the complexity of the information technology requirements. Many organisations are outsourcing the management of their information technology systems. There is a transfer of value into the IT sector brought in by the outsourcing of IT and services from other industries, such as government, finance and travel. Greater use of e-commerce is likely to drive changes in the way that business is done in the IT industries. It appears that there will be swings transferring value between activities in the IT industries. The first is the potential transfer from hardware to software—this is predominantly caused by the rapid reductions in costs of hardware while software has maintained its value.
E-commerce has not been a major driver of this. There is a transfer from commodity manufacture to mass customisation. This has also resulted in a transfer in value from whole items to components. This is being driven by the varied nature of e-commerce and the many applications for the use of information technology in this area, resulting in the need to customise hardware. For value creation there are very strong possibilities in many sectors, particularly in government. There are cost saving and productivity improvements possible from the use of e-commerce.

The opportunity to create value is also high in IT services. IBM believe that software and especially services will be the drivers for growth, while the value creation in hardware is lessening. This means a transfer of value within the IT sector from hardware to software and services. This transfer of value is leading to a move from commodity manufacture to mass customisation, particularly for large customers, and the management of the assembly. The trend to network computing is leading to the value being held in the network not on the hard drive of the computer.

One of the issues for all industries today, is how a business becomes an e-business. That is, not only setting firms up online, but helping them to deal with customers online, and integration into their existing systems and processes. IBM has used its own experience to assist its customers. The process of convergence is also reshaping what it is that businesses in the IT industries will offer in the future. Some companies that have been established in the industry for some time have responded dramatically to challenges and opportunities raised by e-commerce. IBM is in the IT sector, but also heavily involved in the e-commerce sector.

The IT sector is a key facilitator for e-commerce, and will be one of the big winners. Some in Australia focus on creating the hardware sides of IT and e-commerce in Australian (chip and other hardware manufacture) but IBM does
not see enough critical mass in Australia to support these hardware efforts. Rather, IBM believes that Australia's opportunities are in services and content development which have a much higher value add. The value proposition in the e-commerce world is different than for many other industries. In manufacturing, automotive for example, a basic model car is developed as the lowest common denominator, then features are added to add value.

In e-commerce, the 'lowest common denominator' is the high end or perfect product, from which features are removed to subtract value. The model is more akin to book publishing, where the hardcover is published, and some time later a cheaper paperback is released. Time is also a driver of value, for example the latest stock prices on websites are available at a higher cost than those whose publication is delayed.

The growth of e-commerce internationally has led to a huge demand for high quality IT personnel. Many international countries are willing to pay quality IT personnel more than Australian companies. This is particularly the case with start-up IT companies. The transfer of value to or from overseas can occur with the rise of the Internet and network computing, with the offering of remote services, for example, remote education, application development, etc. The direction of the service flow will determine the direction of the value transfer, i.e. whether Australia positions to provide remote education services, or is the recipient of them. Australia has some advantages over other countries that are resulting in an inflow of value from overseas.

1. Well educated and technically competent workforce;

2. Well positioned for Asian markets;

3. Large number of staff with multilingual skills; and
4. Globally located to support international call centres working on around the clock.

While telecommunications companies are big players in the e-commerce marketplace, postal and courier services are generally viewed as risking having their value being eroded as more information is shifted electronically rather than in physical form. E-commerce is having a remarkable impact on the communications industry. Telecommunications carriers have an obvious role to play in providing the communication lines and bandwidth to make network access and ultimately e-commerce possible.

Of major importance for telecommunications carriers is the impact of increasing data traffic and the use of the Internet for voice traffic. The impact of e-commerce on communications is not restricted to the telecommunications companies. Postal services are also being impacted by e-commerce. One might expect that as the sole supplier of traditional regular mail services in Australia, Australia Post would suffer a decline in the demand for its services as a result of increasing use of e-commerce. However quite the opposite has occurred — the number of items carried by Australia Post grew by 3.4 per cent last year from 4.3 billion to 4.5 billion. Even so, Australia Post is undertaking a number of strategies to find a fulfilling role in an environment of greater use of e-commerce. Australia Post is expected to launch its Internet Fulfilment System (IFS) shortly, which will move beyond simple delivery to include electronic integration of its warehousing, distribution and track and tracing capabilities for online retailers. Australia Post already delivers an average of 22 000 items from Amazon.com every monthhand is the largest delivery network to 8.5 million households and businesses in Australia. IFS will enable it to compete effectively for the increased delivery of Internet-ordered products as traffic grows into the future. In addition, Australia Post will launch a web-based bill presentation and payment system, which it expects to grow to 20 million transactions by 2003 (Note: Through its
network of post offices, Australia Post currently handles around 170 million bill payments annually).

Unlike online banking bill payments systems, Australia Post will offer bill presentment and will give customers the option to pay bills using accounts from more than one financial institution. Australia Post will not charge customers for using the services, instead it will charge billing principals for using the system. Consumers can pre-register with bank details and relevant information and an account or credit card can be debited with a single mouse click.

Use of the Internet for billings, particularly for business-to-business transactions, is less expensive and more timely than traditional paper billings that use postal and courier services. The trend in electronic billings is expected to continue due to reduced transaction costs and improved service, and a greater insistence on the part of large businesses that suppliers be linked into their e-commerce systems. Use of the Internet also offers cost savings from the standardisation of technologies that have historically been incompatible, for example, for fax transmission, broadcasting and telephone circuits, though opportunities for some functions are presently constrained by bandwidth limitations. A cost saving for business generally that may affect telecommunications businesses is increased use of the Internet for selling at the expense of telephone selling and call centres. Automated selling is likely to require less labour for the selling process and for delivering after sales services, which is likely to consist of manuals and databases accessible to consumers over the Internet, with perhaps a small team of people on hand to solve difficult problems. Communications companies themselves, particularly postal and courier services, are also reducing costs as users of e-commerce services.

E-commerce in the procurement of machinery and equipment was projected to compress wholesalers' margins by 25-30 per cent over the period under
consideration. Also e-commerce would increase competition and more sophisticated competition would put downward pressure on the producer’s prices. E-commerce was thought to be pretty fully implemented in supply areas like fuel, so little further impact was projected.

People noted that there were conflicting trends on fuel utilisation arising from e-commerce—greater customisation meant more frequent deliveries of smaller loads, so possibly increased costs, but computer assisted routing meant that the effect was small. Telecommunications companies in the sector are incurring costs in creating new products. They are moving into e-commerce and application development and finding new value. They are moving more into Internet Protocols and data transmission. This is opening up a whole lot of new opportunities for them, especially in developing applications to suit different customer requirements, in this new environment that can mean developing software. Communications sector companies are becoming involved in new areas of business, enabled by e-commerce and new technologies. Underpinning these lines of business are new technologies.

A new technology which should have a big impact on the sector, and on business in general, is mobile e-commerce based on Wireless Access Protocol (WAP). Internet phones and Internet payment devices will also impact. One of the drivers of e-commerce is the availability of Internet devices. People are using Personal Digital Assistants more, and tapping into the existing mobile base depends on the right applications. The impact of e-commerce is different for the two main industries which comprise this sector. The telecommunications companies are big players in the e-commerce marketplace, providing many of the products and services on which e-commerce is based, as well as moving up the value chain to provide e-commerce services directly.

E-markets
Since the arrival of open access systems using the Internet, ordinary investors have also been quick to buy and sell shares electronically. Many new purely online brokers have emerged offering very low fees and several full service brokers have responded by offering online trading facilities of their own. Over 15 per cent of households in the US are reported to have conducted equity trades online. This compares with less than five per cent that bank online.

Financial markets have also been quick to adopt e-commerce and electronic trading. The Australian Stock Exchange (ASX) introduced the Stock Exchange Automated Trades System (SEATS) in 1987. Trading floors were abolished in 1990 and all trading was conducted electronically on SEATS. In 1994 the ASX introduced electronic and clearing settlement (CHESS). Reflecting continued use of e-commerce techniques, by 1999 settlement time was reduced to the trade date plus three business days. Most of what the ASX does is e-commerce, for example electronic trading of shares and executions has been occurring for 12 years.

Given this history, the ASX believe that further creation of value from e-commerce will be due to increases in speed. For example, gross settlements now take three days, but they are gearing up to handle real time settlements. In that respect it will be a new product for the ASX, and will also change the risk characteristics of trades. There is also value added by the speed of the transaction as the value of the trade can change while it is taking place. The ASX is also working with the NASDAQ to allow the joint buying and selling of shares on their indexes.

Currently, if an Australian wants to trade with NASDAQ they have to find a broker with a US affiliate or contact a broker in the US. The funds for the trade have to be raised separately. When the new service is in place, the sale of shares on one index can be used to fund the purchase of shares on the other. This service will also allow the ASX to use its IT infrastructure more intensely. Re-
intermediation could also occur, with brand name labelling of shares and finance. Quicken in the US is trying to provide bundling via a portal to banks, brokers, insurance and more. The seamlessness of any new service will be important. Another factor is that new players do not have commitments to existing players that existing players have amongst themselves. The business elements of e-commerce will evolve slowly—the ASX has need of digital certification and increased reliability. Banks are keen to make greater use of Internet banking for many reasons, but a key factor is the substantial cost advantage this activity enjoys.

The Commonwealth Bank states in its 1998 Annual Report that 72 per cent of all banking transactions are conducted through electronic channels, such as telephone, the Internet, ATMs, and EFTPOS terminals. Similarly, Westpac states that around 80 per cent of their transactions are done electronically. The National Australia Bank have recently reduced the percentage of transactions through branches from 19 per cent to 14 per cent. Every customer that is to switch from a branch transaction to a lower cost channel results in a substantial saving. Competition will force the banks to pass these savings on to customers as lower fees and prices. Using the Internet for bill payment can provide savings to all parties involved including the merchant, customer and the bank. Electronic billing is likely to be a significant growth area in the economy in 2000. A flow on impact of greater use of the electronic channels and consolidation in general has been the reduction in staff required.

In order to obtain the cost savings offered by the Internet, the banking and finance sector is buying significant volumes of IT inputs. It seems likely that the major banks have raised their IT spending to accommodate a major upgrade of e-commerce requirements. It is not clear if they intend to raise spending above these levels or merely to sustain them, or indeed, if the new capital expenditure round is now complete. In order to compete in the Internet market, banks and
other financial sector firms must ensure that consumers are aware of their presence in this new context.

The financial sector is the biggest spender on Internet advertising in Australia, nearly a quarter of the total spent coming from the sector. Five of the top-ten online advertisers in 1998 were from the financial services industry. The traditional concept of a branch offering all services is also changing. Banks are setting up specialist transaction centres and centres that target specific audiences.

The National Australia Bank (NAB) has 219 specialist business centres in addition to its 903 traditional branches and in Australia. The ANZ has a Business Direct Centre that offers lower priced products for smaller business with simple lending and financial service needs. There is a trend toward the use of mobile lenders and investment advisers.

Westpac have 1 000 mobile staff and during a 12 month period the Commonwealth Bank’s mobile bankers conducted almost 50 000 home loan interviews, and over 24 per cent of all Commonwealth home loan approvals were generated by mobile bankers. The Commonwealth Bank has traditionally used Post Offices to provide additional branch type services for their customers. The Commonwealth plans to extend this with Woolworths Ezy Banking Westpac is working with rural communities and introducing in-store branches in pharmacies, general stores and newsagencies. Banks have traditionally provided an intermediary service of matching deposits with funding for loans.

E-commerce provides an opportunity for banks to be disintermediated from this activity. The direct provision of loans by non-banking entities such as superannuation organisations and insurance companies could be an indication of this disintermediation. Calculated from information provided in the annual reports of the National Australia Bank, Commonwealth Bank of Australia,
Westpac and the Australian and New Zealand Banking Group Limited. The data does not separate out increases in branches obtained through acquisitions of overseas activities, so probably understates the fall in branches used in Australia. Traditionally banks have played an important role in the payment approval process.

The trend towards the use of credit cards (versus cheques) has had (and still does have) the potential to reduce the role of banks in the payment loop. Banks have retained some control in this area to date as the card issuing body. The move towards SET in the online payment areas will re-intermediate banks back into the online payment approval process. The likely acceptance of some form of digital cash in the future could potentially disintermediate banks again from the payment approval process.

Elimination of value is also possible in the sector. Banks now act as intermediaries in matching depositors with funds to loan applications. The function could move to brokered markets, and even to a direct market. With payments, the provision of EFTPOS enabling payments was a valuable service to bank customers.

Now with services such as Telstra's SureLink, the payment service is provided as part of a larger service. This commoditises the pure payment service. Greater use of e-commerce is also opening new opportunities in this sector. Regulatory reform, competition and the potential of the new technologies are breaking down distinctions between the roles that companies in the banking and finance sector play. E-commerce over the Internet has enabled banks to move into stock trading.

The Commonwealth Bank's ComSec is a predominantly online share trading service, although it does provide a supporting telephone service. The ANZ has
recently announced an alliance with E*TRADE Australia for ANZ customers to trade securities online. There is a trend for banks to offer complete financial services to individuals and organisations. This typically includes investment advice, insurance, superannuation, share trading, and funds management. E-commerce is creating new value in the banking and finance sector.

E-commerce assists organisations in becoming virtual CFOs for small businesses by handling all financial services and providing accounts receivable and payable services. The aim is to provide a full service from operational through to strategic. For consumers, the concept is to package services around 'life events' and to provide focused advice and services.