

Tax and --- the Internet



Discussion Report of the ATO Electronic Commerce Project

Tax and the Internet

Discussion report of the Australian Taxation Office Electronic Commerce Project Team on the challenges of electronic commerce for tax administration.

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Table of Contents

5	Introduction
6	Scoping Issues
8	Key Aspects of Electronic Commerce
8	Introduction
8	Key Infrastructure Elements
9	Operation of the Internet
10	Websites
11	How it Works - a typical transaction
13	Business Model
15	The Players
17	Electronic Payment Systems
17	Introduction
17	SVCs and Network Money
18	Maturity of Credit Cards
18	Maturity of Network Money and SVCs
18	Size of Electronic Payment Systems
19	Delivery of Money
19	Cultural Factors
20	Regulation
21	Current State of Internet Electronic Commerce and Tax Base Implications
21	Australian Demographics
22	Market Value
23	Market Penetration
25	Infrastructure and Bandwidth
26	Internet Service Providers
27	Potential Impacts on the tax base
34	Internet Growth Issues
34	Overview
34	Taxation
35	Legal Issues
36	Security
37	Interface
38	Bandwidth
39	Free Rides, Standards and Commoditisation
39	US Framework Document

42	Taxation Implications
43	Jurisdiction
48	Identification
49	Information
50	Collection Mechanisms
51	Particular Current Issues
57	Need for International Co-operation
59	Summary of the Impact on Current Taxes
59	Income Tax and Tax Generally
61	Sales Tax
62	Compliance Issues
62	Identity
63	Digital Signatures and Public Key Authentication Framework
65	Audit Trails
67	Data Integrity
69	Data Access
70	Leverage
72	Brief survey of legislation relating to Electronic Commerce
75	Compliance software and “agents”
76	Findings: Income Tax and Tax Generally
90	Findings: Sales Tax
92	Recommendation Principles
93	Recommendations
127	Attachment 1 – Terms of Reference
128	Attachment 2 – Acknowledgements
130	Attachment 3 – Cross Reference Tables
134	Footnotes

Introduction

- 1.1.1 The Electronic commerce environment presents a number of opportunities and challenges for the Australian Taxation Office (ATO):
- the economics of the Internet makes international trading operations viable for much larger numbers of businesses. In addition, new kinds of profitable business are emerging. These factors will be beneficial to the economy, but present issues for the ATO to manage;
 - the need to clarify the law relating to taxation for businesses operating on the Internet, as lack of clarity in the law in this area could give rise to serious problems for taxpayers. Tax law relating to commercial transactions on websites is a particular concern; and
 - the need to examine tax compliance strategies in a very different environment to the “real” world.
- 1.1.2 The Australian Taxation Office's (ATO's) Electronic Commerce project was established to examine the electronic commerce environment and to make recommendations about how Australia's existing taxes could be properly administered in this new environment.
- 1.1.3 The formation of the project team, in May 1996, consolidated several independent ATO activities under a coordinated framework. The terms of reference for the project appear at Attachment 1.
- 1.1.4 The project was conducted by a multi-disciplined team of ATO personnel and external consultants with expertise in large and small businesses, international tax, industry research, the banking and finance sector, fringe benefits tax, withholding tax, general tax law and information technology.
- 1.1.5 In developing the report, the project team worked to a steering committee chaired by the Commissioner of Taxation and including senior ATO and senior representatives from the Australian Treasury, the Australian Customs Service and the Department of Industry, Science and Tourism.
- 1.1.6 A complete list of authors, steering committee members and other contributors can be found at Attachment 2.
- 1.1.7 This report is designed to stimulate debate and to further international and domestic discussion of the issues, particularly at the Joint Committee of Public Accounts Inquiry into Electronic Commerce. Following discussion the ATO expects to produce its final recommendations for consideration by the Government, or action by the ATO, as appropriate.

Scoping Issues

Exclusions and limitations

2.1.1 As the terms of reference for the project were extremely wide a series of scoping decisions were made to provide a manageable focus for the project.

2.1.2 First, an analysis of the parties to electronic commerce reveals that there are transactions between businesses (business-business), between businesses and consumers (business-consumer) and between the government and either businesses or consumers, (government-business and government-consumer) respectively.

Government transactions not included

2.1.3 Only business-consumer and business-business transactions have been included in the scope of this study. While this is not to say that transactions involving governments are without risks for tax purposes, time and resourcing limitations prevented these transactions being studied.

ATO concerned with tax consequences, not with EDI type process issues

2.1.4 In the business-consumer and business-business categories the ATO's concern is with the tax consequences of transactions undertaken, including of course the assessment of risk arising from particular categories of transactions. The ATO is less concerned with the technical details of electronic data interchange and related issues, the process by which ordinary business forms such as orders and invoices can be automated and transmitted and sent over the Internet¹.

EDI and similar networks not considered in detail

2.1.5 This report does not incorporate any examination of Electronic Data Interchange (EDI) based networks as these networks are not considered to present the same challenges as networks like the Internet. Two factors were crucial in this decision:

- the relatively small participation rates in EDI; and
- the presumption that regulatory interests would be considered in the formal creation of EDI message and transaction standards.

2.1.6 To the degree that EDI is used as a 'back-end' system to support internet electronic commerce it is given some consideration.

Internet History and Operations

- 2.1.7 This report limits its discussion of the history and operation of the Internet to those aspects which are significant for the reader's understanding of the issues discussed.

Opportunities not a primary focus

- 2.1.8 The terms of reference for the project did not require the project team to explore the opportunities for tax administration presented by electronic commerce². While the project did consider some opportunities for improved tax compliance, other projects within the ATO, under the *Electronic Service Delivery* initiatives are more rigorously examining the opportunities associated with electronic commerce.

Physically separate networks excluded

- 2.1.9 Physically separate networks which are used for specialised purposes are not included in the scope of the study. This includes, for example, the SWIFT network which is used for banking purposes.

Intranets not fully considered

- 2.1.10 Intranets are internal networks maintained by corporations and government agencies³. While there is no doubt that the increasing use of international intranets by large corporations raises tax issues, time and resourcing limitations prevented any systematic coverage of this issue although they have been given some consideration in relation to international taxation.

Impacts on State Revenues

- 2.1.11 It is beyond the scope of this project to examine the impacts on State's Revenues. However it is recognised that some business, conducted on the Internet, may have an impact on the States. For example, Australian Bureau of Statistics (ABS) figures show the States received \$3.3bn from gambling revenues in 1995/96 - revenue which is placed at risk by competition from Internet based gambling sites. Should the States find their bases of Revenue under challenge, this may cause an indirect burden on Commonwealth Revenue.

Key Aspects of Electronic Commerce

Introduction

- 3.1.1 The Internet is not just used for the communication of information in its conventional sense; it is also a transport system which supports financial transactions. Products and money can be sent between any devices connected to the Internet. Rather like pieces of paper and plastic (cash) which *represent* value, digital information can *represent* a variety of goods and services including money, software, music, copyright images, personal signatures, and detailed specifications to build physical products.
- 3.1.2 Electronic commerce is the buying and selling⁴ of goods and services on the Internet. Goods can be of a conventional kind, such as books or CDs, where delivery is effected by conventional methods from a contract executed on the Internet, or *digital* goods as mentioned in the previous paragraph, where both the contract of sale and the delivery of goods is made via the Internet. A very wide range of services is also now available on the Internet, examples of which are given later, in section 5. Goods and services are generally acquired from *websites*⁵, which are discussed below.
- 3.1.3 On the Internet, a buyer and seller may not know each other, and may often be in different countries with different currencies. Both want their respective interests protected in a commercial transaction. Transactional efficiency is critical: ie, payments must be able to be made quickly, and the process for doing it reasonably simple.
- 3.1.4 International payment systems able to support commercial transactions with the constraints mentioned have evolved. These payment systems are discussed in more detail later, in section 4. At present, it is sufficient to note that the dominant mode of payment on the Internet is the credit card⁶, though the mix may change with the maturity of technologies such as electronic cash. “Point and click” systems, able to effect payment across the Internet in only seconds, are widely considered to be a critical step towards the commercial maturity of the Internet.

Key Infrastructure Elements

- 3.2.1 This section covers two key infrastructure elements of the Internet, namely:
- the operation of the Internet; and
 - websites, a basic business unit on the Internet.
- 3.2.2 The material covered in the first point is significant not least because it has an important bearing on certain compliance leverage strategies discussed later. Other key aspects of electronic commerce are discussed in section 6, covering Internet growth issues.

Operation of the Internet

IP numbers

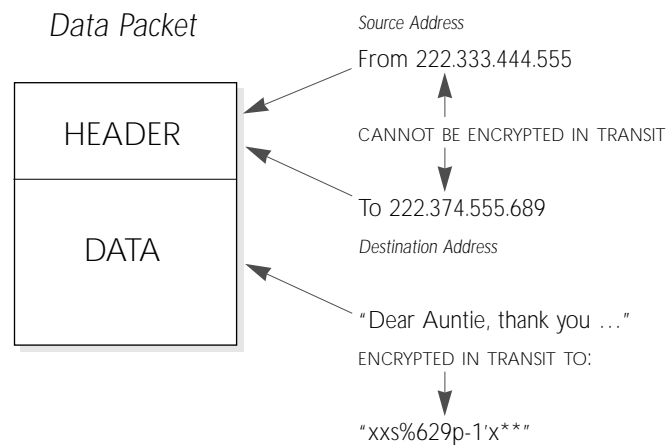
3.3.1

The Internet relies for its operation on a numbering scheme called “IP numbers”. IP numbers are somewhat like telephone numbers. They identify devices’ attached to the Internet. Any device connected to the Internet can establish a connection to any other device connected to the Internet by “dialling” its IP number.

Data Packets

3.3.2

Communications sent over the Internet (eg. software) are divided into “packets” for their journey over networks from point A to point B. The following diagram shows a typical data packet sent over an IP network.



3.3.3

The following points concerning IP numbers and packets are worthy of note:

- IP packets have a fixed size. If a message (which may, as indicated above, *represent* a great many things) is bigger than the size of a packet the message will be split into a number of packets for its journey across the Internet from the source (eg, Sydney) to its destination (eg, Los Angeles);
- the *data* element of packets may be encrypted. Only the sender and recipient may have the key to decrypt the message; and
- if a global register of all IP addresses were kept (like a giant telephone directory) it would (subject to some qualifications) enable third party, by consulting the directory, to identify the sender and recipient of the packet.

The Internet and the “real” world: current state of play

- 3.3.4 Technology combining sensors with diagnostic and communication capabilities is already emerging in the marketplace⁸. An example of such a device is a meter able to read the consumption of gas and transmit the reading to a central office for billing purposes⁹. Another example would be the ability of a major business to integrate its supplier, stock, storage, retail and finance operations across the Internet by the simple expedient of assigning IP numbers to bar code readers attached to various devices on their network. The costs of equipping devices with similar capabilities are dropping rapidly.

Digital information can be sent from any place connected to the Internet to any other place so connected

- 3.3.5 A key point about Internet addressing from a tax perspective is that provides a way to transfer digital information (including electronic money and digital “goods”) from any device with an IP address to any other device with an IP address regardless of national boundaries.
- 3.3.6 Hence, very different enforcement considerations arise in respect of flows of digital “goods” to physical goods. Shrink-wrapped software in a cardboard box, for example, may go through Customs in the normal way. An identical piece of software sent via the Internet from a U.S. web site to an Australian consumer will not.

Websites

Physical Characteristics of Websites

- 3.4.1 Websites are computer programs residing on computers (known as *servers*) which are connected to the Internet. They possess IP numbers enabling them to be contacted by other computers (known as *clients*), normally using specialised protocols enabling sophisticated and, for financial transactions, secure two way communication between the client (say a prospective customer), and the server (say an Internet business).
- 3.4.2 Only a small part of the overall development cost of a website is represented by computer hardware. The most valuable constituent elements of a commercial website are software, data and goodwill. It is not difficult to remotely program a website, or to change the location of the computer where it is hosted. In addition, a website which from a business perspective is logically integrated may physically be dispersed across a range of computer servers, possibly in different countries. The issues this gives rise to in taxation law, and the potential tax compliance problems, are discussed later in this paper.

3.4.3

Business Function of Websites

A website - which may in business terms be thought of as an Internet sales or distribution centre - may fulfil a variety of important business functions, including:

- on-line registration of customers;
- 24 hours, 7 day a week operation without corresponding labour costs;
- reducing dependency on, (and high costs of), conventional production distribution methods, by enabling products for sale to be ordered and in some case shipped electronically, with contracts for sale automatically generated by customers' use of Hypertext Markup Language (HTML) forms;
- showcasing products for sale;
- reducing costs through automation of functions such as ordering and payment processing and through reduced rent, utilities bills and the like;
- through 'just in time' business operations, reducing the need for large stock inventories and other capital intensive requirements of conventional business;
- reducing support costs by providing automated help, product updates, etc. This is done both asynchronously, using protocols such as file transfer and e-mail, and synchronously, with various online "chat" protocols; and
- generally reducing "middlemen" costs by centralising a variety of important business functions in the web site. The sophistication of automated functions is certain to grow, with consequent adverse impacts on intermediaries in the production / distribution / service chain to the end consumer.

3.5.1

How it Works - a typical transaction

Before embarking on a discussion of the business model, an explanation of a typical Internet transaction will be useful. All references in square brackets, eg [User] are to entities in the business model diagram.

Sonia [User] is sitting at her computer having just logged on to the Internet. She logs in using a computer and modem to an [Internet Service Provider, ISP] which charges her \$30 per month for up to 20 hours usage. The ISP essentially acts as a retailer: it buys bandwidth [see section 6.6, Growth Issues, for a discussion of bandwidth] from a wholesaler of bandwidth [Network Provider], typically a telecommunications company such as Telstra or Optus, and resells it in the form of Internet connections, often with a range of value added services.

A Typical Transaction

Sonia has a list of CDs she wants to buy, and having checked the Australian and Internet prices, she understands she will save about \$20 from buying them on the Internet. To access the Internet site [web site] she uses software provided free by Netscape [software architects]¹⁰. She types in the address of the web site, which may be something like *http://www.cdrom.com*, and in a few moments the details of that site, generally a combination of text and pictures, are being loaded on her computer. The site contains details of thousands of commercially available CDs; on many, “soundbites” can be played as teasers to buy¹¹.

A decision to purchase the CDs [producers of CDs are content providers in the model] is effected using a couple of analogies from the supermarket world, the “shopping trolley” [revocable commitment to buy] and “check out” [irrevocable commitment]. The site is well designed, which means that each step up to the point of irrevocable commitment is well-explained and carefully incremental, so at no point does the buyer feel threatened by what may be an unfamiliar process. Asked for her credit card details Sonia uses her Oz Bank Visa credit card [Payment Providers: Oz bank, Payment System Provider: Visa], where the flow of funds will be similar to conventional credit card transactions.

The website also presents Sonia with options for delivery, typically ranging from conventional mail (cheap but slow) to express shipment by a specialised freight forwarder (more expensive but fast). Some freight forwarders also offer users the service of tracking the progress of their parcels in transit using the Internet.

Advertising

3.5.2 Advertising has also become a common feature on the Internet. The most common form of advertisements are called “banner ads”, so called because they are generally placed close to the top of the screen. They have advantages both for consumers and advertisers. Consumers, for example, do not have to suffer the annoying interruptions featured in TV advertising.

3.5.3 From an advertiser’s perspective, there are several benefits:

- the ability, should the consumer click on the ad, to take the consumer directly to the advertiser’s website where the consumer may be enticed immediately to make a purchase, which is far more direct than TV advertising;
- verifiable results based on audited click rates; and
- more effective and economic targeting of profitable niche markets.

Business Model

Reasons for business model

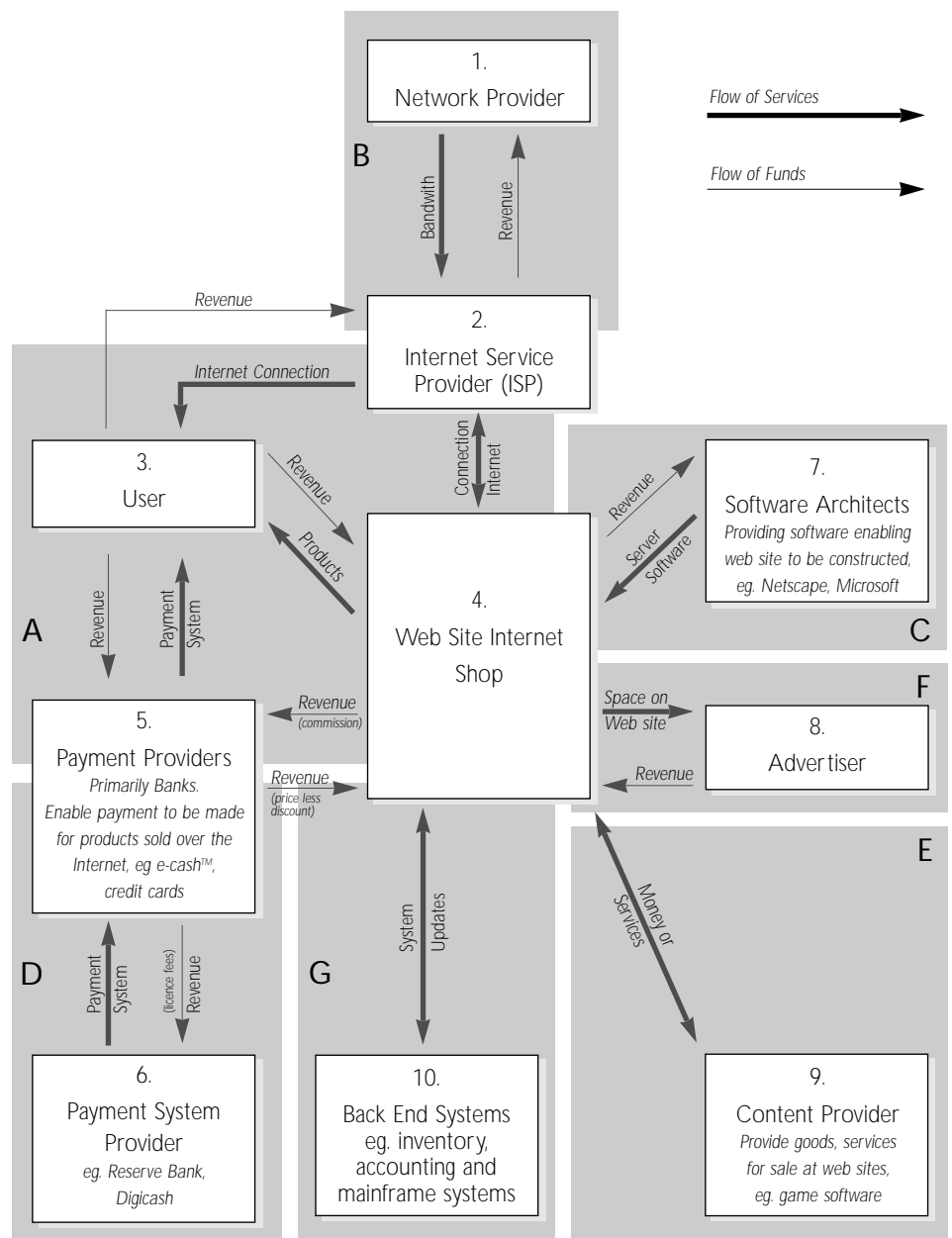
3.6.1

The reasons for defining a business model are essentially twofold:

- to understand how the various players make money from the Internet is important for the ATO in assessing and collecting tax from transactions on the Internet; and
- to make explicit the base assumptions underlying this study so they are able to be examined and critiqued.

3.6.2

The following diagram shows a basic business model for the Internet.



Transaction Group A

The User, or potential "Internet Shop" customer, pays a fee to the ISP who supplies an Internet Connection. This gives the user access to various Internet services such as World Wide Web, email etc.

The User visits a Web Site or "Internet Shop" (an Internet Shop may vary greatly in size, they could be a large retail/wholesale organisation or a single person operation. "Shop" has been used for convenience only) and decides to purchase goods and/or services. To pay for items, the user obtains a payment system from a financial institution - the Payment Provider. The Payment Providers also provide various services related to the system (settlement, authorisation etc).

The Internet Shop purchases a permanent Internet connection or space on the ISP's computers from the ISP.

Transaction Group B

To provide the User with access to the Internet, the ISP purchases a set amount of bandwidth from a Network Provider.

Transaction Group C

Software architects supply the Internet Shop with the software required to enable connection to an ISP and to allow customers to browse the shop.

Transaction Group D

Payment Systems Providers supply the underlying technology and expertise required to run the Payment Providers computer systems. Payment providers pay license fees for this service.

Transaction Group E

The Internet Shop purchases goods and services from a Content Provider. The Internet Shop may purchase the rights to a product or may be one of many shops offering a product.

Transaction Group F

Advertisers purchase space on web sites through the Internet Shop. Advertising fees are negotiated on a fixed or "fee per click" basis, depending on the popularity of the site.

Transaction Group G

The Internet Shop maintains its back end systems through system updates. This automates the process of updating inventory, accounting and mainframe systems.

The Players

Player	Number (Australia)	Capital Required (indicative only)
User	approx 1,400,000 - 1,700,000 ¹² . Continuing rapid increase.	\$2,000 for Computer, Modem and Internet Connection
Internet Service Provider	approximately 450 ¹³ - many small ones, a handful of large ones	approx \$60,000 to \$100,000 for a small-medium site. Costs for a few large operators would be much larger. Small sites can operate with significantly less than \$60,000
Network Provider	Prior to July 1997, only 2 (Telstra and Optus). Should increase after deregulation, but the number of serious players likely to remain small. Satellite technology will allow some new entrants to provide networks in Australia without necessarily having infrastructure in Australia.	\$500m +
Software Architects	Commercial players include Netscape and Microsoft, both U.S. based, and also UNIX based server software ¹⁴ . Capital, skill requirements and high entry costs will limit new entrants	Varies, difficult to determine, from perhaps \$100m upwards. Risks for a new entrant would be very high.
Advertiser	No figures available on total number of advertisers; currently relatively small in value but estimated to grow rapidly.	Varies. Depends on number of websites where ads placed and design costs.
Payment System Provider (PSP)	Number of serious ones relatively small, mostly U.S. based. The term includes government PSPs such as the Reserve Bank	Varies
Payment Providers (Financiers)	Relatively small numbers, mostly banks or credit card companies.	"Bank" like. Banks typically are the ones to have the client base, and financial and computing infrastructure required. Usually "licence" a payment system and units of value from PSPs.
Content Providers	No statistics available, but large numbers	Varies. Ranges from very large players to very small players
Commercial Web sites	Only a few thousand commercial web sites, but numbers rapidly growing.	Varies. Large sites could cost millions of dollars in setup and running costs, very small sites under \$1,000.

Notes to the Table

- (a) An IAP [**Internet Access Provider**] provides the services to a client that are necessary to enable that client to send packets to, and receive packets from, the Internet. This involves making the client's Internet Protocol (IP) number visible to the Internet routing network.
- An IAP can provide dial-up access or can offer leased lines to clients. An IAP may have more than one Point of Presence (POP) in different locations.
- The Internet enables software running on different computers to communicate with each other in a so-called *client-server* environment. The client software resides on a user's PC, while the server software resides on a larger computer. The client software for the World Wide Web is commonly known as a *Web Browser*.
- An ISP [**Internet Service Provider**] 'hosts' the server software on its computers, in addition providing IAP functionality. These servers provide a range of Internet-based applications to clients who are already connected to the Internet¹⁵.
- (b) Search engines such as Infoseek, Lycos and Yahoo are not separately identified. A reasonable parallel to such search engines in the telephone system is the White and Yellow pages.
- (c) Site designers, the people who "build" Internet web sites using the programming language HTML and an array of other tools, have been subsumed under "content providers". Site design is an important and rapidly growing industry.
- (d) In section 8 we have explained the possible roles each of the players in the model could play in respect of tax compliance on the Internet.

Electronic Payment Systems

Introduction

- 4.1.1 Payment systems fall into two basic categories: “accounted” and “unaccounted”¹⁶.

Accounted Systems

- 4.1.2 Accounted systems require payment to be effected through a third party, independent of the payer and recipient. Examples are cheques and credit card transactions. The key feature is that accounted systems generate a record, linked to a person, which can be produced if necessary for tax or other audit purposes.

Unaccounted Systems

- 4.1.3 Unaccounted systems allow value to be transferred without the involvement of an independent third party. The obvious example is cash. Here the key features are that there is no independent record and no need to identify the parties to the transaction. The buyer, for example, may consider that the transaction relates to a private matter which he does not wish the world to know about, and in many cases may prefer that even the seller does not know his identity. One significant benefit of electronic cash is that it caters very well to this kind of need, as it entails neither the “hand to hand” nature of ordinary cash or the provision of identification details in credit card systems.

SVCs and Network Money

- 4.2.1 Electronic payment systems can be categorised as either credit card systems, Stored Value Cards (SVCs) or network money.
- 4.2.2 Security technology, including encryption, has enabled credit cards to be used as electronic payment systems on the Internet by protecting the details of the card, cardholder and transaction during transmission.
- 4.2.3 SVCs are like debit cards where the store of value is on the card and not in a linked bank account. The user gives the issuer some cash, the value of which the issuer inscribes on the SVC. The card keeps track of the progressive decline in the inscribed value as the card is used to make purchases.
- 4.2.4 Network money also represents stored value, which has been pre-purchased, but with the difference that the value is stored on the Internet or on devices attached to the Internet such as computers instead of a plastic card. Network money is *transferable* over the Internet.

Maturity of Credit Cards

- 4.3.1 Credit cards are considered to be a mature technology in relation to the Internet. “Quotation” of credit card numbers to effect purchases on the Internet is now a routine practice. Visa and Mastercard, two of the key supporters, have both shown a strong commitment to develop this aspect of their business. Quoting a credit card number using a web browser such as Netscape or Microsoft Explorer is considerably safer than many other commonly accepted uses of a credit card.
- 4.3.2 In addition, the SET¹⁷ protocol should provide even greater security for the use of credit cards in electronic commerce.

Maturity of Network Money and SVCs

- 4.4.1 In our view, the maturity of leading network money systems such as Digicash and SVC’s such as the Mondex card is yet to be fully established. “Maturity” here implies a situation where these systems have the same common acceptance as cheques or credit cards. There are certain key properties for these systems which have yet to be satisfied, including ready availability, ease of use, widespread acceptance and scale (scale is discussed separately below). There is also an issue relating to lack of deposit cover for stored value cards¹⁸, and currently¹⁹, none of the none of the major products support international use.
- 4.4.2 Notwithstanding these reservations, we believe the economic benefits of the emerging electronic cash systems for low value “point and click” purchases where the buyer wishes to remain anonymous are such that the issues mentioned will be resolved.
- 4.4.3 Of the two systems, SVC’s are generally more mature than networked money.

Size of Electronic Payment Systems

- 4.5.1 It is highly likely that successful electronic payment systems of whatever variety will have to be implemented on a large scale to be effective. This is not only due to the need to build a highly robust and scalable²⁰ system, which is expensive, but also of the need to secure a large customer and support base so that payments made using the system are readily negotiable.
- 4.5.2 This implies large capital costs, and the way the electronic payment industry is shaping up, there is unlikely to be more than a relatively small number of key players. It is easier to regulate a small number of large industries than a large number of small ones, particularly where the regulatory rules (reporting, withholding etc) have the same impact on each player and where the costs can be passed on to customers.

Important Qualification

- 4.5.3 The conclusion in the above paragraph needs some qualification: most of the players are not in Australia and may not be susceptible to Australian jurisdiction, but there is currently nothing to prevent Australian residents using them.

Delivery of Money

- 4.6.1 It would be considered imprudent to send a large amount of cash from Australia to an overseas address. If the amount of cash exceeded \$10,000 it would also attract the provisions of the *Financial Transactions Reports Act 1988*. Electronic cash alters this situation.
- 4.6.2 Electronic money can in principle be sent overseas with as little formal difficulty as attaching an enclosure to an e-mail and sending it to a colleague. It is secure, not in principle limited to any maximum value, and delivery costs are low. From a taxation perspective, payments such as this are very unlikely to be monitorable.

Electronic Cash is more challenging than Physical Cash

Subject to the maturity of the technology in both a technical and social sense, flows of electronic money (particularly, but by no means exclusively, unaccounted electronic money) capable of effecting payment at a distance (eg: via the Internet) are likely to have significant adverse impacts on the enforcement of tax law. The evasion potential of conventional cash is limited by its “hand-to-hand” nature. Payments of electronic money can be made across the globe in seconds.

Cultural Factors

- 4.7.1 Many people have made the point about the importance of cultural factors, of trust, useability etc. It may be readily acknowledged that it will take time - perhaps a significant time, 5 to 10 years or longer - for the use of electronic cash to become widespread across society generally. Early adopters, however, may form a significant economic group²¹.

Regulation

Several principles may be useful:

- regulations imposed on electronic money by Australia acting alone would have limited effectiveness and could even be harmful;

There is a view that unilateral action may be more damaging than no action. As the internet allows electronic payment system providers to locate their operations anywhere in the world, they might choose to flee a jurisdiction that unilaterally introduces a strong regulatory regime. This flight of business may be more detrimental to the Revenue than no action and law-abiding people could lose access to the substantial efficiencies offered by such systems for making payments. This view can equally be applied to regulation of other aspects of electronic commerce.

In general, the approach most likely to retain a “level playing field” is for any regulation considered necessary to be introduced in a multilateral fashion which requires international cooperation.

- a regulatory distinction should be drawn between accounted and unaccounted payment systems; and
- principles governing access to the records of electronic money issuers need to be developed internationally.

Current State of Internet Electronic Commerce and Tax Base Implications

5.1.1 We have examined a range of statistics about electronic commerce and drawn some estimates of the state of Internet electronic commerce in Australia.

5.1.2 The statistics gathered have covered:

- demographic information, both business and consumer;
- market valuations;
- market penetration;
- Internet infrastructure and bandwidth; and
- Internet Service Providers.

5.1.3 These factors all point to a continuing rapid growth in electronic commerce on the Internet.

5.1.4 In addition, we have conducted our own research into the current upper bound of the potential impact on the tax base from Internet electronic commerce and collected a number of examples of current Internet trading activity.

Australian Demographics

5.2.1 Both Telstra²² and Wwww.consult²³ have made estimates of the number of Australians with access to the Internet. While their approaches differ they conclude that, in May 1996, there were between 800,000 and 1,000,000 users in Australia. AGB McNair estimate that, as at July 1996 there were 1,037,000 regular Australian users of the Internet²⁴ and, using Wwww.consult's growth rate figures, there are an estimated 1,120,000 to 1,400,000 current users.

5.2.2 Wwww.consult²⁵ and AGB McNair have both produced statistics indicating that around 5% of Australia's online users have purchased products on the Internet and that the figure is steadily growing.

5.2.3 Wwww.consult has also produced figures indicating that:

- 6% of users confirm that they have actually done an online transaction with a bank;
- credit card is the preferred method of payment by Internet users (total 54%) followed by cheque (10%); and
- there is an increase in the number of women using the Internet (13.5%) and people over 45 using the Internet (24.2%).

Market Value

5.3.1 The various sources of Internet market statistics vary widely in their estimates²⁶, and do not provide a very good basis for detailed study except to the degree that they indicate substantial growth in electronic commerce the next 3 years and show that business to business transactions are the most significant component of Internet electronic commerce.

5.3.2 In addition, the limited number of statistics in relation to Australia mean that estimates for Australia must be extrapolated from the figures for the United States, further reducing their reliability.

5.3.3 However:

- The following ranges have been estimated²⁷ for the value of consumer, inter-corporate and total Internet electronic commerce in the United States in 1996 and the year 2000:

	1996 U.S.\$ million		2000 U.S.\$ million	
	Low	High	Low	High
Consumer	140	730	7,170	32,000
Inter-corporate	210	620	59,300	112,000
Total	350	1,350	66,470	144,000

- Interactive Market Access Systems estimate domestic U.S. sales on the WWW of U.S.\$ 4,500 million²⁸ by December 1998, which seems to accord with the above projections;
- The Australian market is estimated as 7% of the U.S. market. Based on the low end of the U.S. range, the total value of consumer Internet commerce in Australia in 1996 could have been about \$10 million. MasterCard Australia has recently advised that Australian merchants conducted approximately \$15 million worth of transactions over the Internet in the last twelve months.²⁹ The year 2000 projections for Australia are about \$4,650 million in total Internet commerce and about \$500 million in sales;
- As at 31 October 1996 regular U.S. usership is estimated at between 20 million and 35 million based on various surveys.³⁰ There were more than 500,000 World Wide Web sites and 12 million host computers online at any given time. Given that the U.S. is estimated to be 66% of the total Internet structure at present, this would lead to a total online population of between 30 and 53 million in the world;³¹
- Future projections of U.S. usage of the Internet are conflicting, but general consensus is that between 152 and 163 million Americans³² will be on the Net by the year 2000. In Australia, based on Australia being 7% of the U.S. market, this translates to more than 10 million people with regular Internet access by the turn of the century; and

- In specific electronic cash studies, Killen & Associates estimate that more than 9 billion electronic cash transactions annually will be carried out on the Net by the year 2000, and Booz, Allen & Hamilton predict that as much as 20% of all household expenditures will be funnelled through the Internet within 10 years.³³

Market Penetration

5.4.1

Australia is reported as having the third highest level of Internet penetration in the world. This situation correlates closely with data compiled by the Australian Bureau of Statistics (ABS) which indicates that in 1994 Australia had the fourth highest world level of penetration of computers owned by households (23%).

Australian Household Usage

5.4.2

Although not dealing with total Internet usage per se³⁴, the Australian Bureau of Statistics, in its Household Use of Information Technology Report of February 1996 made the following pronouncements:

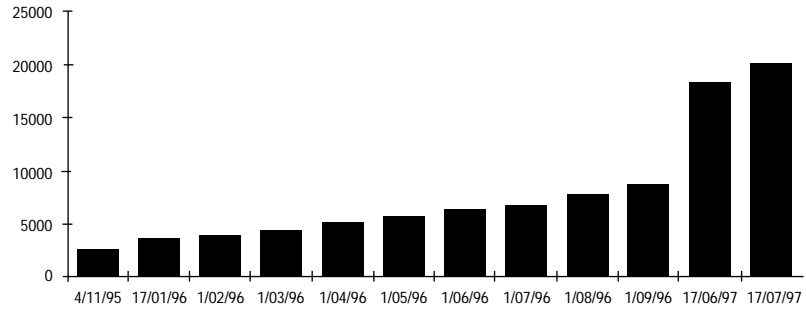
- from February 1994 to February 1996, the total number of computers in use in households had risen from 1.9 million to 2.5 million;
- of the 4.6 million households in Australia, 19 per cent intended to purchase computer equipment in the 12 months from February 1996 and a further 11 per cent intended to spend an amount of money in the 12 months from February 1997;
- 23 per cent of households using computer technology had a modem or external link compared with 17 per cent two years ago. Desktop or personal computers increased from 75 per cent to 81 per cent of the total number of household computers, and use of facsimile machines increased from four per cent to 10 per cent of all households;
- of the 1.5 million households which have a computer but do not have a modem, 45 per cent indicated that they were not interested or would not use a modem and 27 per cent indicated that costs for a modem were too high;
- there were 262,000 people (178,000 males and 84,000 females) who indicated using the Internet from home. People in the 26-40 years age group were the highest users of the Internet (38 per cent), followed by those aged 41-55 years (28 per cent) and for 18-25 years (18 per cent);
- there were about 141,000 household computer users who used electronic mail, and about 116,000 households who accessed other on-line services/databases;
- however, when all households were asked about their willingness to use other technologies, 78 per cent said 'no' to home shopping, 70 per cent said 'no' to home banking and 95 per cent said 'no' to home gambling; and
- 3% (200,000) reported having Pay TV with the majority of these households being in capital cities (85 per cent).

5.4.3

Australian Business Usage

As at July 1997, 20201 com.au (commercial Australian) domain names have been registered. New commercial domains and sites continue to grow at the rate of 10% per month. An illustration of this growth may be seen in the following graph.

COM.AU Domain Names



5.4.4

Effectively the number of Australian businesses with an Internet presence is doubling about once every 8 months. In the current financial year this trend is expected to accelerate, driven by media coverage of the Internet, EDI initiatives by major retailers, and big marketing pushes by the major hardware and software companies.

5.4.5

In terms of the Australian Internet generally, the following recent domain statistics³⁵ are relevant:

	June 1997	July 1997
ASN.AU (Association)	312	326
COM.AU (Commercial)	18378	20201
EDU.AU (Education)	242	244
GOV.AU (Government)	215	222
NET.AU (Network)	1879	1996
TOTAL	21026	22989

- 5.4.6 As can be seen the overwhelming bulk of growth is occurring in the com.au domains or the registration of business presence's on the Internet.³⁶
- 5.4.7 Network Wizards³⁷, who publish Domain Name statistics every six months support this finding. Their statistics show 16811 Australian domains in January 1997 and 25,400 in July 1997 with the bulk of the growth in commercial sites.
- 5.4.8 As at January 1997, commercial sites accounted for about 60% of world wide sites while commercial sites account for about 88% of the total Internet sites in Australia.
- 5.4.9 Australian commercial site participation in the Internet is therefore proportionally higher than comparable international jurisdictions, however the small market size in Australia could skew the figures very easily.
- 5.4.10 The July 1996 Telstra Small Business Index report³⁸ gives some indicators of small business participation on the Internet. The Telstra figures are supported by other research by Research Connection³⁹. The small business index report reveals:
- 74% of small businesses have a personal computer, and 31% have a modem. These figures are expected to grow to 81% and 48% respectively by July 1997;
 - 9% of small businesses were connected to the Internet, and this is expected to grow to 19% by July 1997. Of the whole survey population, 27% of small business was either connected or planned to connect to the Internet. Large businesses are somewhat more Internet oriented, and plan to increase their Internet usage dramatically;
 - 14% of small businesses currently use eMail (on the Internet an in proprietary backbones), but 31% are expected to be routinely using it by July 1997; and
 - 41% nominated 'access to information' as a major motivation, whilst 24% looked to research, 15% to increasing business prospects, 13% to marketing and advertising and 13% to eMail. Other uses mentioned included customer support and communication.

Infrastructure and Bandwidth

- 5.5.1 In support of the apparent growth in users is the growth in the underlying network infrastructure. Infrastructure growth is significant for two reasons:
- it provides support for the growth in user numbers; and
 - to the degree that infrastructure growth exceeds user growth, and is utilised, it indicates growth in higher bandwidth (and more valuable) products, such as video and music, bypassing conventional distribution channels.
- 5.5.2 In July 1996 Network Wizards conducted a US domain polling exercise across the Internet which was added to the results of previous surveys. The results indicated that it was possible to connect 32,864,768 users in the USA simultaneously.⁴⁰

- 5.5.3 The same type of exercise has not been conducted across Australian (.au) domains, but estimates based on 7% of the U.S. market and extrapolation from known facts indicates that there could be 2,269,500 possible simultaneous users under the present infrastructure.
- 5.5.4 Given the structure of the Internet, with Class A to Class D networks⁴¹, it is unlikely that all addresses would be in simultaneous use, and many are otherwise allocated to servers and Web sites. Consequently the 2,269,500 users estimate is not inconsistent with the 1,120,000 to 1,400,000 Australian users estimated above from other sources.
- 5.5.5 The other significant finding was that the Class C network count expanded by 1000% in two years. Class C networks are generally representative of the growth in retail level Internet Service Providers.
- 5.5.6 Networks Wizards other conclusions⁴² were:
- the Internet continues to double in size every 12 months. Over the last four years there has been an average growth rate of 85% per annum, which has accelerated to 100% over the last two years. In short, the Internet is now growing faster than ever before;
 - there is now no way to reliably estimate how many users this growth represents; and
 - the results reflect the minimum size of the Internet. Network Wizards could not tell if their procedures located all domains and the network count of 95 Class A domains is considered low given that 255 possible Class A domains exist.

Bandwidth

- 5.5.7 At January 1996 Australia's total Internet backbone to the U.S. and outside world was less than 12 Mbs; eleven months later it was approximately ten times that (estimates range from 94.4 mb to 128.5 mb⁴³). Bandwidth, as discussed in section 6, is a key "growth" factor.
- 5.5.8 Another factor that has not been taken into account is proxy caches⁴⁴, which may increase the real overseas data transfer bandwidth actually downloaded by consumer users by a factor of two, to more than 200 Mb per second.

Internet Service Providers

- 5.6.1 The ATO conducted a survey of ISPs. While the response rate of 10% indicates some grounds for caution in interpreting the results, some results are notable:
- generally speaking, the ISPs surveyed have been in operation less than 18 months;
 - the growth they have experienced over the last 12 months has been very high. Between them they had 4,305 clients in August 1995, and by August 1996 this had increased to 18,270; and
 - ISP income growth is rocketing. 1995 receipts were 15 times more than disclosed for 1994. The current year receipts disclosed by respondents indicate that receipts are continuing to grow at more than 100% per annum.

5.6.2 Growth in the absolute numbers of ISPs should be treated with particular caution and should not in itself be seen as an indicator of growth. We share Sagawa's view⁴⁵ that the industry is likely to become more capital intensive and the number of "corner shop" operators is likely to diminish.

Potential Impacts on the tax base

5.7.1 In making prognoses about the likely rate of growth in Internet commerce in Australia most analysts have acknowledged both its currently very small base and that any rapid growth will most probably be restricted in the first instance to a fairly narrow range of products and services. Consequently, the ATO studied industries adaptable to electronic commerce and not just those currently engaged in electronic commerce.

5.7.2 The industries subject to examinations were drawn by making reference to the most frequently purchased goods and services on the Internet, which are:

- computer software and hardware;
- travel arrangements;
- books and magazines; and
- music tapes and CD albums,

and analysing the attributes of these products to determine their suitability for electronic commerce.

5.7.3 The main features were that the products:

- were digitised and not readily available through conventional means, (e.g. low-cost extracts and compilations from data bases - including encyclopaedias, electronic 'shopping mall' directories, various sources of advice, music recordings, films and pictures, etc.); or
- were digitised versions of goods and services which otherwise would need to be purchased through conventional means. (e.g. financial services - including accounting, insurance, stock trading and gambling, computer software, books, other textual information, music recordings, films, pictures, various kinds of advice - including health and medical, etc.)

5.7.4 In addition the ABS Household Expenditure Survey was utilised in determining the items on which households spent their money. By aligning household expenditure with identified electronic commerce attributes, a list of industries most suitable to commerce on the Internet was established.

Selected Industries

By utilising both the results of the various Internet surveys and the analysis drawn from the Household Expenditure data a list of industries was compiled of major electronic commerce players. The industries prioritised to the top of the list consisted of the following industries:

- computer software;

Software warehouses

Www.jumbo.com is a software warehouse with over 200,000 pieces of shareware software for download.

Software.net is the world's largest Internet-based commercial software store, which began trading in 1994 and now offers 2,000 downloadable software products compared with - significantly - 18,000 shrinkwrap packages⁴⁶. By contrast, one of the largest of United States software retailers, Egghead Software, was opened its first store in 1984 and now has 150 chain stores but offers only 15 downloadable software products⁴⁷. Over one-third of Software.net's downloads are to customers outside North America. Egghead Software uses the shopping cart and checkout "supermarket" metaphor (commonly used in Internet shopfronts) for customers browsing the virtual shelves of the sales catalogue back-end of its Website. The secure sockets layer (SSL) protocol⁴⁸ is then used to encrypt the customer's credit card details and transmit them to the vendor.

- news and information;

Popular Media

The top 10 media Websites visited by Australians, in rank order, are ABC, *Sydney Morning Herald*, CNN (US), C|Net (US), *The Australian*, *The Age*, *Newsclassifieds* (News Ltd), Microsoft Network (US), *Trading Post Classifieds*, and Triple J⁴⁹.

Significantly, three are United States sites, three are associated with radio or television, one is a software company, and two offer classified advertisements with no editorial content at all.

- recorded music;

Buying Music on the Web

One can buy CDs on the web. For example, a purchaser can search for a CD s/he wants on CDEurope⁵⁰. The site will then return the price(s) for that CD. CDEurope accepts all major credit cards, cheque, money order or bank transfer. The CD is then shipped to the customers. Other CD selling sites include Music Machine⁵¹, Music Boulevard⁵², EMusic⁵³, etc. Music Boulevard allows customers to listen to three 30 second sound samples for selected titles. Delivery time for orders outside of U.S. is 7-10 days.

Downloading Music

Why pay for a CD if you only want the music? Digitisation allows a person to directly download the music from the web. Global Music Outlet⁵⁴ is trialing download fees of US\$ 0.99 per song. A three-minute song takes about 1.4 megabytes and it will take around 4.5 to 8 minutes to download via a 28.8 kbps modem⁵⁵. Upon paying a one-time membership fee of US\$ 10, a customer will be entitled to a free Electric Record Player.

- gambling;

Gambling on the Internet

Gambling is one of the industries covered in the La Trobe University Online Media Program (OMP) study. There is also an interesting article by Cynthia R Janower, of the Harvard Law School, on the topic⁵⁶. where Janower states that "... The economics are excellent. Whereas it might cost \$300 million to build a new resort casino which employs thousands, ICI's virtual casino was developed for only \$1.5 million and employs only 17 individuals."

There were differences between the project team and OMP on the extent of the risk presented by Internet gambling. Given the contribution of gambling revenues [\$3.3bn] to State and Commonwealth revenues, the situation bears monitoring. It is also apparent that Internet gambling depends critically for its viability on spontaneous "point and click" electronic money, probably in small amounts. This technology, discussed in section 4, is not yet mature.

- travel; and

Travel Services

In Australia, the local market is dominated by a Computer Reservations System called the Travel Industries Automated System (TIAS), which is 50 per cent owned by Qantas⁵⁷. Travel agents in Australia use TIAS as a productivity tool while performing their principal value adding functions: advising clients on travel destinations, itineraries, routes, carriers, passports and visas; booking accommodation, making complex fare comparisons, and confirming reservations. However, Telstra Multimedia has now developed a competitor to TIAS, a destination marketing system (DMS) called Atlas, which runs on a mainframe computer located in Brisbane and can automate all these travel agency functions⁵⁸. Information on all types of travel products - including accommodation, rental cars, coaches, cruise ships, rail transport, ferries, events, insurance, and attractions - can be stored by Atlas and called up on the existing terminals installed in travel agencies.

- retail goods.

5.7.6

In addition to the industries selected for study, the banking and finance sector should be considered a having the features that make it, in part, suitable for electronic commerce. Some of the more unusual Internet businesses are outlined below, indicating the breadth of electronic commerce:

Buying a Car On the Web⁵⁹

Automobiles, especially new ones, are standardised products identifiable by their make and model numbers. Hence there are “auto dealers” on the web, such as Auto-By-Tel⁶⁰, Carsmart and CarsDirect (NZ). Auto-By-Tel has had 600,000 purchase requests for new cars since its inception. Carsmart claims to offer cheaper prices due to savings on inventory, interest and storage costs while CarsDirect provides savings on traditional dealer margins when buyers purchase directly from Japan. A potential buyer can directly access the “auto dealers” or first browses through manufacturers’ web pages or other information sites such as Dealernet⁶¹, Carpoint, Car & Driver or Cartalk. Next, s/he can visit Edmund’s⁶² or Autosite which lists the market price range for the car. S/he can then contact the “auto dealers” and enters a purchase request or quote. Finally, s/he will be contacted by a local dealer with an agreed price on a particular make of car. For used cars, a purchaser can browse through “classified ads” or the “auto dealers”. Sometimes finance or insurance can be arranged through the “auto dealers”.

Wine Retailing⁶³

Dionysus is wine retailer operating solely on the World Wide Web with physical premises in Cheltenham, Victoria, required by regulation but only used to hold inventory.

The company uses the Web to advertise its products, provide vineyards details and to conduct sales.

Orders are generated from local and overseas customers for delivery within Australia and overseas. Surprisingly, a significant number of orders originate from overseas for delivery in Australia!

World Wide Whips⁶⁴

Mick's Whips is an Australian-owned company established in the Northern Territory in 1992. The company manufactures Australian-made, hand-crafted Kangaroo and Crocodile leather goods and wholesales to small retailers in both national and international markets. The flagship products are world class stock whips.

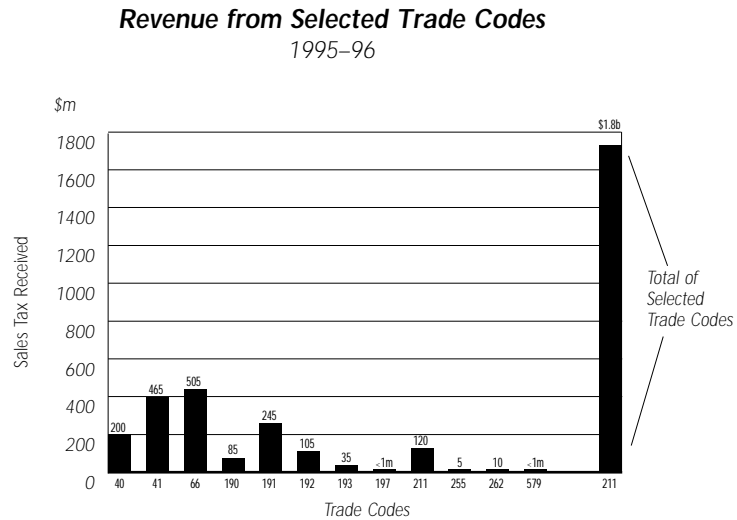
Due to the success of Internet based electronic commerce, Mick's Whips has decided to withdraw from the local market entirely to focus exclusively on an Internet-based global export service from the second half of 1997. This cuts down on overheads, avoids the need to pay rent for the current retail premises and saves time currently used in travelling for domestic sales.

The company is looking to improve it's web page, adding both audio and video descriptions of products and plans to adopt electronic data interchange (EDI) to speed up existing paper document procedures with the Australian Customs Service and the Australian Quarantine and Inspection Service.

5.7.7

Contribution of Selected Industries to the Revenue

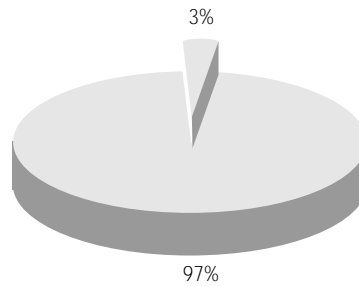
For Sales Tax, the trade codes that most closely represented the six selected industries were analysed and found to contribute \$1.8 billion to the Revenue in 1995/96.



5.7.8

For Income Tax, the industry codes that most closely represented the six selected industries were analysed and found to contribute approximately 3% of the Revenue based on 1994/95, which equated to approximately \$1.0 billion in 1995/96.

Percentage of Revenue Attributable to Selected Industries
Net Business Income for Income Year 1994-95



5.7.9

These estimates represent a very crude measure of the impact on the tax base and it is not to say that electronic commerce accounted for a \$2.8 billion erosion of the tax base in 1995/96.

5.7.10

It should be remembered that this crude estimate represents the upper bound, less the potential impacts from the banking and finance sector, for the extent to which (non-wage) business transactions in these particular industries contribute to the Commonwealth's current tax collections. In practice, the risk is much less than this because the upper bound would apply only if:

- all activities within the selected industries were suitable for electronic commerce;
- all activities within the selected industries were conducted only by electronic commerce⁶⁵; and
- all members of all the selected industries failed to meet any of their taxation obligations.

Qualitative Analysis of Selected Industries

5.7.11

Knowledge of Australian industries' intentions and perceptions cannot be extracted from the data. Rather consultants⁶⁶ were engaged to interview industry leaders of the selected industries. Their findings are compiled into a report in Volume 2, and support the conclusion that electronic commerce is still in its infancy (even if a vigorous and rapidly growing infant) and currently does not present a severe risk to the Revenue.

5.7.12

For the immediate future, the most appropriate approach to assessing the risks to the Commonwealth's tax base and its administration will involve monitoring developments in those particular product markets where Internet-based commerce is developing the quickest.

Internet Growth Issues

Overview

- 6.1.1 This section deals with Internet commerce “growth” issues. The intention is to present the degree of maturity (or otherwise) in some key requirements for Internet commerce. (Payment systems are covered in section 4, as they are important enough to warrant a chapter in their own right).
- 6.1.2 The approach adopted in this paper is to briefly outline the issue, to discuss it, and finally to offer a prognosis. To avoid needless repetition, it is emphasised that prognoses are offered with caution, because of the extraordinarily rapid change of the Internet, the unpredictable interactions of its evolving technologies and economies.
- 6.1.3 There is also a discussion on the “Framework for Electronic Commerce” (“Framework” document), issued by authority of President Clinton on 2 July 1997⁶⁷, which divides the issues ‘into three main subgroups: financial issues, legal issues, and market access issues.’ Aspects of these issues of particular relevance from an Australian perspective are briefly discussed.
- 6.1.4 The overall conclusion that emerges is perhaps a surprising one: notwithstanding a wide range of barriers to conducting electronic commerce, many of which are unlikely to be resolved for several years, there is an enormous vigour in it which on all predictions is likely to see it grow very rapidly.

Taxation

Issue

- 6.2.1 A critical requirement for business to operate effectively is that the environmental rules are clear and predictable. This applies particularly to taxation rules, given the significance of taxation as a business cost.

Discussion

- 6.2.2 As the detailed discussion in section 7 establishes, current rules of international taxation, in particular key taxation principles relating to the source of income, residency and permanent establishments are seriously challenged by electronic commerce⁶⁸. Their application in many cases is in serious doubt; they were designed for an era in which electronic commerce did not exist.

Prognosis

- 6.2.3 For present purposes, there are two kinds of tax rules: those relating to the allocation of taxing rights between nations (“allocative rules”) and those relating to enforcement on the basis of previously agreed taxing rights (“enforcement rules”).
- 6.2.4 It is unlikely that *allocative* tax rules will be clarified quickly. To take just one example, concerning permanent establishments: the economic interests of nations differ markedly in this area, with capital exporting nations preferring a narrow definition and capital importing nations (such as Australia) preferring a wide definition.
- 6.2.5 It is likely that *enforcement* tax rules will be clarified sooner, as nations agreeing to do this would mutually benefit. Implementation difficulties, however, are likely to be considerable.

Legal Issues

Issue

- 6.3.1 The issue canvassed in this section is the degree of maturity of legal aspects of electronic commerce.

Discussion

- 6.3.2 It is clear that currently a comprehensive legal framework for international electronic commerce and an efficient infrastructure to support such a framework (electronic signatures, document registries, dispute mechanisms, consumer protection etc) does not exist. While the ATO has a legitimate interest in some matters, eg those relating specifically to tax law and to general matters such as identity (because of impacts on tax compliance) many of the issues appear to lie within the responsibility of the Attorney-General’s Department.

Prognosis

- 6.3.3 We believe this area is one of the areas where rapid progress could be made if there were effective international cooperation. The matters at issue do not, in general, involve “winners” and “losers”. They involve largely procedural matters - difficult, technical procedural matters it is true, but ones where a great deal of work has already been done.
- 6.3.4 It should be noted that small value electronic commerce may proceed with vigour before the legal issues are resolved. However it seems unlikely that businesses would engage in large value electronic commerce where the rules and obligations are uncertain.

Security

Issue

- 6.4.1 The issue is the extent to which the Internet provides a secure environment. Many commercial arrangements require a secure environment in which to take place.

Discussion - General

- 6.4.2 It is often asserted that the Internet is an insecure environment. The statement, made thus baldly, is untrue. Transactions on the Internet can be made very secure using encryption, and other techniques, such as tunnelling⁶⁹. Rather than treating “lack of security” as a “stop” sign, a larger analysis which takes into account security risks with other costs and benefits is necessary.

- 6.4.3 One difficulty is that:

Every move to increase security will be matched by efforts elsewhere to increase flexibility and simplicity which will often fail to adequately address security issues. Highly secure cryptographic systems will often fail to make significant improvements in security because they will be tacked onto insecure environments and will fail to address the real security issues⁷⁰.

- 6.4.4 It also, of course, depends on the application. The Internet can certainly be made secure enough to handle consumer purchases using credit cards on websites. Direct access from the Internet to mission-critical corporate mainframe databases is of course another order of risk. It is not that such access is unacceptable, or too dangerous, as a matter of principle; rather, that administering access via gateways (the normal method) is a highly complex and technical business for which one may never be sure that any unauthorised access is impossible.

Security - Encryption

- 6.4.5 Secure encryption is legal and readily available in Australia and its use will probably increase given the recent availability of PGP version 5 and its new “easy to use” interface. Attempts to prohibit encryption in a tax context are unlikely to be successful. We also note the views of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in this context:

Cryptography appears to be the only possible way to achieve security in various forms on an open network like the Internet. Since the openness is clearly a major contributing factor to the success of the Internet, it is a factor that countries change at substantial risk to their effective participation in the emerging global information economy.

There are two current views on encryption on the Internet. Law enforcement officials have thought allowing encryption-based security would allow important crimes to be facilitated by the Internet. However there is a clear emergence of the view that the Internet is an important part of the public infrastructure, and the deliberate attempts to restrict the application of security technology to the Internet has left it insecure and vulnerable to attack by terrorists and criminals⁷¹.

- 6.4.6 For the reasons given by CSIRO, and also because the attempted prohibition of PGP and other secure encryption software has a distinctly Canute-like flavour to it⁷², we do not recommend any prohibition be introduced on encryption software.
- 6.4.7 It should not be possible to avoid taxation liabilities attached to particular data simply by virtue of encrypting it and “losing” the key. To do so would confer advantages on tax cheats. Therefore regulation concerning encryption in a tax context should follow two basic precepts: access to the tax-related data, whether encrypted or not, as provided for in, and subject to, the relevant tax law; and “reasonable facilities and assistance” as provided for in ss. 263(3) of the *Income Tax Assessment Act (1936)* (ITAA) including the production of the key to any encrypted data, with appropriate penalties for failing to do so.
- 6.4.8 There is also a case for procedural provisions requiring safeguards for decryption keys held by businesses to reduce the likelihood of spurious defences based on loss of keys, but without actually requiring keys to be given to third parties.

Prognosis

- 6.4.9 To paraphrase the U.S. framework document, there is no “magic” formula for security. Properly implemented, a website can be made a secure place of business. This does not rule out clever hackers getting past the security, just as clever thieves can break into banks. While security may improve, it is unlikely to ever become perfect, for the reasons given by CSIRO.

Interface

Issue

- 6.5.1 The issue is the extent to which the relative complexity of getting on, and using, the Internet acts as a deterrent to many consumers.

Discussion

- 6.5.2 A critical and frequently underestimated factor in consumer purchasing decisions is “ease of buying”. Currently, the buying interface over the Internet is discouraging to most consumers⁷³. The interface metrics of a TV style device (turn it on and change channels) are significantly less complex than existing computers, and many consumers have no inclination to learn such interfaces in order to shop, even with the so-called “easy to use” operating systems like Windows 95TM.
- 6.5.3 Within 12-18 months it is likely devices will appear⁷⁴ substantially cheaper than current PCs and of an order of magnitude easier to use - comparable to television sets (see section 7). Such devices will contain capabilities for browsing the Internet, for spending in a secure way, and for “point and click” spending decisions⁷⁵ using electronic money.

6.5.4

Another important interface aspect is that the Internet's reliance on *representation* (both visual and auditory) of goods and services offered for sale is somewhat similar to mail-order catalogue shopping, which has never been as successful in Australia as in the U.S. While such shopping has significant advantages for sellers, in reduction of transport costs, and storage costs at possibly high-rent locations, the benefits for buyers are much less marked. There are, however, a number of important differences for Internet sales over mail-order shopping, including:

- the facility for immediate delivery of a large and valuable class of products, namely digital goods such as software and music, satisfying the "I want it now" impulse;
- the size, variety and ever-present availability of the market, as opposed to the sporadic availability of mail-order, the need to match a prospective seller's offerings with a buyer's needs at a particular point in time; and
- while there are higher capital costs initially in obtaining Internet access, there are lower transaction costs for subsequent purchases, in that an entire purchase can be effected sitting in front of the computer.

Prognosis

6.5.5

There is little doubt that interface aspects will be resolved over the next few years because of its critical impact on commercial potential.

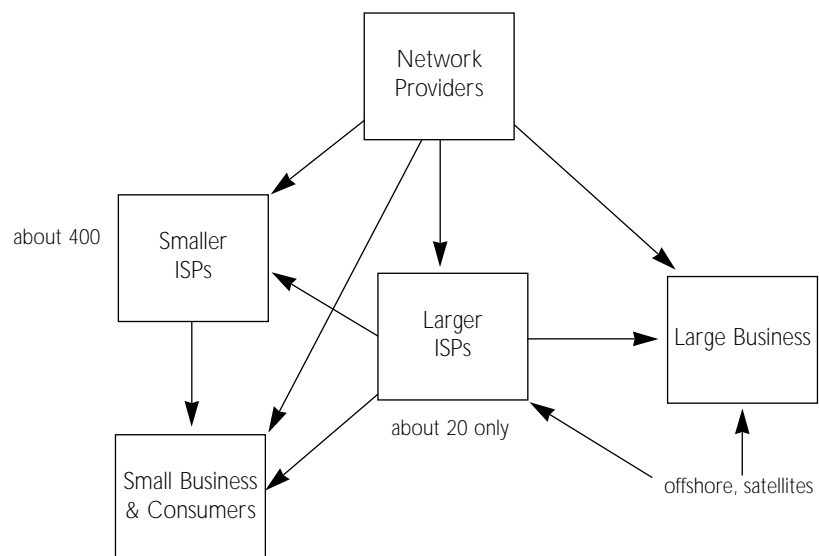
Bandwidth

Issue

6.6.1

In simple terms, bandwidth is the carrying capacity of a network, or how much data can be transferred in a given time. The diagram below shows the distribution chains for bandwidth in Australia.

The Bandwidth Distribution Chain



Discussion

6.6.2 The importance of bandwidth is that it determines the extent to which Internet *delivery* of digital products is feasible. Immediate delivery via the Internet may be more attractive to consumers than deferred delivery via the ordinary mail system. In addition, certain kinds of entertainment which appeal to consumers rely on higher bandwidth⁷⁶.

Prognosis

6.6.3 As indicated at paragraph 5.5.7, bandwidth increased approximately ten times in the course of one year (1996). Further increases are probable. Demand is also increasing at a rapid rate, because many key products are bandwidth intensive.

Free Rides, Standards and Commoditisation

6.7.1 An article by Paul I Sagawa⁷⁷ highlights some key problems of the current Internet, namely:

- lack of pricing feedback: it is easy for players, both private users and commercial organisations, to “free ride”: currently, according to Sagawa, none of the largest network service providers [telcos] “makes profits on its Internet backbone services”, which acts as a disincentive to investment;⁷⁸
- standards mechanisms are ineffective; and
- commoditisation, which has two basic aspects: (a) Because of the fragmented, undifferentiated nature of the Internet as a service market, it is difficult to cost-effectively target attractive market segments, and (b) lack of useful benchmarking criteria means that it is easy to point the finger somewhere else when things go wrong.

6.7.2 For this reason, Sagawa suggest that a likely scenario is the “Balkanisation” of the Internet, its division into a number of networks where performance will depend on price, and this tendency is already occurring in Australia, where performance on one key service (file transfers) varies markedly depending on the service fees paid to the ISP.

US Framework Document

6.8.1 The U.S. is the centre of the global Internet, having about two thirds of all Internet sites and is the clear market leader in electronic commerce. It is important therefore to examine certain aspects of the Framework document, particularly those it characterises as “financial”, to understand possible implications for Australia from a taxation perspective. The comments made on the paper are made with that objective in mind.

Customs and Taxation

6.8.2

In relation to tariffs, the document states:

For over 50 years, nations have negotiated tariff reductions because they have recognised that the economies and citizens of all nations benefit from freer trade. Given this recognition, and because the Internet is truly a global medium, it makes little sense to introduce tariffs on goods and services delivered over the Internet.

Further, the Internet lacks the clear and fixed geographic lines of transit that historically have characterized the physical trade of goods. Thus, while it remains possible to administer tariffs for products ordered over the Internet but ultimately delivered via surface or air transport, the structure of the Internet makes it difficult to do so when the product or service is delivered electronically...

Therefore, the United States will advocate in the World Trade Organization (WTO) and other appropriate international fora that the Internet be declared a tariff-free environment whenever it is used to deliver products or services.

6.8.3

The important points to note are that the tariff-free policy applies only to goods and services delivered via the Internet. It does not apply to tangible products ordered and paid for over the Internet but delivered via conventional means. The U.S. has a comparative advantage in digital products such as software and entertainment and is the largest manufacturer of such products.

6.8.4

In relation to taxation, the framework document has a “no new taxes” policy. This is clearly consistent with the existing framework of tax treaties between nations, as the reference to avoiding “inconsistent national tax jurisdictions and double taxation” illustrates. The document also evinces concern about “possible moves by state and local tax authorities to target electronic commerce and Internet access.” This is undoubtedly a signal to the U.S. states some of whom have recently moved to levy tax on Internet transactions.

6.8.5

As noted above, income tax issues related to electronic commerce are covered in detail in this paper and in an OECD paper *Implications of the Communications Revolution for Tax Policy and Administration*, ref. CFA(96)46 which was jointly produced by Australia, Canada and the U.S.

Payment Systems

While the general approach of the framework document towards electronic commerce is one of minimal regulation, the paper is somewhat more guarded in this the case of payment systems.

It states (p 8):

At this early stage in the development of electronic payment systems, the commercial and technological environment is changing rapidly. It would be hard to develop policy that is both timely and appropriate. For these reasons, inflexible and highly prescriptive regulations and rules are inappropriate and potentially harmful. Rather, in the near term, case-by-case monitoring of electronic payment experiments is preferred.

From a longer term perspective, however, the marketplace and industry self-regulation alone may not fully address all issues. For example, government action may be necessary to ensure the safety and soundness of electronic payment systems, to protect consumers, or to respond to important law enforcement objectives.

Taxation Implications

7.1.1 An analysis of taxation fundamentals can be used, against an understanding of the general model of electronic commerce, to identify some basic implications for taxation.

7.1.2 For taxation to be effective a tax administrator must be equipped with a number of fundamental requirements which apply, to some degree, to all historical, contemporary and theoretical types of taxation. The fundamental requirements are:

- Jurisdiction;
- Identification;
- Information; and
- Collection Mechanisms.

Jurisdiction

7.1.3 Jurisdiction is variously defined as “power; authority; control” and “the territory over which authority is exercised”⁷⁹. The second element is significant in terms of electronic commerce because, while jurisdiction may be confined to a particular territory, Internet electronic commerce is not. This is discussed in more detail below.

Identification

7.1.4 Identification of the party responsible for remitting tax revenue is a fundamental element of a taxation system. In the case of direct taxes, such as income tax, it ensures that the taxpayer is only assessed on their own taxable income. In the case of indirect taxes, such as sales tax, accurate identification of the remitter is important to ensure correct remittance. In all cases, accurate identification of the party responsible for remitting tax revenue is important in the event of default in which remedial action is required.

Information

7.1.5 Information is essential for a taxation system because, in order to tax something a tax administrator needs information about that “something”. In Australia’s case the information is usually about value.

Collection Mechanisms

7.1.6 If taxes, properly payable, cannot be collected, or if the cost of collection is so high as to exceed the amount collected, then there is no effective tax system. For this reason a tax system needs mechanisms to collect all taxes authorised by law in the most efficient manner possible.

Jurisdiction

- 7.2.1 A tax administrator must have legal and practical jurisdiction over the party liable for the tax.

Residency, Source and Permanent Establishment

- 7.2.2 The legal basis of tax jurisdiction is premised on taxation concepts such as residency, source and permanent establishment. Generally, Australian resident taxpayers are taxed on income from all sources and non-resident taxpayers are taxed on their income sourced in Australia. Australia also levies withholding taxes on certain types of income based on payment taking place from Australia. Special rules apply to insurance and shipping. Australia's double taxation agreements relieve jurisdictional double taxation by allocating taxing rights over various types of income between tax jurisdictions. A key feature of these agreements is that business profits derived by a non-resident can be taxed in the source country only if they are attributable to a permanent establishment operating in that country.

Physical nexus with Australia

- 7.2.3 All of these concepts have an important element of physical or territorial nexus with Australia. In simple terms, the primary test for individual residents is that they physically reside in Australia. For companies the tests are that they are incorporated in Australia or carry on business in Australia and are centrally managed and controlled from Australia. Australian sourced income often includes income that is derived from a physical place in Australia and a non-resident business is considered to have a permanent establishment in Australia if it has a "fixed place of business" in Australia (in terms of both timing and geography).

Reliance on Form

- 7.2.4 In many instances, matters of form have been decisive even though the courts have said that source and residence are practical hard matters of fact. For example, source may be determined at the place where a contract was concluded, company residence possibly determined by the place where the board of directors meet, or the existence of a permanent establishment determined by whether or not a business activity is undertaken through a facility that is fixed in location.

Manipulation of form

- 7.2.5 Matters of form may prove difficult to establish or test or may be readily manipulated in an electronic commerce environment where business activity is highly flexible. For example, the technical requirements regarding place of contract can be altered according to how a web site is structured, board of director's meetings can be held in "cyberspace", and a facility such as a web site can be readily moved from location to location. This reliance on form in an Internet environment is creating a considerable degree of uncertainty for Internet businesses and tax administrations, as well as facilitating tax planning opportunities.

7.2.6 In the absence of an effective economic substance test, the reliance of legal jurisdictional concepts on physical or territorial location would also result in misallocation of taxable income (including dividends, interest and royalties), particularly as technology developments will increasingly allow considerable activity such as trading, marketing, ordering, purchasing, digital delivery and product development to be undertaken in a country without the need for a physical presence in that country. However, transfer pricing and other rules like the controlled foreign companies provisions may provide some redress in some cases.

Practical Jurisdiction

7.2.7 Practical jurisdiction is also very closely associated with physical proximity. A taxation administrator can exercise practical jurisdiction over a resident taxpayer in a country because the taxation administrator can bring sanctions to bear on a taxpayer who does not voluntarily comply with taxation obligations. Similarly, where the income of a non-resident is sourced within a country, tax administrators have practical jurisdiction because they can tax the income before it leaves the country.

7.2.8 Practical jurisdiction requires the existence of an entity, assets or income flows in the jurisdiction, against which a tax liability can be enforced and is thus also very closely associated with physical proximity. It is also premised on the effectiveness of regulatory and enforcement requirements such as the identification of the existence and nature of the taxpayer and business activities. The Internet presents challenges for practical jurisdiction because the mobility and potential anonymity of Internet based businesses gives them geographical independence. A business using an Internet site that is outside of Australia may have placed itself outside of the practical jurisdiction of the Australian Taxation Office, depending on what view is taken as to where the business is being conducted.

Particular Jurisdiction Issues

Source Rules

7.2.9 Australia's source rules are challenged by electronic commerce. Universal access to a web site, automation and high mobility mean that most electronic commerce activities may generate considerable revenue without necessarily being located in close physical proximity to the market and without significant use of any infrastructure anywhere. For highly mobile activities, (eg high value services), source rules based on location are more likely to facilitate tax planning.

7.2.10 The need to apply source rules to different types of income on a case by case factual approach will create considerable difficulties in an Internet environment with a large number and variety of interfaces, activities and modes of delivery. Some examples are discussed in the following paragraphs.

Income from the sale of goods or provision of professional services

7.2.11

When determining the source of income from the sale of goods or provision of professional service, a relevant factor (along with profit allocation and transfer pricing rules) is the application of contract law to Internet transactions, which can be readily manipulated for tax purposes. Some particular difficulties are:

- the application of contract law to Internet transactions requires an analysis of each web site that is doing business with an Australian customer, which will prove difficult;
- the extent to which courts, when applying source principles, would look through a web site to the real location of the seller, or beyond the contract to other factors is uncertain. The factual circumstances for applying source rules to Internet sales will often be complex and involve information that is not always available to the taxing jurisdiction;
- it is unclear whether and in what circumstances the location of a web site offshore would constitute a scheme with the dominant purpose of minimising taxation for the purposes of Part IVA; and
- Sections 38-43 (dealing with the calculation of the Australian sourced profit from business carried on partly in Australia and partly overseas) may be ineffective in providing an Australian source as the place of sale may be able to be structured so as to be outside Australia.

Share Trading Income

7.2.12

The Internet will also open up share trading to a wide range of resident individual and small business traders who could be difficult to locate, less likely to keep records and may be unprepared or unequipped to apply contract principles to determine where the deal was done for the purposes of determining source, and less likely to undertake apportionment of source calculations where necessary. A significant amount of Internet trading may occur "off market", where the existence of transactions and identities of parties to transactions will be more difficult to determine.

Global Collaborative Activities

7.2.13

The effective taxation of global collaborative activities will be critically dependent on agreed traditional principles for the allocation of income and expenses across jurisdictions. Generally, such allocation will involve looking at the relative value added by each component, according to factors such as functions, assets and risks.

7.2.14

The US have sought an international consensus in respect to global collaboration on the taxation of services, although the suggested basis for determining the place where the component services are performed appears quite narrow.

Permanent Establishments

- 7.2.15 Under Australia's double tax agreements, Internet business profits would generally be subject to the business profits article and taxable by the source country only to the extent they are attributable to a permanent establishment. As with source rules, the permanent establishment (PE) rules can be applied to Internet business, but may provide tax planning opportunities and could be difficult to apply in practice. A web site located on a server, that is fixed in time and location, and through which business is carried on may constitute a PE. However, the requirement for fixedness is easily circumvented by segregation and moving web sites. These factors and the automation of functions also raise difficulties with applying the general exclusion in double taxation agreements that preparatory and auxiliary activities do not by themselves amount to a permanent establishment. The attribution of income to such a permanent establishment would, however, required a consideration of economic substance, but there is no internationally agreed approach on how attribution of income to a web site should be done.
- 7.2.16 However, problems with determining whether a non-resident has an Australian PE may not even arise if the removal of present bandwidth limitations allows all or most of the functions of an Internet business to be located in an offshore web site, either in the country of residence or a low tax jurisdiction, and service Australia direct. (A similar situation will arise in respect to the provision of independent personal services.) This may result in a net loss of revenue from PEs. Thus, measures to catch web sites as PEs may only provide revenue benefit in the short term and could force them offshore in the long term.
- 7.2.17 The Internet provides an environment where automated functions, by their very nature, may be able to undertake a significant amount of business activity in a source jurisdiction with little or no physical activity or participation in the economic life in any jurisdiction anywhere. This highlights the inappropriateness in an Internet environment of allocating taxing rights on a concept based on geographical fixedness.

Withholding Tax

- 7.2.18 With respect to withholding tax, the Internet will open up borrowing facilities to a large number of non-business domestic consumers to whom a tax deduction for the payment may not be available. In many instances, payments by individual consumers of royalties and interest will involve a large number of low value transactions in respect of which withholding obligations may prove difficult to enforce. This will be particularly so given the potential loss of third party institutional intermediaries that traditionally have served as collection points. The Internet will also provide facilities such as offshore web sites and offshore banks to allow users to undertake their transactions offshore.

Characterisation of Payments

7.2.19 The variety and hybrid nature of Internet products and modes of delivery make the tax classification of payments for digital products particularly difficult, providing uncertainty for Internet businesses and tax administration and considerable potential for tax planning. A wide application of the royalties definition would protect Australia's revenue base, but could catch a large number of small value transactions. It may also be argued that minor differences in the nature or mode of delivery of a product could lead to significantly different tax results, although such differences could be argued to involve considerable differences in substance (e.g., physical book vs. digital book).

Central Management and Control

7.2.20 There is sufficient authority to indicate that it is likely that the courts will be able to modify the application of the central management and control test to the Internet environment, eg., video conferences. However, applying a factual test to a course of business or trading on the Internet is likely to prove difficult, given the wide variety of business types and modes of operation that could arise on the Internet.

7.2.21 The instantaneous and global facilities provided by the Internet are expected to allow residents to more easily influence the operations of their offshore subsidiaries (which would include tax haven entities). There is no clear guidance as to where such a business would be regarded as being really carried on. Moreover, there would be difficulties in applying the concept of central management and control. The possibly undetectable, anonymous or unverifiable nature of these communications could make it even more difficult for the ATO to obtain evidence of these activities should a taxpayer wish to conceal or disguise them.

Controlled Foreign Corporations (CFCs)

7.2.22 Many digital products can be expected to fall within the current broad definition of royalties, and may escape the controlled foreign corporation (CFC) provisions if they satisfy the exclusory tests for tainted royalty income and the arrangements do not fall foul of the anti-avoidance provisions. Given the flexible nature of digital products and the scope for decentralised product development, some taxpayers may attempt to establish that a product was developed or substantially altered in the offshore company. (Even if treated as services income, digital products would only be caught under the CFC rules to the extent they are provided to Australian residents or non-resident PEs.)

7.2.23 The potential escalation in involvement in CFCs by individuals and small businesses may severely test the ATO's ability to enforce the CFC provisions. Use of the Internet to acquire shares or undertake controlling activities will also make it increasingly difficult to trace share holdings and levels of control.

7.2.24

The operation of the current central management and control test, CFC provisions, and general anti-avoidance provisions need to be examined to ensure Australian residents are not able to establish the appearance of an offshore Internet business to keep their Internet profits in low tax jurisdictions. These are typically non DTA (tax haven) countries, although it could include DTA countries which may be tempted to offer tax incentives to Internet businesses, and seek to protect those incentives through tax sparing.

Identification

7.3.1

Internet electronic commerce presents challenges for identification. The weak links that currently exist between activities on the Internet and the physical parties associated with that Internet presence mean that it is not possible to accurately identify the legal entity associated with an Internet site.

Weak Links: The Heaven's Gate Cult

In 1997, members of the Heaven's Gate Cult committed mass suicide in California.

It was revealed that this cult operated an Internet site and United States investigators accessed the site as part of their investigations.

The investigators used a number of technological tools to identify the person registered as the operator of the site.

Upon further investigation the name of the operator proved to be false because there are no proof of identity requirements to operate an Internet site⁶⁰.

Thus the link between the Internet site and the real world was broken.

7.3.2

In 15% of the cases selected for audit as part of this ATO electronic commerce project, the physical taxpayer could not be identified from the Internet site.

Weak Links: The Hole in the Ground

During the project a number of audits of Internet businesses were conducted to gain practical experience with the issues that might arise in enforcing the tax law in an electronic commerce environment.

In one case, auditors found a link between an Internet site to a post office box. Inquiries through Australia Post revealed the physical address of the person owning the post office box. Upon arriving at the address, the auditors found that it was a hole in the ground at an abandoned building site.

- 7.3.3 A key issue will be the extent to which the Internet will allow business activities to be undetectable or anonymous, so that the key taxing and auditing requirements of the existence and identity of persons or transactions cannot be determined. A high level of non-detection could lead to tax evasion in a highly competitive global business environment where businesses may be forced to adopt non-compliance facilities to compete with other businesses, thus exacerbating non-compliance. The migration of businesses to the Internet may be partially driven by the tax avoidance and evasion opportunities it presents.
- 7.3.4 There is currently no facility to determine the ownership of existing web sites. Monitoring Internet sites is currently of little assistance because they may not leave a trail to the ultimate owners, who could use bogus names or complex networks to hide the existence or location of web sites. Many web sites will exist on offshore servers which will make monitoring even more difficult. Even where monitoring is possible, encryption will make it virtually impossible to determine the nature of Internet activity and business transactions will not be identifiable. It is clear that it will be impossible to detect or determine Internet activity without some form of regulation.
- 7.3.5 In addition to weak links between the electronic commerce world and the physical world, many of the emerging electronic payment systems, such as electronic cash and stored value cards are being designed to operate like cash in that their use cannot be associated with a particular operator. This functionality weakens the ability to identify a taxpayer and to correctly assess their liability for direct or indirect taxation.
- 7.3.6 Further, to the extent that these systems exceed the capabilities of physical cash, by allowing very large denominations to be held in a bearer fashion and for large cash transactions to be conducted between remote parties, these systems could exacerbate the challenges associated with the physical cash economy.

Information

- 7.4.1 A third fundamental requirement of a taxation system is information about whatever it is that is the subject of taxation and a set of rules by which to assess liability. Usually the information required is about some measure of financial value that is subject to taxation, but this is merely convention.
- 7.4.2 In the physical world, the information to support the existing tax base is found in the financial records of a taxpayer or other entities like banks and asset registries and, at the lowest level, the source documents such as receipts and invoices.
- 7.4.3 Such source documents are considered useful because they indicate the date and value of the transaction and reliable because they cannot easily be altered without leaving evidence of such alteration.
- 7.4.4 Electronic records, such as those that might be produced in an electronic commerce environment are not so robust. Electronic records can be altered without trace so that the reliability of these records may be more questionable. Further, an encrypted electronic record will not reveal any information about the value of a transaction.

- 7.4.5 Finally there must be a way to link the information about the transaction to a taxpayer. In the physical world this can be achieved by examining documents for names, addresses, Australian company numbers and signatures and evidence of asset ownership, for example. This linking or tracing functionality forms the audit trail. In the electronic commerce environment, the weaknesses in the identity arrangements and some of the technological characteristics of the Internet mean that the ability to link transactional information to a taxpayer is also challenged.
- 7.4.6 In response to the need for information for effective tax administration, a regime of information storage and access has been developed. This regime includes record keeping requirements such as those in s262A of the *Income Tax Assessment Act (1936)* (ITAA) and information gathering powers such as those in ss. 263, 264 and 264A of the ITAA. Broadly comparable powers exist in other taxation acts administered by the Commissioner of Taxation.
- 7.4.7 This regime of information storage and access was developed to deal with physical records that are not easily transmittable. The underlying presumptions are that the records will need to be brought into existence in close physical proximity to the taxpayer and that the records will be stored near the taxpayer. While section 264A does reflect the possibility that records might be held outside of Australia, this section itself envisages that the Commissioner of Taxation may not always have access to information required to properly administer the taxation laws.
- 7.4.8 Electronic commerce challenges the underlying presumptions that records of Australian taxpayers will be created and held within Australia. To the extent that records are held outside of Australia, and are not readily accessible, the effectiveness of tax administration is reduced.

Collection Mechanisms

- 7.5.1 The fourth fundamental of tax administration is to have efficient collection mechanisms. Efficient collection mechanisms are under challenge because the traditional leverage points, the “middlemen” in the distribution chain from producer to consumer, are under threat due an effect known as “disintermediation”.
- 7.5.2 Basically, disintermediation is the connecting of producers and consumers directly, cutting out the middlemen such as wholesalers, distributors and retailers.

The Concept of Leverage

- 7.5.3 Some of the most efficient collection mechanisms are those which make use of a leverage point. A common example is the group tax arrangements whereby employers remit P.A.Y.E. tax instalment deductions on behalf of employees. Under these arrangements the tax payable by more than 6 million employees can substantially be collected by concentrating collection activities on a much smaller number of employers. By eliminating “middlemen”, tax collection efficiency is reduced.

7.5.4

An example which illustrates some of the points in the preceding three sections on identity, information and collection follows:

Physically, for example, a web site is simply a set of programs and data files sitting on a computer somewhere. With proper planning, it can be moved to a new location, possibly in another country, in a matter of hours. The actual hardware is cheap enough that it can simply be discarded. Leased hardware is even less expensive to “dispose” of. Physical proximity of a web site, an internet ‘shop’ is not assured.

The “stock on hand” which in a conventional business would be represented by stock physically sitting on shelves, may be a series of data files periodically (and possibly automatically) updated from other computer sites; with vertical integration of a business with its suppliers, a business will have much less need to keep huge amounts of stock on hand, and will either order from its suppliers as and when needed⁸¹, or forward instructions to delivery agents. Stock is of course a leviable asset of creditors in the case of a conventional business.

Customer orders and payments can be handled by a backend database system, with payments (e-cash or credit card details) being channelled somewhere entirely unconnected with other parts of the site. This disaggregation functionality would allow an internet business to be divided into a number of small functions which, of themselves, would probably only be considered auxiliary or preparatory in any particular jurisdiction but which, when linked via the internet mean that there is a viable business that is not subject to tax in any jurisdiction.

Particular Current Issues

7.6.1

The current state of Internet electronic commerce, particularly the enabling technologies, presents a number of issues for tax compliance.

Disintermediation

7.6.2

The term “disintermediation refers to one of the likely consequences of business conducted electronically The term is discussed in the following terms by Richardson and White:

In the space that nowadays separates the end-consumer from the ultimate producer of virtually every product flourish a raft of value adding intermediaries: wholesalers, brokers, agents, consolidators, advisers, franchisers, multilevel marketers, and retailers.

The power of the Internet to link consumers directly with producers can be lethal to this midriff bulge of “middlemen”, whose sales, royalties, commissions, profits, and personal incomes figure prominently in the composition of several of Australia’s key tax bases. In the management literature, this process has been called “disintermediation”.⁸²

7.6.3 The enforcement implications of disintermediation are significant. The practicalities of enforcing sales tax and customs duty differ considerably between the case of a container load of goods imported via a registered importer / wholesaler on the one hand, and several thousand end users who have ordered goods from overseas websites because of cheaper prices on the other.

Sales Tax Issues

7.6.4 “Mail order” type marketing arrangements have been available for many years but have not presented a significant threat to the Wholesale Sales Tax (WST) base in this country due to their limited market penetration. However, while it will not remove all of the inhibitors affecting mail order marketing, the emergence of the internet will dramatically reduce the relative market advantages previously enjoyed by vendors operating from physical sites. The internet has effectively removed the need for marketing distribution chains, physical stock inventories and any on-site presence. Internet buyers are now able to browse on screen through a virtually unlimited range of goods and buy directly from the producer. Internet vendors are now able to provide layers of technical and other product support information on command and the on-line ordering and payment facilities have streamlined delivery times.

7.6.5 Given the relatively low value of most individual transactions, a wide range of goods is able to be imported into Australia tax and duty free under the concessions available for goods of insubstantial or negligible value. It is already clear that the tax and duty exclusive prices of many goods offered on the internet are lower than local prices and anecdotal evidence suggests a growth in internet sales of a range of easily transportable goods (eg, music CD’s, books, clothing, jewellery, cosmetics and sporting goods).⁸³

7.6.6 Currently, the buying interface over the internet is discouraging to many consumers. It is associated with “computers” and there are concerns around the perceived dangers of releasing credit card details etc over the internet. However, with the anticipated advent of TV based interfaces within the next few years, coupled with more secure payment arrangements and the facility for “point and click” spending decisions using electronic money, commentators are forecasting an exponential growth in sales over the internet.

7.6.7 The Australian Customs Service (ACS) have recognised the risk and have conducted an initial survey of both the notional “cost to the revenue” of goods entered under the relevant concessions, and the estimated leakage of revenue resulting from goods currently being entered incorrectly tax and duty free under these provisions. The results of that initial survey support the need for a broader more detailed examination of the issues.

Middlemen as reporting and collection agents

7.6.8 Middlemen such as importers / distributors can be useful tax collection and data gathering points for a variety of taxes. If their role is reduced, then the ability to cross-check information declared is considerably reduced. This is likely to impact on tax collections⁸⁴.

Mobility of businesses

7.6.9

A high level of mobility for Internet businesses, highly skilled labour and capital, particularly with the growing automation of functions, means that the implicit presumption in Australian taxation law that businesses are geographically fixed, at least for the short term, is under challenge.

A mobile business

ATO project staff observed the following series of events during the research phase of the project:

An Internet business offering banking and finance services was approached by the Reserve Bank of Australia (RBA) about their status in Australia.

The businesses' Internet server was based in Queensland.

After apparently failing to come to an agreement with the RBA, the business shifted its server to San Francisco and continues to offer services in Australia.

Offshore Financial Systems

7.6.10

Access to offshore financial systems and sources of funds will offer benefits for business but may create difficulties for tax administration, with financial audit trails leading offshore outside the jurisdiction of the ATO and the potential for this weakening of access to audit trails being exploited for tax planning purposes.

Digitisation

7.6.11

One of the technological changes that is facilitating disintermediation is digitisation, the ability to convert a physical good, such as a book, into a digital service such as an electronic, downloadable document.

Sales Tax Issues

7.6.12

Currently, music, films, packaged computer software and a range of other products are sold in the form of "goods" and are taxed in whole or in part under the WST. The technology already exists to allow consumers to directly download music and other "digitised information" onto blank CD's in their own homes. It is envisaged that the future music and film market may evolve to the point where no "goods" actually come into existence, with consumers instead buying directly through the internet on a "pay per performance" basis. This scenario would see a significant erosion of the current WST base as a result of the effective replacement of "goods" with "services", and from the reduced demand for associated products such as compact disc players and video cassette players etc.

- 7.6.13 These developments will also impact on the design of goods providing the interface with these services and place further pressure on current “classification boundaries” under the WST. For instance, televisions and other domestic audio visual equipment currently attract sales tax at a higher rate than computers. It seems likely that the differentiation of such goods will become more and more blurred with the probable emergence of new integrated equipment that performs all of these functions and more.
- 7.6.14 The advent of digital technology is already impacting the WST base with new products emerging that perform similar functions to existing products but use quite different processes (eg “digital cameras”). While this is more a “new technology” issue than an “electronic commerce issue”, these developments place more pressure on the current classification boundaries of the WST as competitive advantages will flow from the potential for different tax treatment of goods performing essentially the same function.
- 7.6.15 However, the broader issue is the exemption from sales tax currently available for “tax advantaged computer programs” (“TACPs”) incorporated into goods. TACP’s are becoming features of more and more goods as technology advances, and the value of the TACP’s relative to the overall value of the goods in which they are incorporated is trending upwards. Again, the WST base is under threat. Previous legislative attempts to incorporate the value of the TACP into the taxable value of the host goods have failed, apparently because of the ability of at least some vendors to download the “software” onto the goods at a point subsequent to the taxable dealing with the actual goods themselves. The emergence of the Internet will only increase the potential for such downloads direct into consumer households.

Changing Character of Income

- 7.6.16 A growth in digital products and delivery mechanisms will allow businesses to integrate consumer deliverables, blurring the distinction between goods, services and rights of use (see also paragraph 7.2.19).

Changed Business Structures

- 7.6.17 Electronic commerce allows a business to segregate non-physical activities, such as design and computer testing within a business producing physical goods and to locate these functions in a different jurisdiction.

7.6.18 **Increased numbers of taxpayers engaged in international trade**
Richardson and White make some observations about the attractiveness on business on the WWW:

“...even the smallest of Australian firms may ... sell to the provincial, national, regional and world customer bases...

this can be achieved at far lower unit costs than for conventional commerce... ATM and EFTPOS transactions are “one-third the cost of across-the-counter service and ...

a Website (unlike a retail store) is open for business ... 24 hours a day, seven days a week.”

7.6.19 Noting however that:

“...Australian firms may end up facing heightened competition for sales to their own consumer population.”

7.6.20 As electronic commerce drastically lowers the capital costs required to engage in international trade it is likely to lead to a large increase in the number of small businesses and even sole traders engaged in international business. As international tax law is complex it is likely that the level of accidental non compliance with the tax laws will rise.

Transfer Pricing

7.6.21 The Internet currently does not present new or different problems for transfer pricing (or for the attribution of income and expenses to PEs) other than the need for a common approach to determining the value added by an Internet site. However, the growth of the Internet is making some of the more difficult transfer pricing problems more common. Key issues are expected to be:

- tax administrations will have to evaluate the effects of intangibles (such as production technologies and marketing databases) more often (as well as considering their effect on the characterisation of payments);
- the lack of reliable data will make the transactional approach and the establishment of comparability more difficult to apply;
- difficulties in obtaining pertinent data located outside a jurisdiction (particularly where a tax haven is involved);
- difficulties in identifying that the transaction occurred between associated parties;
- increased difficulties with valuing the contributions of related parties or parts of the same entity where businesses become highly integrated; and
- increasing number of cases highlighting the differing tax treatment between PEs and subsidiaries carrying on economically similar activities.

7.6.22

These factors are expected to see an increase in the number and complexity of transfer pricing cases. The speed, frequency, anonymity and integration of exchanges over the Internet will place great pressure on the transactional and comparability principles. It may become more difficult for tax administrations to identify, trace and quantify cross-border transactions. This will particularly be the case for products traditionally involving the transfer of physical goods which can now be digitised, and those which involve the transfer of information. This could lead to increased difficulty in applying traditional transactional methods and result in a greater use of the profit split and profit comparison methods

7.6.23

Increase in Low Value Cross Border Transactions

In addition to a potential increase in the number of complex cases involving issues like transfer pricing, the ATO may also experience some difficulty in dealing with a substantial increase in the numbers of low value, cross border transactions.

7.6.24

Future Developments

As computer, communications, internet, and electronic cash technologies develop, to allow for fast, simple, ubiquitous access to the Internet through developments like Web T.V., the magnitude of the current issues is expected to increase in proportion with the growth in electronic commerce.

Internet Television

Microsoft announced that the next releases of Microsoft Windows and Windows NT operating systems will enable PCs to receive video and digital data from existing satellite, cable and terrestrial broadcast sources. With a TV tuner card (plus any other options a user decides to purchase), a PC can actually receive broadcast signals, such as television and radio. This means TV broadcasters can transmit digital TV signals. With the new system, which allows programming to contain both data and video, interactive television and on-line shopping can become a reality. Brian J. Connors, vice president of IBM's consumer division, said⁸⁵ "Imagine TV sports events where the viewer can receive instantly updated statistics and information about their favorite [sic] players, or game shows where viewers can play along with the contestants on TV". It has the potential to bring the majority of consumers who are not online today, online by simplifying access to the internet.

Currently, most individual consumers access the Internet via ISPs over a telephone line. With Microsoft's new system, it is possible to use media such as satellite, cable or television broadcast networks. Instead of being restricted to a 33.6 kbps modem, the new system employs a 30 Mbps satellite channel (30Mbps is 1000 times faster than 30kbps). Microsoft expects the new system to be available to the public by the end of 1997.

7.6.25 Based on even conservative estimates of electronic commerce growth in section 5, the magnitude of the increased challenges could be over 1000%.

Need for International Co-operation

7.7.1 As electronic commerce is not constrained by geographic boundaries, many purely domestic responses are likely to be partially effective at best, and totally ineffective at worst. There will be a greater need than ever for international cooperation.

7.7.2 Domestic identification arrangements will be totally ineffective where taxpayers engaged in electronic commerce shift their electronic commerce trading entities to a different jurisdiction. If that other jurisdiction has rigorous identification arrangements for businesses and there is a treaty or some other co-operative instrument by which that other jurisdiction can convey information to Australia then there is some possibility that the identification fundamental of a tax system will be preserved.

7.7.3 The information gathering powers and record keeping arrangements in the ITAA will be less effective where the electronic commerce trading entity operates outside of Australian jurisdiction. The operation of s262A (general record keeping) of the ITAA should be analysed to ensure its effectiveness in relation to Internet businesses.

7.7.4 Once again, international co-operation, in the form of a treaty or other instrument might help to preserve the ATO's ability to gather information where the other party or parties to the treaty can provide the necessary information.

7.7.5 In relation to collections, the elimination of collection points, through the effects of disintermediation may mean that, if Governments intend to rely on existing bases of taxation, then co-operative approaches to collection may be required.

7.7.6 To the extent that Governments do not have undisputed practical jurisdiction there is likely to be loss of revenue.

7.7.7 Double Taxation Agreements (DTAs) are one mechanism by which Australia could obtain information from foreign jurisdictions, however DTAs, as currently structured, would not provide direct support for the collection of taxes or for reliable identification of taxpayers where the other jurisdiction does not have rigorous taxpayer identification arrangements.

Non Co-operative Parties

- 7.7.8 The effectiveness of international cooperation depends on broad-based international support. However some countries like tax havens are likely to stand apart from such arrangements in order to attract Internet business.
- 7.7.9 Internationally agreed and co-ordinated responses are likely to be required to deal with expected non-co-operative parties such as tax havens.
- 7.7.10 A consideration of the full implications of any particular form of international co-operation will be required before reaching a final position.

Current Considerations

- 7.7.11 The taxation issues are being considered in the OECD but the newness and complexity of the issues to many OECD countries and the inherent nature of OECD meeting procedures have meant that progress has been slower than Australia would like. A key concern is the U.S. approach that the communications revolution will see traditional source principles lose their significance and residence based taxation step in and take their place. Our analysis indicates that source and residency principles are equally at risk.

Summary of the Impact on Current Taxes⁸⁶

7.8.1

The purpose of this section is to provide a brief ‘overview’ type summary of impacts on current taxes, together with cross-references to the areas where the impacts are discussed. The explanation and comments are necessarily brief and the references should be consulted for a fuller explanation. Many impacts at this stage cannot be foreseen with certainty owing to the nature of the interactions between tax laws and the Internet.

Income Tax and Tax Generally

Impact	Explanation	Reference
Jurisdiction	Geographical concepts of jurisdiction will erode.	Section 7
Jurisdiction [2]	Some important sources of wealth - intellectual property such as patents, copyright etc - have no necessary geographical boundaries and the wealth they represent can be effectively utilised from either onshore or offshore.	Section 7
Identity	Identity, a cornerstone of liability for many taxes, income tax in particular, is weak on the Internet, and the infrastructure (culture, business practices and systems) necessary to support it will take quite some time to evolve.	Section 7
Identity [2]	It is possible, and perhaps probable, that many larger commercial transactions requiring higher standards of identity than currently exist on the Internet can be satisfied by “Trusted Third Parties” whose records are unlikely to be easily accessed by tax authorities. See also “Tax Havens” below.	Section 8
Information gathering and assessment	Practical information gathering and assessment is weakened because income sources of many taxpayers are offshore. While assistance from the countries concerned may be useful, in many cases there is either no treaty or treaty methods of information exchange are slow and cumbersome.	Section 7
Information gathering and assessment [2]	Remote control of income producing activities is easier, and detection and assembly of evidence concerning the people exercising the control and deriving benefits is harder.	Section 8
International allocative tax rules	Allocative tax rules between nations on the economic fruits of the Internet will take a considerable time to clarify: for example, international tax treaties relating to issues such as permanent establishments.	Section 6

Impact	Explanation	Reference
International enforcement tax rules	Enforcement tax rules between nations relating to the Internet may be clarified earlier subject to development (feasible and cost-effective) of an appropriate infrastructure.	Section 6
Capital requirements	Capital requirements to set up international marketing, sales and support on the Internet are significantly less than to engage in conventional overseas business.	Section 3
Administration costs	Costs of administering the tax law effectively are increased when more businesses trade internationally	
Disintermediation	Reduces tax collections from permanent establishments and foreign subsidiaries	Section 7
New payment technologies, particularly electronic cash	Effects on income tax, sales tax and FBT: income paid this way may have the cash-like property of being difficult to trace, and the remote payment potential of certain other instruments, such as credit cards or cheques.	Section 4
Offshore tax avoidance schemes	Growth: participation costs reduced and aware and ease of access increased	OMP
Jurisdiction shopping	Growth of jurisdiction shopping, or the establishment of websites in low tax jurisdictions, due to tax and other cost considerations; eg, bandwidth costs for tax havens may be lower than bandwidth costs operating from Australia.	OMP
Income rules: source/residence	Neither source nor residence alone is satisfactory as a basis of income tax liability for Internet transactions.	Section 7
Tax havens	Enterprising tax havens may become centres of the following kinds of economic activity: commercial web servers, and more generally, telecommunications; financial centres; and “trusted third parties” for commercial arrangements between parties who may prefer to use anonymous payment technologies.	Sections 7 and 8
Source rules relating to sales of goods / provision of services on the Internet	Rules difficult to apply and enforce; evidentiary difficulties	Section 7
Share trading income on the Internet	Rules difficult to apply and enforce; evidentiary difficulties	Section 7
Withholding tax	Rules difficult to apply and enforce; evidentiary difficulties	Section 7
Central management and control	Rules difficult to apply and enforce; evidentiary difficulties	Section 7
Controlled Foreign Corporations (CFCs)	Rules difficult to apply and enforce; evidentiary difficulties	Section 7
Transfer Pricing	Rules difficult to apply and enforce; evidentiary difficulties	Section 7

Impact	Explanation	Reference
Websites	Websites represent a new way of doing business: there will be impacts on compliance strategies.	Section 3
Audit Trails	Many third parties - banks, credit card companies and telecommunication providers - capable of assisting tax compliance are overseas and consequently a high degree of international cooperation will be required. The practical difficulties of obtaining cooperation and implementing effective systems to support it will be large.	Section 8
Legal infrastructure	The lack of a legal infrastructure to support electronic section 8 commerce may be a serious impediment to larger transactions but not necessarily to smaller ones	Section 8
Impacts across industries	Variable; some industries (eg Travel Industry (where audit trails cross and re-cross) have better audit trails than others (eg. SMEs in the Computer Software, Retail Goods and several other Industries)	OMP
“Whales and minnows”	The thesis of OMP in brief, is that commercial “transactional spaces” on the Internet will be dominated by large corporations. This finding has considerable implications, in that as OMP points out, a more focussed compliance effort is possible with a few large corporations (even if non-compliant) than many small ones. The ATO acknowledges this argument and its applicability and utility in many (but not all) cases.	OMP
Restructuring as physical goods replaced, at least in part, by electronic services and transactions	Transformation of “goods intensive” industries into “service intensive” industries will raise important questions about the taxation of goods and services	OMP

Sales Tax

Impact	Explanation	Reference
Transformation of “goods” into “services”	Currently, music, films, packaged computer software and a range of other products are sold in the form of "goods" and are taxed in whole or in part under the WST. The technology already exists to allow consumers to directly download music and other "digitised information" onto blank CDs in their own homes. This scenario would see a significant erosion of the current WST base as a result of the effective replacement of "goods" with "services".	Sales Tax
Impact of digital technology on the WST base generally	The advent of digital technology is already impacting the WST base with new products emerging that perform similar functions to existing products but use quite different processes (eg "digital cameras" which create images but do not use a photographic process). These developments place more pressure on the current classification boundaries of the WST.	Sales Tax

Compliance Issues

8.1.1 Electronic commerce involves both compliance challenges and compliance opportunities. This section explores them, under the following headings:

- Identity;
- Digital Signatures and Public Key Authentication Framework⁸⁷;
- Audit Trails;
- Data Integrity;
- Data Access;
- Leverage;
- Programmable compliance agents and other useful software (“taxbots”); and
- A brief survey of legislation relating to Electronic Commerce

8.1.2 Payment systems, and compliance issues related to such systems, are discussed in section 4.

Identity

Introduction

8.2.1 The fundamentals of tax law; jurisdiction, identity, information and collection, are discussed in section 7. Income tax in particular, relies on the ability to group all income-producing transactions undertaken by an individual or other entity in a given accounting period (usually a year) and ascribe them to that individual for tax purposes. It may be recalled that one key environmental difference between the Internet and the “real” world is the weakness of identity on the Internet, where the assumption of fictitious, multiple identities is by no means difficult.

8.2.2 Another significant issue relates to the basic business unit of the Internet, a website. Websites are actually a collection of computer programs and relevant data. From an *owner’s* perspective, they are powerful, flexible, configurable at a distance over the Internet, and can be left to run unattended. From the perspective of an *investigator*, these characteristics can significantly increase the evidentiary ‘distance’ between the economic activity on the one hand and the controller and the beneficiaries on the other.

8.2.3 The ATO has therefore explored, in conjunction with the CSIRO, what means are available to ensure that activity which gives rise to assessable income, or other taxable transactions (“commercial activity”) is properly accounted for.

IP numbers and regulation of commercial Internet hosts

8.2.4 At present, as explained in section 3 the major identity authenticator on the Internet is the IP number. Without an IP number a person cannot connect to the Internet and the IP number is used in many indexes and databases to determine location, identity, names and addresses. Information on the Internet is sent across the network from one IP number to another. IP numbers are therefore a key potential leverage point.

8.2.5 Currently, the integrity and reliability of links between IP numbers and their owners - those who use them for commercial purposes - is questionable⁸⁸. Registers of IP numbers are often out of date. In addition, it is quite easy to obtain IP numbers from overseas, outside the jurisdiction of Australian authorities.

8.2.6 Accordingly the ATO sees merit in making the allocation of IP numbers a more accountable process. In discussions between the ATO and CSIRO two basic options have been raised to ensure greater accountability for commercial use of IP numbers. They are:

- the maintenance of a public register to record the issue or transfer of IP numbers to be used commercially, with details such name, business address, ACN number, etc; and
- the licensing of commercial websites and of organisations that operate or host websites⁸⁹.

8.2.7 While the ATO's initial preference was for the first option, CSIRO's advice was, in summary, that the second option was currently more feasible as a matter of implementation. The practical difference between the two options is not that great. *The licensing is intended to do no more than ensure neutrality with "on the street" business*, and the compliance costs are low.

International Cooperation

8.2.8 It is also proposed to seek international cooperation on this issue, to ensure that businesses operating through a website and with a liability to Australian tax cannot avoid that liability by hosting the website offshore.

Digital Signatures and Public Key Authentication Framework

8.3.1 Signatures can serve a range of purposes, including: *adoption* ("By signing this, I acknowledge responsibility for the contents of this document"), and *authentication*⁹⁰ ("This is Fred's writing"). Inability to implement these functions on the Internet would present serious stumbling blocks both to commerce and taxation.

8.3.2 Technology has been developed to mimic conventional signatures for electronic documents. It uses the so-called public key / private key encryption technique. One popular (and free) implementation of it, available for most kinds of popular operating systems (DOS, Windows, Mac, OS/2 etc) is "Pretty Good Privacy", or PGP. There are U.S. export controls on the U.S. version of PGP⁹¹, however there is an international version which provides comparable functionality.

8.3.3

PGP (and other public key / private key encryption schemes) address the issues of adoption and authentication, and a further one of *message security* (I don't want anyone but the intended recipient to be able to see this message). It works as follows:

How Public Key/Private Key Encryption Works

Every user has two keys, a public key and a private key. The keys take the form of several lines of text generated by the computer program using a special algorithm.

The public key is "published" on the Internet. If anyone knows my e-mail address on the Internet, they can discover my public key (if I've got one, of course)⁹². The private key is kept secret.

If I want to send a secure message (call this message *m*) to X, I look up X's public key on the Internet.

I encrypt *m* with X's *public* key. This transforms the "plaintext" message *m* to unintelligible gibberish, *m'*.

Only X can decrypt *m'* with her *private* key. No one else's private key will work.

If X is not a very trusting soul, and needs to feel reassured that the message is definitely from me, then I first "sign" *m* with my private key before encrypting the result with X's public key. X reverses these steps when she gets the signed and encrypted message, checking the enclosed signature against my public key to verify that it is from me.

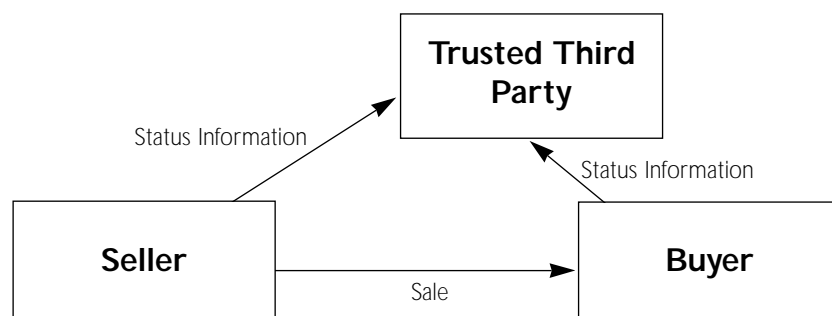
Security of the private key is of course critical in PGP. It is like a pin number for an ATM card.

8.3.4

Serious public key / private key encryption techniques also require certifying authorities, to guard against the assumption of fictitious identities. From a *commercial* perspective, authentication schemes are all being developed on the basis that transactions on the Internet (especially the higher dollar value ones) will require some means of identifying the parties to transactions (via the services of a 'trusted third party' [TTP]), and verifying that the substance of the transaction was identical for both parties. See the diagram for an example:

A transaction on the internet using a trusted third party.

While a buyer and seller may both be interested in a large commercial transaction, neither trusts the other. The role of a 'Trusted Third Party' [TTP] in this kind of situation may be both useful to buyer and seller and profitable to the TTP, where a TTP type business could possibly be carried on from a tax haven.



8.3.5

Any scheme ultimately accepted will need to satisfy the following properties:

- a world wide reach, because of the geographically independent nature of the Internet;
- be widely accepted by Internet users at large;
- for authentication to mean anything from a legal point of view, there will need to be some mechanism whereby identity checks are made whenever someone registers a key;
- Trusted third parties will have to prove their bona fides to prospective users, and, as suggested in the diagram, in many cases users may prefer trusted third parties who are not under the jurisdiction of taxation or other enforcement authorities; and
- products and services offered will have to be available across platforms and cost effective to be accepted.

8.3.6

Access to the records and logs kept on the authentication servers is likely to be closely guarded if the 'trusted third parties' are to retain their credibility, but limited and lawful access by the ATO under our existing access and information gathering powers, to combat money laundering and tax evasion, would be desirable.

Audit Trails

8.4.1

There are, in broad terms, two kinds of audit trails on the Internet:

- 'technical' audit trails; and
- financial audit trails.

Technical Audit Trails

8.4.2

Data packets on the Internet leave a transaction trail wherever they travel, and at most points in between. Transactions thus leave traces of themselves at many different points - including the sending point, the recipient point, and in the hub, server and router logs through which the transaction data packets proceed. The most obvious illustration of this is the 'bang path' one can view on the top of any eMail message, which is basically a series of digital postmarks which detail through which servers, hubs and hosts the message passed between the sender and the recipient.

Financial Audit Trails

8.4.3

While these need no explanation, it is worth pointing out that payment systems on the Internet are quite different from the more conventional ones and that the functional equivalent of accounted payment system intermediaries may not be subject to Australian jurisdiction.

8.4.4

Audit trails, both financial and technical, are covered extensively in the CSIRO report from the perspective of a wide range of possible transactions. CSIRO made a finding about audit trails in recommendation 3 of their report:

Only indicative information on commercial transactions is available from the network, definitive information must come from participants.

The concept of a transaction in Internet commerce is understood only by the actual participants in that transaction. [...] it will not be possible for organisations at intermediate points in the network (ISPs etc) to read the contents of packets.

The best that can be expected from intermediate points in the Internet is the 'indicative' information which is available from the packet headers. Such indicative information will be of the form:

- The computer with IP number A appears to receive a large amount of electronic mail;
- The computers with IP numbers C and D seem to communicate frequently;
- The computer with IP number E appears to receive a large number of credit card payments using the SET protocol;
- The computer with IP number F appears to receive a large number of Mondex payments.

Regulation of the Internet at the 'packet level' would involve the cooperation of Internet Access Providers, and would involve a high compliance cost. It would result in the production of large amounts of data, little of which would be useful.

Regulation required to capture transaction data must be applied to the 'end-points' of a transaction, ie. to the actual participants. End-points for this purpose need not be the actual tax payer, or the person transacting with the tax payer, but also includes ISPs and Site Providers who act on behalf of the participants in a transaction.

8.4.5

Secure socket layer (SSL) transactions, which occur through port 443, are an example of financial transactions which can be detected by running pattern-matching scripts through log files: in general, any financial transaction will require security, verification, some form of authentication, and the like. This being the case, packet headers involved in those transactions will have distinguishing characteristics not applicable to the run of the mill data packets which travel across the Internet. However, as the CSIRO report indicates, it would not be practicable to seek to examine these in the generality of cases. Where fraud or serious evasion may be involved, a different conclusion may be reached.

8.4.6 Most transactions will also be mirrored in a number of other locations. For financial or commercial transactions one could expect to find some sort of mirroring transaction on:

- the computer system and paper based records of the commerce site which made the sale. Invoices and delivery dockets would need to be generated prior to physical delivery for example;
- the computer systems and accounting of product delivery services or insurance companies which were engaged to deliver or insure prior to delivery goods on a retail sale;
- the digital invoices and/or paper documentation received by the recipient of the goods and services;
- in many cases transactions may need to be verified by signature and through a public key authentication scheme. In such cases, there would be mirroring authentication transactions on the authentication server; and
- the computer systems and accounting of the bank, credit provider or financial institution which 'authorised' the transaction.

8.4.7 For the reasons discussed in the next section, the existence of these records may not provide adequate audit trails in many cases.

Data Integrity

8.5.1 The basic issue concerning data integrity may be expressed simply. On the Internet, records of financial and commercial transactions are created in electronic form. Importantly, the original, *authentic* records of transactions are created in this form, with printed copies being produced for convenience. It is much easier to alter electronic records without leaving evidence of the alteration than paper-based records. While the maintenance of records in electronic form is by no means a new phenomenon, they have been, up to the present time, largely linked to conventional businesses with a tangible, geographical presence, whereas:

- website businesses (and records) may be readily relocatable in a matter of hours; and
- other parties, such as sellers (a U.S. website) and financiers (Visa or Mastercard), upon whom cross-checking depends for conventional audit purposes, may be outside the jurisdiction, their records unavailable for inspection.

8.5.2 Certain "indirect" audit techniques used in suspected fraud or evasion cases, which rely on determining income on the basis of spending, become difficult to apply, as records of spending may simply be mailed (or e-mailed) directly to the taxpayer's home from overseas, thus making their detection difficult.

8.5.3 Techniques are available to ensure the integrity of electronic data. These techniques are outlined in the CSIRO report and are the subject of a specific recommendation which has been discussed by CSIRO and the ATO. Before discussing that recommendation, it is necessary to discuss the concept of *message digests*.

Message Digests

- 8.5.4 According to the CSIRO report⁹³:
- A message digest is an explicit method (algorithm) which is applied to a block of data of any size and produces a small fixed size result. The result is typically 128 to 256 bits, depending on which message digest system is used. It has the property that it is impossible, as a practical matter, to modify the block of data in any way (including producing entirely new data) and still produce the same result.
- So the message digest of some data is a completely secure handle for that data. No other data can be presented which will reproduce the same message digest.
- 8.5.5 The significance of message digests may be illustrated by an example. Transaction records of a particular accounting period are input to a program and a message digest produced. The message digest is then filed with the ATO. The message digest says nothing about the data which produces it. Used this way, message digests can provide an important safeguard against hindsight, against the temptation to alter records because of financial considerations or an impending audit.
- 8.5.6 This method also handles amendments to data. Suppose, for example, that a transaction which occurs after the end of an accounting period, and after the message digest has been produced, requires a revision of the records for that period. An edit script is produced⁹⁴, setting out the amendments required to the original data, and a message digest of that script produced and filed in the same way as the previous one.
- 8.5.7 Summarised, CSIRO's recommendation 4 states that "The ATO should collect and hold Internet-sourced information", essentially because electronic data is readily alterable. The recommendation makes reference to two options: that the records be filed with a third party, and that the records be filed with the ATO itself. This is stated to be feasible because of the low costs of data transmission and storage. CSIRO cautions that "Whilst this approach is technically feasible, it may drive Webshops off-shore to jurisdictions where audit trail reporting is less stringent, in which case both the ATO and the overall economy will lose revenue. Consequently such an approach should not be contemplated unilaterally."
- 8.5.8 Having regard to the complexity of managing significant numbers of large datasets, and also in the light of CSIRO's caution, the ATO prefers the message digest approach discussed above as a more cautious, and feasible, approach to the critical issue of data integrity. The ATO will also canvass this approach internationally and seek public input both on this proposal and possible alternatives.

Data Access

- 8.6.1 Only very simple tax systems - such as, for example, a toll exacting a fixed levy from each user - can function without requiring information from either the taxpayer or a third party on his or her behalf. Complex tax systems, where liability may depend on a very large range of factors, often require a considerable amount of information from the taxpayer or third parties to enable an assessment to be made. This section discusses the issues involved in access to assessment-related information in the Internet context.
- 8.6.2 Consider a particular type of business - a restaurant. If a particular restaurant owner, in disregard of the law, declined to keep accounts or furnish tax returns, it would be possible by observation of a variety of external indicators to make a default tax assessment. The inputs to such a calculation might include the location of the restaurant, the size, number of tables, patron turnover times (to derive the estimated number of patrons in an evening), the menu, staff employed, and so on.
- 8.6.3 By contrast, a commercial website fails to provide anywhere near the same wealth of observable indicators from which to derive a measure of the income it earns, and without access to the accounting data, it would be difficult or impossible to derive an estimate of income earned in any given period⁹⁵. One key point, for example, is that it may be difficult to obtain any evidence directly from the website of the *scale* of the business, as would be possible in visiting either a department store on one hand, or a corner shop on the other. Another key point is that what may be termed the “evidentiary distance” (see 8.2.2) to an owner with the ability to explain may be greater.
- 8.6.4 Current income tax law provides a number of methods of accessing information required to make an assessment, however the basic ones are (apart from lodgement of tax returns):
- requirement to keep records [s 262A]
 - access to premises and inspection of records; [s 263] and
 - provision of information; [s 264, 264A]
- 8.6.5 It seemed to us that rather than seek to undertake a very detailed examination of the current law, particularly in the light of our resourcing limitations, and when there was little or no experience on its application in the relevant factual context, we should make a general recommendation embodying principles of both equity and neutrality: namely, that the principles underlying section 263, 264 and 264A (and other tax assessment Acts) should:
- as far as possible be applied to access, inspection of records, and provision of information in the Internet environment; and
 - use the processes relating to access (etc) that would be appropriate in that environment⁹⁶; that is, if the taxpayer’s business is a commercial website, and the ATO has a website, it makes little sense to revert to physical responses.
- 8.6.6 The principle also has advantages from a “cost of compliance” perspective, in that the taxation law will be applied to an industry in a medium that is natural to that industry.

Leverage

- 8.7.1 As previously discussed in Section 7, some of the most efficient collection mechanisms are those which make use of a leverage point. However, as previously discussed, disintermediation will remove traditional leverage points.
- 8.7.2 Compliance leverage is not restricted to collections of money: it extends also to information. A taxpayer's knowledge that the taxation authorities receive statements disclosing his income from certain sources is also likely to materially assist compliance.
- 8.7.3 It is not difficult to conclude that the leverage applied in the "real" world may contrast markedly to that required in the very different environment of the Internet, but that there is a also common underpinning concept, that of *presence*: without a presence by tax authorities in the "real" world, tax compliance would decline, and it is safe to conclude that a similar result would follow on the Internet without such presence.
- 8.7.4 In considering the possibilities detailed below, several points should be made:
- unilateral implementation by Australia could easily result in Australian electronic commerce industries shifting operations offshore, and also disadvantage online industries remaining⁹⁷. Therefore international cooperation by a sufficient number of countries is essential;
 - a large degree of industry and player consultation would be necessary; and
 - a wide range of complex issues (cultural, systemic, political) are involved.
- Leverage in the electronic commerce environment
- 8.7.5 The potential effects of disintermediation mean that it is important to identify alternative intermediaries in the electronic commerce environment if we are to have efficient tax collection.
- 8.7.6 The business model in section 3 shows that there are independent parties connected with either the producer in the Internet 'shop', or the user, or both, that could be considered as intermediaries in electronic commerce and through which it might be possible to arrange efficient collection of taxes.
- 8.7.7 The following table summarises the possibilities. A [] symbol indicates that the player may be able to play a role in facilitating compliance. Numbers in table cells refer to the notes immediately below the table. *It is important to appreciate that the table does not reflect current law or practice - only what is possible with appropriate international agreement.*

Player	Identity	Information	Collection
Network Providers	✓ (1)		
Internet Service Providers (ISPs) and Internet Access Providers (IAPs)	✓ (2)		
Internet Businesses	✓ (3)	✓ (4)	✓ (5)
Software Architects	✓ (6)	✓ (7)	✓ (8)
Site Designers		✓ (9)	✓ (10)
Bank, Credit Card and Financial Institutions	✓ (11)	✓ (12)	✓ (13)
Internet and Electronic Commerce Associations	✓ (14)		

Notes to the table

- 1 Network Providers are large telecommunications companies such as Telstra and Optus who sell bandwidth both by wholesale and retail. They can help in three ways.
 - Telecommunications bandwidth is in one sense a distribution chain and large bandwidth use is indicative of commercial activity.
 - As distributors of IP numbers they can ensure proper accountability for IP numbers they issue [“accountable issue of IP numbers”]
 - Network traffic/packet analysis⁹⁸.
- 2 Identity checks on new commercial users and accountable issue of IP numbers and DNS identifiers.
- 3 Identifiers such as ACN on web sites.
- 4 Section 263 of the Income Tax Assessment Act gives the Commissioner the right of full and free access to all buildings, places, books, documents and other papers for the purposes of the Act. Although there appears to be no authority on the matter, a neutrality argument would suggest that the Commissioner should have access, via the Internet, to those parts of a website containing transaction logs and financial data⁹⁹. Similarly, in relation to section 264, there appears to be no reason on a neutrality basis why the section could not be invoked via electronic mail.
- 5 CSIRO recommendation. It would be quite feasible to implement payment of tax directly from the business website to the ATO website.
- 6 In developing internationally accepted identification and authentication standards applicable to financial transactions.

- 7 It would be feasible to develop code, embedded in popular web browsers such as Netscape Explorer or Microsoft Explorer, to enable reporting of financial transactions. For example, if a user of one of these products¹⁰⁰ buys some products from a web site, the transaction being financed by one of the large financial institutions such as Visa or Mastercard, the value of the transaction could be logged to a web site built and maintained for precisely this purpose.
- 8 Similar to the previous example, except that withholding tax is applied to the transaction instead of it merely being reported.
- 9 Web site design has become a recognised industry. The proposal is essentially a requirement on the industry to incorporate code to facilitate interaction with tools of the kind mentioned in points 7 and 8 above for commercial transactions.
- 10 See previous point.
- 11 May be able to provide useful information about client web sites.
- 12 Financial transaction data about client web sites; development of standards for financial transactions to assist reporting.
- 13 Section 218 of the ITAA and similar provisions of other assessment acts. Raises issues of procedure, such as service.
- 14 Accountable issue of IP numbers, centralised registers of issued IP numbers, accountable domain naming, internationally accepted identification and authentication standards.

8.7.8 In addition, the ATO can facilitate voluntary compliance by having an active presence on the Internet.

Brief survey of legislation relating to Electronic Commerce

Introduction

8.8.1 Computer networks function efficiently because a standard set of protocols enables connections and communications to be made between very disparate machines. Similarly, commerce thrives in environments where agreed standards apply to govern dealings between people, and allow traders and consumers to live in a relatively predictable and secure environment. Many of these standards are informal, relying on conventions and custom, but many others have traditionally relied on law.

8.8.2 Even without the revenue laws, electronic commerce sites do not exist in a legislative vacuum. There are many State and Federal Acts of Parliament which affect the operations of electronic commerce. Some of these Acts¹⁰¹ are surveyed in this section. Almost needless to say, we have made no attempt to be definitive.

8.8.3 Of particular interest to the ATO in the context of compliance leverage and electronic commerce are legislative provisions relating to establishing the identity, physical location and record keeping requirements of trading operations, and other matters which maximise compliance and enforcement effectiveness.

8.8.4 One general observation it is possible to make is that while State and Commonwealth Evidence Acts contain a range of provisions relating to the recognition of electronic evidence, they do not, arguably, deal adequately with the basic concepts underlying such evidence. One important example, data integrity, has been discussed above; another relates to “version trees”, where data is amended, and there is need to accord, in an efficient way, formal status to the original data, the amended data and the relations between the data. As commerce migrates to the Internet, there will be an increasing need to consider electronic evidence more rigorously, instead of as a tacked on improvisation.

Commonwealth Evidence Act

8.8.5 In April 1995, the Commonwealth *Evidence Act* was amended to establish the admissibility and weight given to digital evidence. In particular section 48 (1) allows for the admissibility of computer based records, Section 69 provides for exceptions to the Hearsay rule in the case of business records, whilst Section 71 excepts telecommunications by way of electronic mail, fax, telegram, lettergram or telex. The problem with section 71 is that it may be too specific to include Internet documents such as Hypertext Markup Language (HTML) forms, CGI generated documents, TCP/IP log data and other digital telecommunications transactions and types of evidence under its ambit. It is felt that an amendment to section 71 to give it a more general applicability, in line with the original intent of the legislators, merits consideration.

Corporations Law

8.8.6 Section 219 of the *Corporations Law* specifies that on every public document or negotiable instrument of a company the company must display its ACN number. Whether this applies to, for example - Web pages, is not clear at the moment ... although many Web pages used in commercial transactions could fall under the definition of ‘public document’ or ‘negotiable instrument’.

8.8.7 Section 219 also specifies that corporations ‘shall paint or affix and keep painted or affixed, in a conspicuous position and in letters easily legible, on the outside of its registered office and of every office and place at which its business is carried on and that is open and accessible to the public’ its name; and in the case of its registered office - the expression ‘Registered Office’. How this provision affects ‘places at which business is carried on’, such as websites, is open to debate - but it is quite possible that the Courts would view a website as a ‘place of business’.

8.8.8 Under section 1301 companies are required to advise the ASC of the location of books and records held on computers. Section 1306 outlines the evidentiary value of computer records, printouts and other digitally derived accounts.

Business Names Act

- 8.8.9 The *Business Names Act* in various States (eg. Section 20 of the NSW or ACT statutes) requires that the business name be displayed in a conspicuous position at the place of business and that a person show the business name on all business stationery. It also requires display of the business's certificate of registration at its business premises. Again, what constitutes 'business stationery', 'business premises' and 'place of business' in the context of electronic commerce operations is debatable, though it may be arguable to consider a website as a 'place of business.'

Telecommunications Act

- 8.8.10 The *Telecommunications Act* has long contained provisions relating to the obligations, rights and indemnities applicable to carriers (network providers) and service providers - and recent amendments to this legislation, which come into force in July 1997, have included ISP's under the definition of service providers. The general objects of the Act (at section 3) specify that carriers must meet their obligations under 'other laws of the Commonwealth'. A general obligation on all parties to assist 'authorities of the Commonwealth and of the States and Territories' for the purposes of 'enforcing the criminal law', '*protecting the public revenue*' [emphasis added] and 'safeguarding national security' is also specified under section 47. With respect to carriers, this obligation is reinforced under section 63. Under sections 83 and 84, carriers are also required to keep detailed records and books that enable the separate identification of charges and services.

Self-regulation

- 8.8.11 The Internet industry itself has not been slow to recognise the need for internal accountability. In particular the INTIAA has proposed a *Code of Practice* (in draft form at the time of writing) incumbent on its members and code subscribers - covering content providers, vendors, Internet service providers, and Web Page Developers and Programmers - which is very encompassing in its scope. The Code recognises the impact of existing consumer protection and other laws and has a number of laudable aims.
- 8.8.12 Of interest to the ATO are provisions for secrecy and privacy obligations, data collection and use, and general conduct. It also requires subscribers (including vendors or commerce site operators) to provide to each user the name of their trading entity, the physical location of their office, the method by which consumers will be charged and a contact phone number as well as a number of other consumer protection indemnities and guarantees.
- 8.8.13 Internationally, there are a number of initiatives related to electronic commerce which are deserving of mention, notably the *Model Law on Electronic Commerce* proposed by the United Nations Commission on International Trade Law in June 1996, which has a number of provisions which may be applicable in the Australian context.

Compliance software and “agents”

Internet Tracing Software

8.9.1

Software developed in the UNIX world now available for all popular operating systems, *traceroute* and *finger*, proved to be useful in an audit context. This software aids in the determination of a physical address for a business by giving details of the web site host. This finding is reflected in a recommendation that the ATO acquire and use such software for tax audits on businesses trading on the Internet.

Internet search agents

8.9.2

Programs similar to the search agents used by commercial Internet directory organisations such as Yahoo and Infoseek were considered as having compliance potential. Sometimes called ‘bots’¹⁰², such programs could identify commercial websites and, with appropriate programming, determine which ones were likely to be actually carrying on commercial activity generating income assessable for tax purposes. Two points deserve emphasis:

- there is however no question, at this stage, of using ‘bots’ as tools to produce assessments; rather their use is as tools to map the Australian *commercial* Internet population; and
- it should also be emphasised that such ‘bots’ would be searching only Internet ‘public space’ - they would simply be doing it a lot more efficiently than a person clicking away with a mouse.

8.9.3

The ATO will nevertheless canvass any legal issues raised by the preceding two paragraphs with the Attorney-General’s Department as a matter of caution.

Findings: Income Tax and Tax Generally

The following findings relate to the existing state of electronic commerce and possible future developments.

Finding 1

Electronic commerce is still emerging, the emergence is rapid and needs to be constantly monitored

See La Trobe University Online Media Program (OMP) report in volume 2.

See Recommendations 5-9

- 9.1.1 Electronic commerce is still emerging in Australia. It is not monitored in any systematic way and yet the most appropriate approach to assessing the risks to the Commonwealth's tax base and its administration will involve monitoring developments in those particular product markets where Internet-based commerce is developing the quickest.
- 9.1.2 Because development is so rapid, moving at the speed of "dog years" rather than human years, monitoring will need to be constant and because of the emerging nature of electronic commerce, any responses developed will need to be in proportion to the risk to the Revenue.

Finding 2

The lack of a legal infrastructure, until resolved, is likely to be an impediment to electronic commerce

See section 6.3

See Recommendation 1 and 3

- 9.2.1 The current lack of a legal infrastructure to support electronic commerce may be a serious impediment to larger transactions but not necessarily to smaller ones.
- 9.2.2 Authentication services may become a crucial part of commercial dealings, especially larger ones, on the Internet, and may provide an answer to the problem of trust in larger commercial dealings. Such services may become resident in tax havens.

Finding 3

Electronic Payment Systems are of fundamental importance to the efficiency of Internet markets

See section 4

See Recommendations 8, 9 and 20-25

9.3.1

Easy to use, low value, point and click payment functionality, with anonymity if desired, is a "take-off" function for Internet markets.

This view also shared by OMP. Some of the major reasons for this view are:

- there is a preference for a high degree of anonymity by buyers and sellers alike in many kinds of profitable businesses. This technology offers a high degree of anonymity, arguably higher than existing payment technologies, at a low cost;
- low transaction costs, facilitating impulse buying for large numbers of individually small transactions which cumulatively rack up large profits; a reasonable analogy is telecommunications companies; and
- "anyone to anyone" deals: there is no necessary constraint on one party (eg the seller) conducting a business, though intermediaries to facilitate transactions have grown rapidly.¹⁰³

Finding 4

Australian bandwidth capacity is growing rapidly, but is not yet large enough for the delivery of some types of digital products

See Section 8

See Recommendation 5

9.4.1

Bandwidth is the carrying capacity of a network, or how much data can be transferred in a given time. Certain type of digital products, such as movies, rely on higher bandwidth¹⁰⁴ and the current bandwidth does not easily accommodate the downloading of digital products that are considered 'bandwidth intensive'.

9.4.2

Bandwidth increased approximately ten times in 1996 and further increases have been observed since.

Finding 5

Easier to use interfaces will increase the number of consumers making use of electronic commerce

See section 6

See Recommendation 5

- 9.5.1 This finding may be divided into two closely related elements:
- simplicity of the interface on the Internet is critical for full development of its commercial potential; and
 - there is little doubt that interface aspects will be resolved over the next few years because of increasingly widespread commercial recognition of this fact.
- 9.5.2 It was stated in section 6.5:
- A critical and frequently underestimated factor in consumer purchasing decisions is "ease of buying". Currently, the buying interface over the Internet is discouraging to most consumers. The interface metrics of a TV style device (turn it on and change channels) are significantly less complex than existing computers, and many consumers have no inclination to learn such interfaces in order to shop, even with the so-called "easy to use" operating systems like Windows 95™.
- 9.5.3 A qualification is necessary: it may also be observed that the recognition of the importance of interfaces in devices used by people has been a long and arduous journey, and that it is still common to find devices where the interface has been treated as a secondary, decorative aspect compared with the engineering.

Finding 6

Electronic commerce will increase the numbers of businesses engaged in international trade and reduce the average transaction size

See section 7.6

See Recommendations 3, 6, 7, 9 and 16

- 9.6.1 Electronic commerce allows taxpayers to operate internationally with low capital costs. If utilised, this capacity will allow significantly more taxpayers, particularly in the small business sector, to engage in international transactions with attendant complexities.

Finding 7

Website costs may be low, but successful commercial websites may require a considerable investment

See OMP

Recommendations 6 and 7

9.7.1

This finding is a qualification of the previous one. It does not alter the basic proposition contained in it. The issue is significant for assessment of risks for tax purposes. It arises from discussions between ATO and OMP. The ATO's note to OMP, and OMP's reply about this issue states:

[ATO] Establishment costs of a local website The costs of doing this are stated [by OMP] to be between \$500,000 and \$1.5 million. Many different figures have been put forward for the costs of establishing a commercial website. In the ATO's view it could be done for much less than this, and costs are certain to drop further. It all depends on what kind of commercial website you want, and there are a host of factors to consider in this. If the website proprietor is skilled in a range of areas¹⁰⁵, this can also reduce the costs greatly.

[OMP] NOTE: Our analysis concentrates on multifunctional high end commerce. These would require relatively expensive linking to company "back-ends" such as multimedia catalogues, EDI, stock control and dispatch, accounting, security, payments, certification, etc. But much hinges on the kind of Website wanted. For mainstream items such as books, music, travel, consumers will be looking for high value added components such as book/music reviews, travel information which will involve linking of the large players. We see small players dealing in niche operations and unable to compete with the larger ones for general purpose operations.

But you are right to point out that Web-based shopfronts can be created with little outlay. We would liken this to the establishment of a business in a low rent declining strip shopping centre. Rents are low, but unless business can be generated through advertising/marketing, there is no passing trade to speak of and business prospects would be limited.

Finding 8

It is likely that with maturity, the Internet will become dominated by large corporations

See OMP and paragraphs 4.5.2 and 4.5.3

See Recommendations 6 and 7

9.8.1

The thesis of OMP in brief, is that commercial "transactional spaces" on the Internet will be dominated by large corporations ("whales") with, in many cases, a considerable number of smaller businesses also ("minnows"). This finding has considerable implications, in that as OMP points out, a more focused compliance effort is possible with a few large corporations (even if non-compliant) than many small ones. The ATO acknowledges this argument and its applicability and utility in many (but not all) cases.

9.8.2

However, it should be noted that to the degree that the "whales" are outside of Australia's jurisdiction there will be little that the ATO can do to properly administer the tax law in relation to these parties without effective international co-operation.

Finding 9

The short term impact of electronic commerce may adversely impact some Australian businesses but this trend could be reversed in the longer term

See OMP

See Recommendation 7

9.9.1 Due to the dynamic nature of electronic commerce it is very difficult to make accurate predictions. However, as the United States is the largest producer of digital products, a major trading partner and approximately 2 years ahead¹⁰⁶ of Australia in the development of electronic commerce, Australia might expect to be a net importer of digital products in the short term. In this case, the effects of disintermediation (ie. the removal of middlemen from distribution chains), may result in adverse impacts on some Australian businesses.

However, in their report OMP stated:

We see this flight of electronic commerce overseas as an initial and transitional phase. The second stage will see some of it moving back onshore, with Australian entities either partnering or obtaining a franchise from successful overseas operators. Partnering will be attractive because local operators will be able to take advantage of the large investments made in front-end systems designed for, and underwritten by the North American market. Local management of these systems will be able to generate local advertising support, customise the goods and services being sold in the local market, and provide shorter supply lines where tangible products need to be delivered. We see the Yellow Pages purchase of Australian rights for Digital's AltaVista search engine as one of the first examples of this trend. We expect that the Australian rights to Microsoft's Expedia online travel service will be taken up in the near future.

9.9.2 In addition to the potential, in the 'second stage', for Australian business to operate partnering or franchise arrangements, Australian business may sell directly into overseas markets or develop or exploit other innovations including new types of business or new ways of doing business. This stage is more difficult to predict, being further into the future and reliant upon such factors as technological developments, Government policies and the responses of Australian businesses.

The following findings relate to possible implications for Australia's Tax Base.

Finding 10

No immediate appreciable impact on tax collections

See Recommendations 5-9

9.10.1

It is unlikely that in the next one to two years there will be any appreciable impact on revenue collections. It is extremely difficult to predict beyond two years¹⁰⁷. Detailed reasons and conclusions about this point, covering all taxes which raise significant amounts of revenue, are available.

Finding 11

Consequential on finding 9, there is potential for reduction in the tax base in the medium term, which would be corrected in the longer term

See OMP

See Recommendations 6 and 7

9.11.1

Finding 9 outlined possible adverse impacts on Australian businesses, which could result in reduced tax collections and reduced ATO efficiency through the loss of traditional leverage points.

9.11.2

This finding is however dependant upon Australia's response to the opportunities offered by electronic commerce; the positive effects on Australian business could see an increase in tax collections.

Finding 12

The impact of electronic commerce on tax administration varies according to industry

See OMP

See Recommendation 6 and 7

9.12.1

Impacts across industries are likely to be variable; some industries (eg Travel Industry (where audit trails cross and re-cross) have better audit trails than others (eg. Small/Medium Enterprises [SMEs] in the Computer Software, Retail Goods and several other Industries).

Finding 13

The impact of electronic commerce varies according to tax type

See Section 7, particularly 7.8

See Recommendation 6

- 9.13.1 The impact of the Internet on the ability to assess and collect taxes depends on the tax in question. Rules for the assessment and collection of taxes vary considerably across the range of taxes imposed by law (income tax and sales tax, are for example, quite different) and therefore any analysis about the impact of the Internet on a tax must start from a proper analysis of the methods of assessment and collection of the tax in question. Generalities that the Internet will have this or that impact on "taxes" without specifying the nature of the tax are in our view completely unsustainable.
- 9.13.2 There is a growing consensus that the Internet will, over time, impact on income tax. The discussion below concerning identity, information and its key role in the assessment of liability, and the greater potential difficulty of collection, all bear this out¹⁰⁸. If Sagawa's analysis about the "Balkanisation" of the Internet is correct¹⁰⁹, [and we believe it is - the basic point is that the Internet will shift increasingly towards "user pays": at present a lot of people are getting expensive free rides] then certain parts of the Internet may be more amenable to tax collection than others. Some areas may be well-regulated from a tax perspective; others may support thriving, unregulated "e-cash" economies monitorable via standard compliance measures such as third party reporting, or observation of patterns of resource consumption. Techniques to support such compliance measures will of course differ in the Internet environment.

Finding 14

Within Income Tax, the impact of electronic commerce varies according to income type

See section 6

See Recommendations 2, 3, 6 and 7

- 9.14.1 Income tax liability to some kinds of income - eg pension payments from a government of one country to a resident of another - may be more enforceable than others; eg, payments made by a company in the U.S. to a programmer in Australia for software development. Under the former example, intergovernmental agreement may provide for the supply of lists of pension recipients to authorities of the country where those recipients are resident, whereas the supply of such information may be less likely in the latter case, for a number of reasons. This tends to suggest that as income flows from an entity in one country to a resident of another increase, with the globalisation of the world economy, merely stating the substantive rules in the various international tax agreements is inadequate. It is also necessary to understand the enforcement issues for different types of "international income" and agree on efficient and specific enforcement mechanisms.

Finding 15

Electronic commerce will increase the scope for tax planning

See OMP and section 7.7

Recommendations 2, 3, 6, 9 and 25

- 9.15.1 Preliminary indications are that there is currently no widespread tax planning using the Internet. This is probably indicative of the fact that electronic commerce is in its early stages in Australia; and may also reflect business uncertainty as to the nature and enforceability of taxation. This is expected to change over the next 3-5 years as technological changes such as more efficient Internet payment systems and greater diversity and ease of use of markets see a significantly wider use and acceptance of electronic commerce, and a greater mobility of Internet businesses. These factors could result in a noticeable reduction in the income tax base resulting from wide spread tax planning and tax evasion.
- 9.15.2 OMP note that "...the main effect of rapid Internet penetration is likely to be an increase in the availability of information about, plus a decrease in the cost of participating in, tax minimisation schemes such as those involving the use of offshore tax havens."

Finding 16

Consequential to finding 6, increased participation in international trade raises some challenges for tax administration

See section 7.6

See Recommendations 2, 3, 5, 6, 9 and 25

- 9.16.1 The challenges for tax administration arising from increased international trade include:
- increased prospect of tax planning, especially involving tax havens;
 - increased prospect of transfer pricing, with the speed, frequency, anonymity and integration of exchanges over the Internet placing great pressure on the transactional and comparability principles; and
 - significant increase in number of international, and therefore relatively complex, tax matters, perhaps requiring increased internal skilling and a diversion of resources to administer this activity.
- 9.16.2 Costs of administering the tax law effectively will be increased as more businesses trade internationally.

Finding 17

Some Electronic Payment Systems have significant evasion potential

See section 4

See Recommendations 8, 9, 17 and 21-25

- 9.17.1 The emerging electronic payment systems technologies, particularly those for Stored Value Cards and network money can replicate many of the functions of cash, in that they can be unaccounted (do not have an audit trail) and can be utilised in a bearer fashion, without any link between the value token and the holder of that token. These characteristics make electronic money as challenging, for tax administration, as physical currency.
- 9.17.2 The security in electronic money systems makes it more appealing for users to carry larger denominations of 'cash' in electronic form and the nature of electronic money means that a physical meeting of parties is not required to transfer value. These capabilities make electronic cash more challenging than physical cash.
- 9.17.3 Left unchecked the 'cash-like' electronic payment systems have the potential to further expand the cash economy.

The following findings relate to implications for existing taxing rules.

Finding 18

The application of the existing jurisdictional rules is doubtful

See section 7.2

See Recommendation 3

- 9.18.1 Concepts of jurisdiction based largely on geography, on the domain of nations over land (and sea) are likely to erode.
- 9.18.2 Existing fundamental tax concepts such as source, residence and permanent establishment can be applied in the Internet environment, but they provide a high potential for tax planning, particularly from defects such as over reliance on form and geographical location. These key concepts are also very uncertain in their application and difficult to administer in a self assessment environment. The Internet provides ample opportunity for jurisdiction shopping in relation to the parking of important sources of wealth (and power) such as intellectual property in low tax jurisdictions.

Finding 19

Allocative Tax rules may take some time to clarify

See paragraph 6.2.4

See Recommendation 3

- 9.19.1 Allocative tax rules between nations on the economic fruits of the Internet will take a considerable time to clarify because of the fact that the full impact of the Internet is not yet clear and also because of nations' perceptions of their different economic interests.

Finding 20

Enforcement rules should be easier to clarify than allocative tax rules

See paragraph 6.2.5

See Recommendation 3

- 9.20.1 Except where enforcement rules rely on the clarification of allocative rules, enforcement tax rules between nations relating to the Internet may be clarified earlier subject to development (feasible and cost-effective) of an appropriate infrastructure. It is possible to be quite specific about this infrastructure.

Finding 21

Broad based international co-operation will be required to administer domestic tax laws in relation to electronic commerce

See CSIRO, section 7, particularly 7.7 and paragraph 4.8.1

See Recommendations 2 and 3

- 9.21.1 While some revenue loss can be addressed by changes to the existing income tax law, in most cases the key concepts are so inappropriate that they will be unable to maintain the current level of revenue. International agreement on the allocation of taxing rights will be required. It will also be necessary to regulate the operation of the Internet if current and future tax laws are to be enforceable, and such enforcement will only be possible through concerted international co-operation.
- 9.21.2 The form of international co-operation most likely to be effective is a multilateral instrument with universal adoption or with effective mechanisms to deal with non-co-operative parties.
- 9.21.3 Such an instrument would need to consider, inter alia:
- identification of taxpayers;
 - information and records;
 - assistance in collections or alternative collection mechanisms; and
 - banking, finance and payment systems.
- 9.21.4 In addition there are likely to be a range of other issues such as sovereignty, privacy, reciprocity to be considered.
- 9.21.5 It is recognised that it is an extremely difficult to create such an instrument and have it widely accepted.
- 9.21.6 Lesser forms of international co-operation may be sought in modifying bilateral treaties or creating networks of smaller co-operative groupings.
- 9.21.7 Given the dominant place that United States entities play in electronic commerce, from Internet software providers, to content providers, to electronic payment system providers and as the home of many of the major international credit card companies, the support of the United States in any co-operative arrangement will be significant.

The following findings relate to identification and verification issues.

Finding 22

Taxpayer identity is less certain in the electronic commerce environment

See section 7.3

See Recommendations 7 and 10-16

- 9.22.1 The weak links that currently exist between an Internet presence and the physical parties associated with that Internet presence mean that it may not be possible to accurately identify the legal entity associated with an Internet site. Without identification of a legal entity, income tax assessments cannot be enforced.
- 9.22.2 Even when the infrastructure necessary to support integrity of identity on the Internet evolves, widespread acceptance of this may take some time; and Internet black markets can be expected to occur just like "real-life" counterparts. This is the more likely because of the expected properties of electronic cash and "trusted third parties", where dealings profitable to buyer and seller alike can be accomplished securely for both without either learning the identity of the other.

Finding 23

It would be possible to maintain a list of Australian Internet device addresses to aid identification

See CSIRO

See Recommendations 11-14

- 9.23.1 The most straightforward approach to establishing the list of Australian IP numbers is to seek the co-operation of the international telecommunications companies that connect Australia to the rest of the world. Every international leased line that connects Australia to the wider Internet is associated with a range of IP numbers serviced by that leased line. With appropriate legislation in place, international carriers can request their lessees (ISPs, large corporations, etc) to provide the range of IP numbers that are serviced over each of their leased links.

Finding 24

Electronic commerce technologies can reduce the availability and reliability of information required for tax administration

See section 7.4 and section 8

See Recommendations 7, 10-14, 16, 18 and 19

- 9.24.1 The current domestic rules in relation to the maintenance of business records and ATO access to information are seriously challenged by the ability to maintain records in another jurisdiction. While assistance from the countries concerned may be possible, in many cases there is either no treaty or treaty methods of information exchange are slow and cumbersome.
- 9.24.2 Because of the way commercial websites operate, remote control of income producing activities is easier, and detection and assembly of evidence concerning the people exercising the control and deriving benefits is harder.
- 9.24.3 Where records are maintained in Australia, encryption and similar security technology may mean that taxpayers can deny the ATO practical access to information. In addition the taxpayer may not be able to bring records into the English language where the encryption 'key' has been lost. These circumstances are not unique to electronic commerce but the instances are expected to increase in magnitude with the growth of electronic commerce.
- 9.24.4 Finally, as electronic records are not as robust as physical records, they can be more easily destroyed or altered without leaving evidence of such destruction or alteration. The reliability of records when they do exist is more questionable because of the ability to alter electronic records without trace. Once again this issue is not unique to electronic commerce but the instances are expected to increase in magnitude with the growth of electronic commerce.
- 9.24.5 Some of the areas where it is considered there are likely to be difficulties in applying and enforcing the law are:
- Source rules relating to sales of goods / provision of services on the Internet;
 - Share trading income on the Internet
 - Withholding tax
 - Central management and control
 - Controlled Foreign Corporations (CFCs)
 - Transfer Pricing
 - Evidentiary issues feature strongly in this conclusion.
- 9.24.6 Many third parties - banks, credit card companies and telecommunication providers - capable of assisting tax compliance are overseas and consequently a high degree of international co-operation will be required. The practical difficulties of obtaining co-operation and implementing effective systems to support effective tax compliance will be large.

Finding 25

Encryption presents difficulties but is inevitable

See CSIRO, section 7.4 and paragraph 6.4.6

See Recommendation 16

- 9.25.1 Encryption or similar security mechanisms will be required to facilitate electronic commerce. Further it will not be cost effective for the ATO to attempt to break properly implemented encryption on transactional or other tax information. It is not reasonable to prohibit encryption technology but legislation may be necessary to ensure owners manage tax-related data and keys with appropriate care. The introduction of 'key escrow' legislation is not recommended.

Finding 26

In relation to the electronic commerce environment, the ATO will require access powers and certainty of records comparable to those in the physical environment

See Paragraphs 6.4.7, 8.5.8, 8.6.5 and section 7

See Recommendations 16 and 18

- 9.26.1 To ensure effective administration of the tax laws in relation to electronic commerce, the ATO's information gathering powers and record keeping requirements will need to be suited to the new environment.
- 9.26.2 This may entail lawful access to encryption keys as appropriate and working to ensure the integrity of electronic records.

The following finding relates to tax collection mechanisms

Finding 27

The effectiveness of existing collection mechanisms is reduced by electronic commerce

See section 7.5

See Recommendations 16, 18 and 19

9.27.1

Disintermediation eliminates intermediate "middlemen" businesses which are a significant leverage point for tax collection. These intermediaries are also sources of independent information about transaction values and the identities of parties to a transaction. A reduction in tax collections from permanent establishments and foreign subsidiaries is also probable.

Disintermediation and the reduction of leverage

In the physical distribution chain from a foreign manufacturer, through an Australian importer to an Australian customer, the Australian importer is an intermediary who would be responsible to paying Sales Tax, Royalty withholding tax, if appropriate, and Customs duties.

Using electronic commerce technologies the Australian customer could make direct contact with the foreign manufacturer via the Internet and arrange for the goods to be shipped, by mail or courier, directly to the customer. In this circumstance the Australian customer would be responsible for the Sales Tax, Withholding Taxes and Customs Duties that might be payable.

However it would be practically difficult to enforce the payments of the taxes and duties if the number of consumers was very large. The leverage point of the Australian importer has been removed.

Findings: Sales Tax

The following findings relate to Sales Tax

Finding 28

Sales Tax will be adversely affected by the Tax Advantaged Computer Program (TACP) arrangements

See Recommendations 26-29

- 9.28.1 Where goods that incorporate a computer program are the subject of a taxable dealing, the Sales Tax law excludes the value of the dealing, provided that the program is *not* embodied in a microchip. This concession applies to programs embodied in carrying media such as disks, tapes and CD ROMs (although special provisions apply to programs embodied in a cartridge). Programs embodied in carrying media of these kinds are referred to as 'tax advantaged computer programs' (TACPs).
- 9.28.2 TACP's are becoming features of more and more goods as technology advances, and the value of the TACP's relative to the overall value of the goods in which they are incorporated is trending upwards. Again, the WST base is under threat. Previous legislative attempts to incorporate the value of the TACP into the taxable value of the host goods have failed, apparently because of the ability of at least some vendors to download the "software" onto the goods at a point subsequent to the taxable dealing with the actual goods themselves. The emergence of the Internet will only increase the potential for such downloads direct into consumer households.

Finding 29

Sales Tax will be adversely affected by digital technology

See Section 7

See Recommendations 26-29

- 9.29.1 The advent of digital technology is already impacting the WST base with new products emerging that perform similar functions to existing products but use quite different processes (eg "digital cameras"). While this is more a "new technology" issue than an "electronic commerce issue", these developments place more pressure on the current classification boundaries of the WST as competitive advantages will flow from the potential for different tax treatment of goods performing essentially the same function.
- 9.29.2 Currently, music, films, packaged computer software and a range of other products are sold in the form of "goods" and are taxed in whole or in part under the WST. The technology already exists to allow consumers to directly download music and other "digitised information" onto blank CD's in their own homes. It is envisaged that the future music and film market may evolve to the point where no "goods" actually come into existence, with consumers instead buying directly through the Internet on a "pay per performance" basis. This scenario would see a significant erosion of the current WST base as a result of the effective replacement of "goods" with "services", and from the reduced demand for associated products such as compact disc players and video cassette players etc.
- 9.29.3 These developments will also impact on the design of goods providing the interface with these services and place further pressure on current "classification boundaries" under the WST. For instance, televisions and other domestic audio visual equipment currently attract sales tax at a higher rate than computers. It seems likely that the differentiation of such goods will become more and more blurred with the probable emergence of new integrated equipment that performs all of these functions and more.

Finding 30

Sales Tax will be adversely affected by disintermediation

See Section 7

See Recommendations 26-29

- 9.30.1 It is likely that the collection of sales tax will be affected by disintermediation. As stated in paragraph 7.6.3:
- The practicalities of enforcing sales tax and customs duty differ considerably between the case of a container load of goods imported via a registered importer / wholesaler on the one hand, and several thousand end users who have ordered goods from overseas websites because of cheaper prices on the other.
- 9.30.2 The consequence of these "practicalities" is a possible reduction in sales tax revenue should there be an inability to identify an alternative feasible way of collecting it to replace the current method of using intermediaries such as importers.

Recommendation Principles

- 10.1.1 It seemed to us prudent, as people responsible for making recommendations, to do so with a set of principles, as a precaution against unnecessary and possibly burdensome regulation.
- 10.1.2 The overriding principle is that there should be broad neutrality between the treatment of businesses engaged in traditional physical commerce and those engaged in electronic commerce. Practically this means that, wherever possible and subject to the differences in the environments, business engaged in electronic commerce should be subject to equivalent arrangements as businesses engaged in physical commerce.
- 10.1.3 More particular principles are:
- the ATO, in co-operation with other countries, needs to develop approaches to taxing rights for economic activity which occurs on the Internet: for example, in respect of income derived from websites;
 - commercial anonymity is inconsistent with existing business practice and with proper administration of the tax law and Internet businesses should be as 'visible' as physical businesses;
 - well defined limits should be placed on transactional or user anonymity in electronic payment systems to ensure these do not become vehicles for tax evasion. This principle seeks to balance the right to privacy with effective administration of the tax law;
 - records relating to the administration of a taxation law should be maintained in a form readily accessible by the ATO, with safeguards about the integrity of such documents;
 - enforcement powers in the Internet environment relating to access, inspection of records, recovery of debts and so on, should correspond as closely as possible having regard to the different environments in which they operate, to their physical world equivalents; and
- Note the difference between the fourth and fifth points above the former is concerned with the requirement to keep records subject to guarantees about their integrity, the latter with the ATO's methods of access to such records.*
- in seeking information from organisations involved in electronic commerce to facilitate effective administration of the law - for example, in assessing risks to tax collections - the ATO will at all times be concerned about costs of compliance. The ATO will particularly seek to minimise obligations on organisations who are involved in commercial aspects of the Internet only in a small scale or incidental way.
- 10.1.4 It should be noted that while the consultants to the project have made a number of recommendations, these are recommendations to the project team and not recommendations of the project team, unless otherwise noted below.

Recommendations

11.1.1

Recommendations have been group according to main themes, as follows:

Themes	Recommendations
Co-operation	1-4
Market Knowledge	5-9
Identification and Authentication	10-15
Information Integrity and Accesss	16-19
Electronic Payment Systems	20-25
Sales Tax	26-29

11.1.2

In addition, cross reference tables, between the findings and recommendations are available at Attachment 3.

The first group of recommendations are about co-operation at a domestic level, to build certainty for business, and at an international level to overcome the challenges of using national laws and practices to respond to global electronic commerce.

Recommendation 1

The ATO should establish policies associated with e-commerce in co-operation with other relevant federal government agencies.

See finding 2

Nature of Proposal

Since the Internet is a global infrastructure for digital communications which knows no international boundaries, the problems of interest to the ATO will also be of interest to other agencies such as the Australian Customs Service (ACS), the Department of Foreign Affairs and Trade (DFAT), the Department of Industry, Science and Tourism (DIST), the Reserve Bank of Australia (RBA), the Australian Federal Police (AFP), the Attorney-General's Department (AGD), AUSTRAC, the Office of Strategic Crime Assessment (OSCA), the Privacy Commissioner's Office (PCO) and others. The ATO should co-operate with all such organisations in formulating policy associated with Internet based e-commerce.

This requirement for multiple agencies to co-operate in such a way is a direct consequence of the convergence of several previously distinct industry sectors: telecommunications, information technology, the 'content industries', and finance.

Cost Considerations

Not fully considered.

International Co-operation

Not required.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 2

The ATO should plan for international co-operation with other revenue collection agencies.

See findings 14, 15, 16 and 21

Nature of Proposal

Strategies for detecting e-commerce activity over the Internet require multi-lateral co-operation. The ATO should take a lead in developing such multilateral co-operation, and at the same time:

- plan on the assumption that international co-operation will evolve;
- advance those parts of the plan which are useful, even if international co-operation does not develop as quickly as was expected; and
- advance those parts of the plan which will encourage international co-operation to develop.

In relation to the third point the ATO should position itself, within the scope of the existing law, to be as effective as possible in any form of international co-operation. If revenue collection agencies in other jurisdictions follow suit, then there is a basis for more effective co-operation.

The Internet, along with other technologies such as data mining, provides a mechanism for revenue collection agencies around the world to co-operate by making their accumulated audit trails available to each other to their mutual advantage. This would require a common mode of information access which should be developed collaboratively.

This proposal would also provide information for proper administration of the tax laws.

Cost Considerations

The proposal would have costs associated with it, which would require examination.

International Co-operation

Required.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 3

Australia should continue its role in having taxation and Internet issues debated and where possible addressed in international forums, in particular the OECD, PATA, SGATAR and APEC.

Australia should pursue issues in these forums to seek certainty of jurisdictional rules, appropriate information sharing arrangements and international approaches to discouraging the development and use of low tax jurisdictions and tax havens.

See findings 2, 6, 14-16 and 18-21

Nature of Proposal

While discussion of the challenges to which commerce on the Internet gives rise is proceeding in international forums (such as, for example, broad issues relating to the allocation of taxing rights arising from Internet commerce), there may be a need to consider more pressing and specific issues arising from the current law and its interpretation, (eg the status of websites). Prompt attention to these issues, preferably within a specified timeframe, will allow Australia to afford some protection to its revenue base in the short term, and reduce some of the uncertainty and complexity in applying rules such as those relating to permanent establishments to Internet businesses.

Tax Havens

It is likely that many of the existing so-called 'tax haven' countries will capitalise on the improvement in international communications infrastructure and bandwidth, and will attempt to become major players in the Internet economy. The cost of establishing a Webshop is not prohibitively expensive - even less to re-locate one to another jurisdiction - with the result that many Webshop owners will be tempted to set up operations in such jurisdictions. This will result in a significant loss of revenue from 'mainstream' jurisdictions.

For the same reason, on-line banks and other payment providers will be established in such tax havens, with the result that revenue collecting authorities will be unable to have access to audit trail information.

A key theme to arise from the examination of Internet taxation issues is the need for international debate on the issues. The enormous potential of the Internet to reduce revenue bases will be of concern to all revenue authorities. More importantly, it is becoming increasingly apparent that measures to address these concerns, such as reporting requirements or discouraging the use of tax havens, can only succeed if applied on an international basis.

It is in Australia's interest to take a leading role in progressing the debate to ensure timely solutions are developed. It is also in Australia's interest to take a leading role in the debate to ensure that Australia's position as a net importer of capital is taken into account in the development of international approaches to taxation and the Internet. Experience has shown that progress in this area is difficult.

Finally, the Internet is expected to provide a high level of mobility for Internet businesses, highly skilled labour and capital. This is expected to result in a tax driven migration of businesses to the Internet, and of Internet businesses to low tax jurisdictions. The expected migration of the location of Internet businesses to low tax countries will require Australia to take strong measures to discourage the development and use of low tax countries.

Cost Considerations

Costs would include participation in international forums, although the ATO already bears these costs to a significant degree. Depending on the approaches taken, there may be increased compliance costs for Internet businesses arising from this recommendation.

International Co-operation

International co-operation is essential for this recommendation to be successful.

Expected Responses by Affected Parties

Internet businesses will argue that this recommendation could stifle the development of electronic commerce and provide competitive disadvantages vis-a-vis businesses connected with countries not taking such a forward approach. Low tax jurisdictions may also argue in international forums that they are being unfairly targeted.

The international community is generally considered to strongly welcome Australia's leading role in this area.

Recommendation 4

The ATO should be sensitive to the effect of e-commerce regulation on the nascent Internet commerce industry in Australia.

See CSIRO

Nature of Proposal

The Internet, as the key infrastructure component of the information economy, promises to provide Australian industry a global competitive advantage. All the key components are already in place in Australia: good communications infrastructure, high penetration of personal computers per head of population, and a willingness to adopt new technology.

There are three areas to consider:

- The Internet is not bound by national boundaries, and if the cost of compliance is made too onerous, the owner of a Webshop may consider moving the business overseas to a low tax jurisdiction, with a resultant loss of revenue to Australia. Such a move could be carried out with comparatively little effort.
- Even if the Webshop owner decides to keep the Webshop located in Australia, potential buyers may decide to purchase from an overseas Webshop where tax compliance reporting may not as stringent, and hence where purchasing could be carried out with greater anonymity. This would result in a loss of revenue to the local Webshops as well as to the ATO.
- Internet payment schemes are currently being introduced to handle 'micropayments', which may be as low as fractions of a cent. These are likely to be unaccounted systems. These payments schemes are new and the industry is still immature. Until critical volumes are reached, it is possible that the cost of logging of such low value transactions may approach the value of the actual transaction itself, and this may stifle industry development.

In particular the ATO should consult with affected parties, such as Internet and information technology industry bodies, telecommunications providers, electronic payment system providers and other private and public sector organisations to carefully determine the impacts of various options on the electronic commerce industry in Australia.

Cost Considerations

Not fully considered.

International Co-operation

Not required.

Expected Responses by Affected Parties

Not fully considered.

The next group of recommendations relate to the ATO gathering knowledge of the electronic commerce environment, by observation and participation and using that knowledge to ensure that appropriate responses are developed.

Recommendation 5

The ATO should become an Internet citizen.

See CSIRO and findings 1, 4, 5, 10 and 16

Nature of Proposal

The ATO is a citizen in the “real” world; it has a role, directly and indirectly, in setting standards and regulations by which business is conducted. The citizenship element of this role is reflected in the ATO’s involvement in forums considering such matters as accounting standards, business and banking practices and privacy, for example. In order to influence the development of electronic commerce the ATO needs to be an Internet citizen and participate in bodies that have a role in shaping how electronic commerce will be conducted.

The parallel can be seen in the way that electronic mail and efficient file transfers were key factors in developing truly national workgroups in the ATO. Similarly efficient e-mail and file transfer facilities will generate and sustain the international workgroups required for more effective international co-operation. Software to support these facilities is readily and cheaply available.

The Internet functions democratically, and is not controlled by any one organisation. The ATO should participate, and where necessary take the lead, in creating the standards for Internet based communication associated with revenue collection agencies.

Such standards will be developed in a public forums such as the Internet Engineering Task Force (IETF) and International Standards Organisation (ISO) although the standards for exchange of information between revenue collection agencies could be carried out in a private forum, such as the Organisation for Economic and Cultural Development (OECD). As a result of the experience gained from being an Internet ‘citizen’, the ATO will be better able to make valuable contributions to the development of relevant standards.

The Internet is expanding at a phenomenal rate. The initial use of the Internet was in the educational and research communities, but over the past year the biggest growth by far has been in the commercial sector. Market Research organisations such as Gartner and Forrester are bullish about the commercial potential of the Internet. As a consequence, any organisation working with the Internet must remain flexible

At a more local level, the Internet provides a low cost global communications infrastructure for the delivery of information, including information between the ATO and its clients. For instance the ATO should be capable of using the Internet for routine communication with tax payers, including the lodgement of returns.

The World Wide Web 'browser' is rapidly becoming the standard interface for most computer applications. The ATO should take advantage of low cost Internet technologies, and implement an Internet based system similar to the Electronic Lodgement System (ELS), which need not involve direct communication with the ATO's production mainframe computers. The experience so gained with the use of the Internet will assist the ATO to understand the dimensions of the Internet, and in particular how it will affect compliance in the broader context.

Perhaps the simplest way of considering this proposal is by likening the ATO's website either to a national or branch office.

Like a branch office, it could receive returns to process, requests for rulings to consider, and conduct compliance activity. The number of Australians who have Internet access is large¹¹⁰ and growing and many people would find dealing with the ATO this way extremely convenient.

Like a National Office, it could more efficiently conduct policy oriented work with other arms of government and overseas tax authorities than is currently possible.

In particular, an Internet citizenship will lift the ATO's profile in the electronic commerce environment, allowing the Office to influence developments and to encourage voluntary compliance in the same manner as the physical presence of the ATO in the real world encourages voluntary compliance.

The specific recommendations are:

- The ATO should produce a five year plan with annual revisions;

Note that while a five year time frame has been suggested, the implementation of some of the recommendations in this report may be outside that time frame.

- In general, the ATO should contribute to the development of Internet standards and protocols relevant to the ATO's interests;
- The ATO should closely monitor developments in the current impediments to large scale electronic commerce, including bandwidth, user interfaces and the costs of establishing websites;
- The ATO should liaise with bodies such as Internet Industry Association of Australia (INTIAA), Internet Society and Internet Assigned Number Authority (IANA), to determine strategies that will assist in identifying Internet users in Australia either through IP (Internet) numbers or other alternative means such as identification through Internet Service Provider's (ISP) records;
- The ATO should closely monitor the developments of various Internet standards including IPv6 and establish working relationship with IETF and its relevant sub committees, so as to influence the development of relevant standards that are likely to have an impact on electronic commerce and tax compliance issues;
- Support the implementation of Public Key Authentication Framework (PKAF) standard in Australia;
- The ATO should significantly expand the bandwidth of current firewall facilities to the Internet;

- The ATO should investigate the possibility of allowing secure access to backend systems;
- Each business line should review its presence on the ATO website;
- In ATO advertising and publicity material, and standard directory entries such as telephone books, the applicable Uniform Resource Locator (URL) should be published. For example, if the small business area of the ATO had an initiative inviting contact from the public, the URL might be: *http://www.ato.gov/sbi/url*.
- Regulated access to the Internet for staff involved in compliance work, but with measures to ensure that field activity does not suffer. Training costs will be involved; and
- Enhanced e-mail and file transfer facilities with tax authorities of other countries, to both enhance practical co-operation between national tax authorities and reduce current delays and costs. These protocols have been implemented as a matter of routine on many websites for many years: stable, extensively proven software exists. Public awareness of these facilities would also probably have positive compliance improvement effects.

In addition to providing knowledge about the environment, this proposal would assist voluntary compliance with taxation laws and assist in the development of specialised compliance techniques.

Cost Considerations

Training and technology costs.

The proposal will reduce costs for many taxpayers. It is also likely to reduce errors and processing costs, because:

- information can be captured in a structured manner through the use of programmable electronic forms; and
- because the forms are programmable and support conditional logic, questions determined as being inapplicable to a taxpayer's situation can be masked. For example, if a taxpayer has answered "unmarried" to a marital status question, an inquiry about the spouse's name will not be made.

These forms are used routinely in large numbers of websites. They are proven technology used to support commercial transactions. Contracts are evidenced by the buyer's responses to the forms used.

International Co-operation

Not required for effectiveness.

Expected Responses by Affected Parties

Likely to be supported because many taxpayers will find this a quicker and more convenient way of interaction with the ATO than traditional means.

Recommendation 6

The ATO should continue the ongoing work to measure the risks to income tax and the tax system generally from electronic commerce.

See findings 1, 6-8 and 10-16

Nature of Proposal

It is worth outlining some concrete steps proposed to address the natural objection that risks do not merely come from electronic commerce but from other sectors of the economy also. The steps identified below are not intended to be exhaustive.

- whether current ANZIC codes are adequate and appropriate to deal with businesses engaged in electronic commerce;
- whether current concepts and methods are adequate to measure "imports" and "exports" which occur via the Internet;
- demographics of the Australian Internet, and other relevant indicia of commerce, such as bandwidth, including statistics on the number of commercial sites and other salient information such as percentages of sites actually offering products for sale;
- liaison with other agencies interested in this topic, such as Treasury, the Australian Bureau of Statistics (ABS), DIST and DFAT, with a view to developing agreed classifications, techniques of measurement etc; and
- continue to monitor the migration of business to the Internet by using and updating the monitoring systems established for this project within the International Tax Division.

It is recommended that an initial report documenting progress be furnished no later than 1 December 1997. The goal is not to set up a "special" risks category for electronic commerce, but to satisfy ourselves that we have an adequate framework for assessing the risks.

Cost Considerations

None above normal ATO risk measurements.

International Co-operation

Not required.

Expected Responses by Affected Parties

Not applicable

Recommendation 7

Tax Return forms to be amended to require businesses trading on the Internet to provide contact information such as the uniform resource locators (URLs) and email addresses together with limited information indicating Internet trading.

See findings 1, 6-12, 14, 22 and 24

Nature of Proposal

It is proposed that businesses be required to complete the following details on tax returns¹¹.

- e-mail address of taxpayer, public officer, trustee (etc), where an e-mail address exists;
- address of web site, where the business is trading on the Internet; and
- a yes / no question about whether sales of goods or services were made by the Internet.

This would allow the ATO to examine the extent of commercial activity on the Internet, as a guide to the actual level of possible challenges for tax administration as well as opening faster, appropriately secured, communication channels with taxpayers.

Cost Considerations

Minimal. The questions can be answered in a few minutes. There would be some processing and systems costs for the ATO.

International Co-operation

Not required.

Expected Responses by Affected Parties

Not expected to raise significant concern. The question in relation to sales is an indicator of actual commercial use in Australia and may be information which the ABS requests from the ATO.

Recommendation 8

The Australian Taxation Office should actively monitor the electronic commerce developments of the Banking and Finance Sector, widely defined, over the next 3 years for:

- **new entrants;**
- **new payment system products;**
- **new financial products;**
- **changes in the residency status of industry participants; and**
- **disaggregation of banking and financial functions,**

with a view to intervening to ensure that tax, properly payable by industry participants or their clients, is paid.

See findings 1, 3, 10 and 17

Nature of Proposal

The banking and finance sector is critical in electronic commerce because it is the sector which facilitates the majority of large commercial payments and is itself able to take advantage of electronic commerce technologies to disaggregate functions and to locate them in a geographically dispersed fashion.

The potential new entrants to this sector, from overseas or from other sectors within Australia, should be included in this monitoring exercise whether or not the new entrants fit within the neat classification schemes such as ANZSIC.

This sector needs to be monitored to detect trends in disaggregation of functions, particularly where one or all of the functions may be subsequently moved outside of Australia's taxation jurisdiction.

Further, to the degree that the sector uses the electronic commerce technologies to create new payment systems or financial products which may be detrimental to the Revenue in operation, this information needs to be fed into policy considerations.

Cost Considerations

As most of the participants in the banking and finance sector fall under the responsibility of the ATO's large business and international area, this area is best placed to implement this recommendation. This may require additional salary funding for the segment although it might be possible to complete the task within the existing ATO structures.

There are unlikely to be any external costs related to this monitoring.

International Co-operation Required

International co-operation is not required for this recommendation to be implemented.

Expected Responses by Affected Parties

Industry participants might be concerned that their industry is under scrutiny. However the scrutiny is warranted given the significance of the sector in the electronic commerce environment.

The general public is unlikely to be affected.

Recommendation 9

Taxpayer compliance in relation to accounts or other stores of value maintained offshore for the benefit of the taxpayer needs to be tested.

The small business and individual areas of the ATO should undertake an audit project to test compliance in this area with a view to taking appropriate action as warranted from the results of these audit projects.

See findings 1, 3, 6, 10 and 15-17

Nature of Proposal

As electronic commerce opens up new, fast, convenient, cost-effective opportunities for small business and individual taxpayers to invest offshore we need to ascertain the level of risk associated with under reporting or non reporting of foreign stores of value.

An audit project will generate a baseline figure of compliance with taxation laws.

The case selection method, difficulties encountered, data quality and a range of other information should also be documented in such a project.

Cost Considerations

The small business and individual areas of the ATO would need to make a number of audit personnel available for up to twelve months to complete and properly document the project proposed by this recommendation. The international team of the small business area of the ATO should be involved as should the International Tax Division of the large business area, to assist in obtaining information from our taxation treaty partners. Information technology services should provide ad-hoc computing support if required.

International Co-operation

International co-operation is required to obtain data. It may be difficult to obtain data from non-DTA countries.

Expected Responses by Affected Parties

None other than taxpayers concerns at being selected for audit.

The following recommendations are about properly identifying or authenticating taxpayers, particularly businesses, engaged in electronic commerce.

Recommendation 10

The ATO should liaise with the Australian Securities Commission to ensure that site identifiers such as company and businesses names and ACN or uniform company numbers are mandatory on commercial websites. International agreement should be sought for this recommendation.

See findings 22 and 24

Nature of Proposal

This recommendation is designed to introduce comparable arrangements for companies engaged in electronic commerce as for companies engaged in physical commerce.

Physical companies are required to be registered and to display their Australian Company Number (ACN) on public documents. This corporate regulation assists in identifying companies for taxation administration.

It can be difficult to trace the owners of a commercial website, as the results of our audit project have shown.

The proposal is therefore an inexpensive compliance measure which would also have application in the domain of criminal law and consumer protection. A similar recommendation was made in the final Report of the Electronic Commerce Task Force to the Commonwealth Law Enforcement Board, at page 114, paragraph 10.3.16.

Cost Considerations

Minimal costs of compliance would be involved.

International Co-operation

Not strictly necessary, but Australian businesses could easily operate from offshore servers and avoid the requirement. This is why international co-operation is recommended.

Expected Responses by Affected Parties

Unlikely to attract any significant adverse comment. The proposed rule applies to commercial websites only.

Recommendation 11

Webshops should be licensed.

See CSIRO and findings 22-24

Nature of Proposal

The owner of a Webshop, or the licensed hosting organisation operating on behalf of the owner, should register details of the Webshop with the ATO, or some other appropriate Government agency. This recommendation reflects the current standard practice of registration of businesses, and it could well be extended to the registration of all businesses, whether Internet-enabled or not.

Webshop details should include:

- IP number and port(s);
- Uniform Resource Locator (URL);
- ACN or other public identifier;
- e-mail address for correspondence (often missing from web pages).

This requirement should apply either if:

- the computer containing the Webshop is in Australia; or
- the owner is an Australian resident;

This requirement could be carried out on-line with minimum effort using a Secure Socket Layer (SSL) secure connection from the Webshop to the ATO's web-site (in line with the ATO being an Internet 'citizen').

The information collected may be of interest to other revenue collection agencies, and may assist the ATO in multilateral discussions.

Cost Considerations

Not fully considered.

International Co-operation

Not required in theory, but will probably be required in practice to discourage flight of Internet businesses.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 12

Organisations that operate or host Webshops should be licensed.

See CSIRO and findings 22-24

Nature of Proposal

Organisations that operate their own Webshops, as well as ISPs and third party 'site providers' who host Webshops on behalf of other organisations, should be licensed. It is expected that such registration will apply to the larger ISPs only. Smaller ISPs, whose role is oriented around community service and who do not host merchant facilities, will be unaffected.

As part of their licence, Webshop hosting organisations should report to the ATO details of the Webshops that they host. This requirement could be achieved by the Webshop hosting organisation asking their new (and existing) clients the question: 'Do you intend to sell goods or services from your web-site?' This places the obligation firmly on the Webshop owners, the only obligation on the Webshop hosting organisation being to report what their client have stated. This is a simple requirement that could be achieved at low cost by on-line notification to the ATO as described in the previous recommendation.

Cost Considerations

Not fully considered.

International Co-operation

Not required in theory, but will probably be required in practice to discourage flight of Internet businesses.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 13

A legislative and technical framework required to monitor commercial IP (Internet) traffic should be determined in consultation with the Attorney General's Department, the Department of Communications and the Arts, AUSTRAC and others.

See CSIRO and findings 22-24

Nature of Proposal

As the Internet matures and its security improves, it will increasingly be used for financial transactions. Currently financial transactions between organisations take place on proprietary networks, such as SWIFT in the case of the banking system. The ATO currently has access to the log files of these proprietary networks for audit purposes.

It is critical that the ATO be able to assess the level of electronic commerce on the Internet. This can be achieved from the audit trails of Webshops and Webshop hosting organisations, as described in Recommendations 12 and 13, but this will not detect those people or organisations that carry out financial transactions on the Internet outside the licensed e-commerce infrastructure providers.

Internet payment protocols such as SET, Mondex, Cybercash, Digicash, and others, are beginning to be deployed, and the header of a packet (the 'port number') will indicate whether such protocols are used in that packet. It should be noted that the number of such 'financial' packets is likely to be a tiny fraction of the overall Internet traffic.

Statistical information gathered from traffic across the network is capable of supporting the identification of some unreported commercial activity. However, the Internet is a public network, and any attempt on the part of the ATO or other organisations to 'monitor' Internet packet traffic for certain types of packets should be undertaken only after privacy and other concerns have been addressed.

It is recommended that the ATO co-operate with other Government agencies (such as AGD, the Department of Communications and the Arts (DOCA), AUSTRAC and others) to determine the legislative framework that is required for such IP traffic monitoring.

Cost Considerations

There will be some costs associated with this recommendation.

International Co-operation

Not required.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 14

A record of the ranges of IP (Internet) numbers of Australian based computers should be maintained.

See CSIRO and findings 22-24

Nature of Proposal

Each Internet-enabled computer in the world has a unique IP number, although this may be assigned temporarily to a computer by an Internet Access Provider (IAP) whilst it is connected to the Internet, and then re-assigned to a different computer during a different session. There is not necessarily a correlation between an IP number and the geographical location of a computer.

Currently there is not a definitive list of IP numbers of those computers that are located in Australia. Hence it is not straightforward to determine whether a computer with a particular IP number is located in Australia or not.

The most straightforward approach to establishing the list of Australian IP numbers is to seek the co-operation of the international telecommunications companies that connect Australia to the rest of the world. Every international leased line that connects Australia to the wider Internet is associated with a range of IP numbers serviced by that leased line. With appropriate legislation in place, international carriers can request their lessees (ISPs, large corporations, etc) to provide the range of IP numbers that are serviced over each of their leased links.

The result will be a list of ranges of all IP numbers in use in Australia, including those numbers that are not yet assigned. However the list would not include those IP numbers reached in Australia by tunnelling. Organisations that use tunnelling for legitimate purposes will also register the ranges of IP numbers reached at the Australian end of the tunnel. This method will not detect those IP numbers that are deliberately concealed through tunnelling with the active co-operation of overseas collaborators. However such active co-operation in IP concealment will be detected in the jurisdiction where the IP numbers appear to be. With international co-operation, such information could be made available to the ATO.

Cost Considerations

There will be some costs associated with this recommendation.

International Co-operation

Not required in theory, but will probably be required in practice to discourage flight of Internet businesses.

Expected Responses by Affected Parties

Not fully considered.

Recommendation 15

ATO acceptance of digital signatures for purposes relating to the administration of the tax law will depend upon minimum evidence of identity or other appropriate requirements being met.

See finding 22

Nature of Proposal

Digital certificates are the electronic equivalent of physical signatures and so there needs to be some degree of rigour in the way that they are issued to avoid fraud.

Using the Internet for commercial purposes will increasingly require the use of electronic identification such as electronic signatures.

Electronic signatures are generally certified by an issuing authority and the proof of identity requirements of issuing authorities varies. However there are commercial reasons for having reasonable proof of identity checks to avoid commercial fraud and appropriate industry standards may develop.

If these industry standards do not develop or do not meet the requirements of tax administration, negotiation with domestic issuers and with international bodies will be required.

This recommendation will be valuable for authenticating taxpayers if the Internet is used for tax return lodgement or similar dealings between a taxpayer and the ATO. The arrangements would also ensure that taxpayers which used digital signatures that met ATO expectations could easily satisfy substantiation or other requirements where that taxpayer needs to show sufficient connection to an expenditure, for example.

A taxpayer with a digital signature that does not meet ATO minimum standards will not automatically be denied a deduction for expenditure incurred using that digital signature. However, in this instance the taxpayers digital signature would not be sufficient evidence and the taxpayer would need to provide additional evidence.

Cost Considerations

Where internationally agreed industry standards do not meet tax administration requirements and international minimum standards are agreed, issuers that do not meet these minimum standards may incur compliance costs.

International Co-operation

Where internationally agreed industry standards do not meet tax administration requirements, international co-operation will be required to produce and enforce minimum regulatory standards.

Expected Responses by Affected Parties

Where internationally agreed industry standards do not meet tax administration requirements and international minimum standards are agreed, issuers that do not meet these minimum standards may be concerned about compliance costs.

The following recommendations are about ensuring that there is adequate information to administer the tax laws in relation to electronic commerce and that the ATO has access to that information.

Recommendation 16

The ATO should examine the practical effectiveness of section 262A of the Income Tax Assessment Act (ITAA) and comparable sections of other Acts administered by the Commissioner of Taxation, in the emerging electronic environment, and apply the law more vigorously in cases where taxpayers are not prepared to fully comply with their obligations.

See findings 6, 22 and 24-27

Nature of Proposal

The ATO will examine the practical effectiveness and appropriateness of s262A of the ITAA and comparable sections of others Acts administered by the Commissioner in the emerging electronic environment.

The retention of accurate and accessible records is important for the ATO, in the determination of income and expenses.

The ability of taxpayers to encrypt records and to fail to make the encryption key or 'plain text' records available to the ATO may seriously impair the ability of the ATO to administer the law.

Cost Considerations

Unlikely to be significant as taxpayers are required to keep records at present.

International Co-operation

Not required.

Expected Responses by Affected Parties

There may be some adverse reaction to this proposal, the ATO will need to ensure that the records required to be kept are explicitly detailed where possible, so that taxpayers are in no doubt as to what records need to be kept.

Recommendation 17

The ATO should negotiate with AUSTRAC to review the definition of "cash dealer" under the Financial Transactions Reports (FTR) Act 1988 to ensure that any new technology based payment system provider is considered for inclusion in that definition.

In particular, to the existing list of cash dealer obligations should be added the requirements to:

- **report as international funds transfer instructions under section 17B of the FTR Act all transactions with accounts of foreign financial institutions by any person but the bank itself; and**
- **maintain, in relation to each account held by a person other than the bank itself with a foreign financial institution, in a way that can be audited, all records as would cause the cash dealer to comply with Part III of the FTR Act.**

See finding 17

Nature of Proposal

The ATO relies upon information provided by AUSTRAC about suspicious or significant cash transactions to assist in ensuring compliance with taxation laws.

To ensure that network money does not circumvent the existing AUSTRAC reporting obligations the definition of "cash dealer" should be kept under review.

A "cash dealer" for the purposes of the FTR Act must be one of the defined categories as listed in section 3 of that Act. With the entry into the market of a number of players who will not necessarily by definition be "cash dealers", the FTR reporting obligations may be sharply challenged with, in particular, the increase in Internet and Stored Value card financial transactions.

To ensure equity between businesses in competition with each other and to preserve the integrity of the system administered by AUSTRAC on behalf of agencies such as the ATO, the definition of "cash dealer" needs to be kept under review.

Cost Considerations

AUSTRAC will need to devote some resources to reviewing the definition of "cash dealer".

International Co-operation

International co-operation is not required for this recommendation to be fully effective.

Expected Responses by Affected Parties

On equity grounds the banking and finance sector should welcome the bringing of new players in the market into the AUSTRAC net.

New entrants may be concerned with compliance costs.

Recommendation 18

The ATO should negotiate with providers of software used for electronic transactions to incorporate message digests, electronic date stamp or other available technology to ensure the integrity of transactional records.

See findings 24, 26 and 27

Nature of Proposal

Digital records can be altered without trace, unlike physical records where examination can detect alterations.

To counter this, the technology exists to enable an independent verification that the contents or date of a digital record have not been altered.

A message digest is can be used to confirm that a message has not been corrupted. Digital signature technology can be used to electronically 'date stamp' a document in a way that is difficult to alter.

Cost Considerations

This is difficult to quantify, but is unlikely to be onerous.

International Co-operation

This is difficult to estimate. Currently the majority of this type of software is sourced from within Australia, but with the expansion of Internet commerce most of this software could be sourced from overseas. International co-operation will be required to allow this recommendation to be effective, but this should not stop the ATO from attempting to get local suppliers to incorporate this feature in their products.

Expected Responses by Affected Parties

This proposal should have no effect on the general public as it is only seeking to secure and prevent accounting records from being manipulated.

Software companies may argue that this is adding complication and cost to their products without increasing the functionality. However the function will be advantageous to business to prevent commercial fraud and introduces a degree of equality between the integrity of paper based and electronic commerce based records.

Recommendation 19

The ATO should negotiate with major international credit card and electronic payment system providers and to seek international agreement to allow revenue authorities to obtain access to credit card transaction details held by credit card companies outside of the jurisdiction of the domestic revenue authority.

See findings 24 and 27

Nature of Proposal

In 1992 there were approximately 1589 cards with a debit or credit function for every 1000 people.¹¹² Approximately ten (10) percent of all transactions undertaken in Australia during 1995 were made with credit cards.¹¹³ There are approximately 365 million, credit card, ATM and EFTPOS transactions per year in Australia, totalling some 180 billion dollars.¹¹⁴ These figures exclude transactions undertaken with store and charge cards.

MasterCard Australia has recently advised that Australian merchants conducted approximately 15 million dollars worth of transactions over the Internet in the last twelve months.¹¹⁵

As commerce conducted via the Internet increases merchants may perceive competitive and other advantages (taxation, transaction concealment, reduction in bank charges, etc) in becoming a credit/charge card-accepting merchant of an overseas bank.

Currently no Australian banks are supporting credit card transactions over the Internet. They are informing all merchants that accepting Internet based transactions is a breach of their merchant agreements.

Australian banks are not proposing to introduce SET, a secure method of credit card transaction for the Internet, until late 1998. This may be too late, merchants who are looking for bank support may move offshore in an attempt to locate banks prepared to support their Internet activities. Currently several US financial institutions support and accept credit card transactions over the Internet.

This will generally move the records of credit/charge card transactions out of the reach of the resident revenue authorities.

Information that is currently held in overseas financial institutions is difficult if not impossible to obtain. To be able to access overseas credit card information (where a merchant has a credit card agreement with an overseas bank) it would be necessary to locate the financial institution and then establish if we can obtain information via the ATO's DTA with that country. The collection of information via a DTA is a long and time-consuming process.

The difficulty in the first place would be the detecting of a merchant accepting credit/charge cards through an overseas financial institution, and then locating the institution involved.

Currently MasterCard and Visa have information on credit card transactions that take place where the customer and merchant are not with the same financial institution. (ie. If a customer has a MasterCard from bank X and purchases some goods from a merchant that has a merchant agreement with bank Y, for details of that transaction to be recorded on the customers credit card statement details of the transaction need to go from bank Y to bank X.) MasterCard and Visa provide this service to their member financial institutions.

If a merchant and customer were with the same financial institution then MasterCard and Visa would have no knowledge of the transaction.

It is proposed that revenue authorities negotiate with the issuers of internationally accepted credit/charge cards (Mastercard, Visa, American Express and Diners Club, etc.) agreements whereby it is possible for them to obtain access, through these companies, to relevant financial information on residents or permanent establishments held by offshore 'member' financial institutions.

Cost Considerations

Difficult to quantify. Most of the information sought would be available electronically, as it would be part of the interbank settlement information. The costs involved in retention and retrieval of this information may be onerous.

International Co-operation

International co-operation will be essential for this recommendation to succeed as the information sought is out of the practical jurisdiction of the ATO. Unless international pressure is placed on these companies then it is highly unlikely that they would agree to the proposal.

Expected Responses by Affected Parties

The credit card/charge card industry is likely to be vigorously opposed to the recommendation.

The following recommendations are about ensuring that the banking and finance sector and electronic payment systems, which are crucial to the development of electronic commerce and a key point of leverage for tax administrators, are subject to appropriate arrangements.

Recommendation 20

The ATO should have a permanent watching brief over, and provide appropriate input into bodies concerned with the regulation and control of the financial sector in the post-Financial System Inquiry (Wallis) Report environment.

See finding 3

Nature of Proposal

The Financial System Inquiry made a number of recommendations on changes to regulation and control of the financial system. In the rapidly evolving post-Wallis environment, other changes may also be made to the way the financial system is regulated. There is a potential for controls to be put in place or altered to deal with the emerging electronic technology or the changed environment without consideration being given to the taxation consequences of the change. For example, the Financial System Inquiry did not have taxation as one of its focuses, and no submission was sought from the ATO. The Commissioner should have input into or at least be aware of and monitor any regulatory change which relates to the banking and finance sector in order to protect the revenue.

One of the suggested areas in which the Commissioner should become involved is in the development of codes of conduct with the financial institutions. Negotiating codes of conduct to deal with developing technologies such as phone banking, on-line banking or other electronic banking and payment products will potentially satisfy ATO requirements for appropriate audit trails and record keeping relating to these technologies without the necessity to impose legislative control.

Cost Considerations

Staffing costs could be met out of existing resources, particularly from the Banking and Finance segment in the large business and international area of the ATO.

Where submissions are required there may be some additional temporary staffing requirements.

International Co-operation

This recommendation does not require international co-operation to be fully effective.

Recommendation 21

The ATO should liaise with the Reserve Bank of Australia (RBA) to encourage financial institutions to report to the RBA on the amounts issued against specified electronic cash systems. The reporting should capture reissued electronic cash units where the re-issue of units is possible.

See findings 3 and 17

Nature of Proposal

In an attempt to measure and monitor the potential expansion of the electronic cash economy and thereby the cash economy, some consideration should be given to the collection of statistics on the amount of electronic cash that is issued annually by financial institutions.

The Deutsche Bundesbank has already signalled that they intend to make issuers of SVC's and electronic cash become banks and subject to prudential supervision. It is also a requirement of German law that the amount of electronic cash on issue be reported to the government for statistical and monetary purposes.¹¹⁶

Cost Considerations

Likely to be minimal. The financial institutions should have internal controls and reporting systems to monitor electronic cash systems for prudential reporting.

International Co-operation

Unknown, this will depend on the extent to which a foreign electronic cash scheme gains acceptance and use within Australia.

Expected Responses by Affected Parties

The reporting of gross amounts of electronic cash is unlikely to pose any major problems for the financial industry.

Recommendation 22

The ATO should negotiate with Australian banks to ensure that Nostro and Vostro accounts are not used to transfer client funds.

See finding 3 and 17

Nature of Proposal

An offshore bank's account held in a domestic bank is known as a Vostro account in the domestic bank and a Nostro account in the offshore bank.

These accounts are primarily designed for interbank settlements and transfers and are exempt from reporting. If a bank client placed cash, a bank cheque or draft into a Vostro Account on behalf of a client it would be transferred to the Nostro offshore account as an interbank transfer and not reported under the Financial Transactions Reports Act.

While we do not have any evidence of Australian banks using Nostro/Vostro accounts in this fashion, the nature of the accounts means that there is unlikely to be any evidence to find. Accordingly this is a prudent precautionary recommendation.

Cost Considerations

Indeterminate but expected to be minimal.

International Co-operation

Not required for full effectiveness.

Expected Responses by Affected Parties

The measure should only be visible to clients that make use of Nostro and Vostro accounts. They may react negatively if it is perceived that a loophole is being closed.

As the recommendation is about self regulation this may be viewed more favourably by the banks than imposed regulation.

Recommendation 23

The ATO should negotiate with AUSTRAC and other agencies to ensure that Network money is regulated in accordance with legislative and regulatory arrangements applying to physical cash.

See findings 3 and 17

Nature of Proposal

Tax administration in relation to the cash economy relies, in part, on the regulation of cash in the economy.

This recommendation seeks to ensure that network money is subject to comparable regulation as physical cash.

The use of cash in the economy is limited by its bulk and difficulty in transportation. Electronic cash does not suffer similar disadvantages.

In balancing the efficiencies of these payments and the restriction of the cash economy, some form of additional reporting requirements should be placed on the issue, redemption and deposit of electronic money.

Currently cash is regulated by several Acts of Parliament, like the Bills of Exchange Act. To the degree that electronic cash is styled or marketed as a replacement for physical cash it should be subject to the same level of regulation where possible.

Cost Considerations

Likely to be similar to the current cost of reporting cash payments to AUSTRAC.

International Co-operation

Similar international co-operation will be required to that currently required for the existing AUSTRAC reporting system.

Expected Responses by Affected Parties

Unlikely to be adverse as the existing arrangements for reporting cash transactions are understood and generally accepted.

These requirements are currently imposed in respect of cash. That aside, some industry resistance would be expected as it may require the modification of internal computer systems and procedures.

Recommendation 24

The ATO should negotiate with issuers of reloadable stored value cards and electronic cash systems to seek the following arrangements:

- **reloadable cards without proper identification of the recipient should have a maximum purse limit in the range of \$100 to \$500;**
- **electronic cash systems that allow for a balance of greater than an agreed value limit should require proper identification;**
- **proper identification for SVCs or electronic payment systems could be by way of:**
 - **linking the issue of the card or the opening of a electronic payment system account to an existing account with an Australian financial institution; or**
 - **obtaining documentary evidence of identity equivalent to that required to open an account with an Australian financial institution and retaining this evidence for the duration of the issue of the card or the life of the electronic payment system account.**
- **all loads and redemptions of value from a SVC or an electronic cash system must be accounted.**

See findings 3 and 17

Nature of Proposal

This proposal seeks to introduce equivalency between opening a electronic account and a physical account and to limit anonymous forms of network money to denominations no larger than the largest anonymous physical currency unit; \$100. An alternative view is that the limit should be associated with Automatic teller machine withdrawal limits, around \$500. One point of negotiation is to determine an agreed value in this range.

As tax administration relies on links between funds and the 'owners' of the funds, network money should be subject to comparable regulation as physical money.

Further, the cash economy is an existing challenge to the Revenue and network money should not be in a position to exacerbate the challenges associated with the cash economy.

Stored value cards issued without identification are functionally equivalent to cash and present the same taxation compliance challenges.

\$100 in the form of a \$100 note is the largest single unit of anonymous value in current circulation. To ensure that anonymously issued stored value cards are neither more or less attractive than physical cash, they need to be limited to \$100 in value. The "purse" size of a stored value card is the maximum value of the card.

Stored value cards with proper identification arrangements, either by reference to an existing bank account or through comparable identity verification undertaken prior to the issue of the card, can operate with larger maximum values.

Cost Considerations

Issuers of stored value cards with purse sizes in excess of the agreed maximum and that are not linked to an existing bank account will incur costs associated with verifying the identity of taxpayers.

International Co-operation

International co-operation is not required for this recommendation to be effective but international co-operation would improve effectiveness.

Expected Responses by Affected Parties

Issuers of stored value cards with purse sizes in excess of the agreed maximum and that are not linked to an existing bank account may raise concern over cost issues.

Recommendation 25

The ATO should convene a forum of interested agencies to properly consider a number of issues raised by consultants in relation to the banking and finance sector and electronic payment systems.

See findings 3 and 15-17

Nature of Proposal

Computer Money Consulting Pty Ltd (CMC) was after a competitive process selected to provide advice to the project team concerning term of reference 3, which reads:

To examine the potential impact on tax compliance of banking, finance and payment systems on the Internet.

The principals of CMC are: Dr Graham Wrightson of the University of Newcastle, an expert in electronic money and Mr Andreas Furche, also an expert in electronic money and the managing director in Australia of Digicash. In addition Dr Alan Tyree, a former professor at the University of Sydney and banking expert and Dr Ian Wallschutzky, a taxation specialist worked with CMC on the report to the ATO.

The CMC report contained 49 recommendations. These recommendations were considered by the project team. A number of recommendations were considered by the project team as worthy of further, detailed consideration, but requiring either inter-agency co-operation or legislative change for effective implementation. Some other recommendations were considered by the project team to be capable of effective implementation internally; others were not supported by the project team.

It is proposed that the ATO discuss proposals considered worthy of further consideration with interested agencies listed below.

- Treasury;
- Reserve Bank;
- AUSTRAC;
- Attorney-General's Department (including the Office of Strategic Crime Assessment [OSCA] if this is considered appropriate by AGD);
- Australian Securities Commission.

Payment systems on the Internet are of course a key factor in taxation compliance. Effective co-operation between agencies concerned will be extremely useful in managing this area.

Cost Considerations

Not fully considered.

International Co-operation

Not required for effectiveness.

Expected Responses by Affected Parties

Not applicable.

The following recommendations relate to Sales Tax.

Recommendation 26

The Australian Customs Service (ACS) should be requested to benchmark the current revenue leakage resulting from imports of goods tax and duty free under the concessions for goods of insubstantial or negligible value and to put in place a process to closely monitor the growth of activity in this area. The ACS and the ATO should jointly develop a range of policy and procedural options to respond to any unacceptable risks identified through this process.

See findings 28-30

Nature of Proposal

An immediate survey of this kind would establish a benchmark against which growth in activity as a result of Internet sales could be monitored. This will enable the ACS/ATO to identify trend lines and alert the Government to any projected significant increase in revenue leakage in a timely fashion.

Where an unacceptably high revenue leakage is identified, ACS and ATO should jointly develop a range of policy and procedural responses for consideration by Government. This exercise would need to take account of constraints on other major stakeholders including Australia Post, customs brokers, and freight forwarders. It should also be noted that any move to impose duty and sales tax, and/or to impose "administrative fees" for entry or clearance of the goods, will not necessarily increase revenue - it may merely reduce the level of activity as a result of the impact on the overall cost of goods purchased in this way.

Cost Considerations

The initial process of bench marking and monitoring the revenue leakage will not impact on taxpayers' costs of compliance. There will be a significant administrative cost involved in designing and conducting the survey to benchmark current revenue leakage. Further, subsequent decision to increase taxes or charges on these transactions will have a direct impact on costs for taxpayers and other stakeholders. Such a move would also involve increased costs of administration for ACS.

International Co-operation

ACS advise that most countries apply some threshold exemption limit for low value importations and that there are several international conventions that may need to be considered .

Expected Responses by Affected Parties

Responses are expected from the Australian Customs Service, Australia Post, freight forwarders, customs brokers, express couriers, private direct mail importers, small import businesses, small retailers and major retailers, especially in relation to freight issues.

Recommendation 27

The ATO should closely monitor production and marketing strategies adopted by industries likely to be impacted by the replacement of physical goods with on-line services (eg, music CDs, movie videos etc).

See findings 28-30

Nature of Proposal

This approach will allow for the early identification and advice to Government of any projected significant erosion of the Wholesale Sales Tax (WST) base. This will be a watching brief only as the WST in its current form cannot be extended to tax services of these kinds.

Cost of Compliance Considerations

Cost to the ATO and to industry should be minimal.

International Co-operation

Not applicable

Expected Response by Affected Parties

Industry players may not appreciate close scrutiny by the ATO and are likely to seek advice or assurances regarding the Government's attitude to any shift in production and marketing techniques.

Recommendation 28

The ATO in conjunction with Treasury should review the current Wholesale Sales Tax (WST) exemptions and classifications regime to identify items likely to be impacted by developments in technology.

See findings 28-30

Nature of Proposal

The WST contains many exemptions classifications and requires regular review to take account of changes in the market place. The new digital technology has facilitated the emergence of a range of new products that compete with existing goods but use radically different processes (eg, digital cameras which create images but do not apply a "photographic process") - as a result they may be taxable at different rates. A review of the exemptions and classifications in the WST is required to take account of these developments.

Cost Considerations

Cost of initial review should be minimal (2-3 staff for 3 months). Further costs would depend on extent of recommendations for amendments (if any) flowing from the review. The initial review would not impact on costs of compliance.

International Co-operation

Not required.

Expected Response From Affected Parties

There are likely to be "winners" and "losers" from any recommendations for changes to the exemptions and classifications regime.

Recommendation 29

The ATO and Treasury should jointly re-examine the issue of exemption from sales tax of tax advantaged computer programs (TACPs).

See findings 28-30

Nature of the Proposal

Currently, the value of TACPs is excluded from the taxable value of the host goods in which they are incorporated. When this provision was included in the WST legislation there was a relatively limited range of goods affected (ie, mainly computers and packaged computer software). Today, more and more goods incorporate a TACP, and the value of the TACP relative to the overall value of the goods is rising sharply.

This proposal would see the ATO and Treasury jointly examine the feasibility of including some or all of the value of TACPs in the taxable value of the host goods, and develop a mechanism for providing more certainty in the calculation of any excluded amount.

Cost Considerations

Cost to the ATO/Treasury of the initial review would be around 2-3 staff for 6 months. Further costs would be dependent on the nature of the recommendations flowing from the initial review. The initial review would have nil impact on costs of compliance.

The cost of compliance will be reduced if more certainty is provided as to the method of calculating any excluded amount. However, the actual amount of sales tax payable on goods incorporating TACPs may increase depending on the feasibility of taxing all or part of the value of the TACPs.

International Co-operation

Not required.

Expected Responses by Affected Parties

There are likely to be "winners" and "losers" from any change to the treatment of taxable value.

Attachment 1

Terms of Reference

- 1 To examine the impact of the information superhighway, in particular the Internet and electronic cash and commerce, on:
 - (a) taxes administered by the Commissioner of Taxation;
 - (b) specific tax issues such as source of income, residency, permanent establishment, central management and control, and related issues;
 - (c) evasion of tax laws, including money laundering, non-disclosure of income etc., and the capacity of existing Australian tax law and administration to deal effectively with such practices when undertaken on the Internet; and
 - (d) potential erosion of the tax base from commercial use of the Internet.
- 2 The development of appropriate audit methodologies for use in relation to electronic commercial activities.
- 3 To examine the extent to which compliance (eg. reporting requirements) may be promoted through organisations directly or indirectly involved in Internet commerce, such as Internet Service Providers, Network Providers, and merchants engaging in sale or service provision via the Internet.
- 4 To examine the potential impact on tax compliance of banking, finance and payment systems on the Internet.
- 5 To examine the potential impact on tax compliance of specific technical issues, such as security (including encryption), auditability and network bandwidth.
- 6 To examine implications for Australia's tax policy, administration, law and international taxation agreements.
- 7 To examine, in conjunction with other agencies having a specific interest in this area, evidentiary issues relating to Internet commerce.
- 8 In considering potential responses to issues identified, the cost impact will be assessed with a view to ensuring that no undue costs would be imposed on users or tax administration.
- 9 To liaise with external agencies with an interest in this area.
- 10 To seek input and submissions from interested parties.

Attachment 2

Acknowledgements

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In addition, Mr Phil McCrea, Mr Bob Smart, Mr Mark Andrews, Mr Andrew Waugh and Dr Ok Ki Lee from the CSIRO, Dr Alan Tyree, Dr Ian Wallschutzky, Dr Graham Wrightson and Mr Andreas Furche from the Computer Money Consulting Pty Ltd and Mr Colin Richardson and Dr Peter White from the La Trobe University Online Media Program acted as consultants to the project team and provided reports on technology, banking and finance and macro risk.

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Steering Committee

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Mr Michael Carmody	Commissioner of Taxation
Mr Peter Simpson	Second Commissioner of Taxation
Mr David Butler	First Assistant Commissioner, Small Business Income
Mr Jim Killaly	First Assistant Commissioner, Large Business & International
Mr John Landau	First Assistant Commissioner, Electronic Service Delivery
Mr John Growder	Assistant Commissioner, Information Technology Services
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Mr Jim Wright	First Assistant Secretary, Industry Policy Division, Department of Industry, Science and Tourism.

Attachment 3

Cross Reference Tables

Table of Findings

Finding	Summary of Finding	Recommendation
1	Electronic Commerce is still emerging, the emergence is rapid and needs to be constantly monitored	5-9
2	The lack of a legal infrastructure, until resolved, is likely to be an impediment to electronic commerce	1,3
3	Electronic Payment Systems are of fundamental importance to the efficiency of Internet markets	8, 9, 20-25
4	Australian bandwidth capacity is growing rapidly, but is not yet large enough for the delivery of some types of digital products	5
5	Easier to use interfaces will increase the number of consumers making use of electronic commerce	5
6	Electronic commerce will increase the numbers of businesses engaged in international trade and reduce the average transaction size	3, 6, 7, 9, 16
7	Website costs may be low, but successful commercial websites may require considerable investment	6, 7
8	It is likely that with maturity, the Internet will become dominated by large corporations	6, 7
9	The short term impact of electronic commerce may adversely impact some Australian businesses but this trend could be reversed in the longer term	7
10	No immediate appreciable impact on tax collections	5-9
11	Consequential on finding 9, there is potential for reduction in the tax base in the medium term, which would be corrected in the longer term	6, 7
12	The impact of electronic commerce on tax administration varies according to industry	6, 7
13	The impact of electronic commerce varies according to tax type	6
14	Within Income Tax, the impact of electronic commerce varies according to income type	2, 3, 6, 7
15	Electronic commerce will increase the scope for tax planning	2, 3, 6, 9, 25
16	Consequential to finding 6, increased participation in international trade raises some challenges for tax administration	2, 3, 5, 6, 9, 25

Finding	Summary of Finding	Recommendation
17	Some Electronic Payment Systems have significant evasion potential	8, 9, 17, 21-25
18	The application of the existing jurisdictional rules is doubtful	3
19	Allocative Tax rules may take some time to clarify	3
20	Enforcement rules should be easier to clarify than allocative tax rules	3
21	Broad based international co-operation will be required to administer domestic tax laws in relation to electronic commerce	2, 3
22	Taxpayer identity is less certain in the electronic commerce environment	7, 10-16
23	It would be possible to maintain a list of Australian Internet device addresses to aid identification	11-14
24	Electronic commerce technologies can reduce the availability and reliability of information required for tax administration	7, 10-14, 16, 18, 19
25	Encryption presents difficulties but is inevitable	16
26	In relation to the electronic commerce environment, the ATO will require access powers and certainty of records comparable to those in the physical environment	16, 18
27	The effectiveness of existing collection mechanisms is reduced by electronic commerce	16, 18, 19
28	Sales Tax will be adversely affected by the Tax Advantaged Computer Program (TACP) arrangements	26-29
29	Sales Tax will be adversely affected by digital technology	26-29
30	Sales Tax will be adversely affected by disintermediation	26-29

Table of Recommendations

Recommendation	Summary of Recommendation	Finding
1	The ATO should establish policies associated with e-commerce in co-operation with other relevant federal government agencies	2
2	The ATO should plan for cooperation with other revenue agencies	14, 15, 16, 21
3	The ATO should seek cooperation at international forums to seek certainty of jurisdictional rules, appropriate information sharing arrangements and to discourage the use of tax havens	2, 6, 14-16, 18-21
4	The ATO should be sensitive to the effect of regulation on electronic commerce	
5	The ATO should become an Internet Citizen	1, 4, 5, 10, 16
6	The ATO should continue to measure the risks to the tax system from electronic commerce	1, 6-8, 10-16
7	Tax returns to should capture email and commercial website addresses	1, 6-12, 14, 22, 24
8	The ATO should monitor developments in banking and financial sector	1, 3, 10, 17
9	The ATO needs to check taxpayer compliance in relation to offshore stores of value	1, 3, 6, 10, 15-17
10	The ATO should seek to have ACN numbers displayed on commercial websites	22, 24
11	Webshops [commercial Internet sites] should be licensed.	22-24
12	Organisations that operate or host webshops should be licensed	22-24
13	The ATO should participate in the development of a legislative and technical framework to monitor commercial IP (Internet) traffic	22-24
14	A record of the ranges of IP numbers (Internet addresses) of Australian based computers should be maintained	22-24
15	In relation to digital signatures, the ATO should specify the minimum evidence of identity requirements acceptable for tax administration purposes	22
16	The ATO should examine the practical effectiveness of s262A (general record keeping) of the ITAA in the electronic commerce environment	6, 22, 24-27
17	AUSTAC should be requested to review the definition of "cash dealer" under the Financial Transactions Reports Act	17
18	The ATO should seek to technologically increase the reliability and integrity of electronic commerce records	24, 26, 27

Recommendation	Summary of Recommendation	Finding
19	The ATO should seek to have access to credit card and electronic payment system records held outside of Australia	24, 27
20	The ATO should have a watching brief over the post Wallis banking and financial sector and provide input into any proposed regulation of the sector	3
21	The ATO should liaise with the Reserve Bank to require reporting of amounts on issue for various electronic cash systems	3, 17
22	The ATO should seek to stop the potential for Nostro / Vostro bank accounts to be used for client funds	3, 17
23	The ATO should seek regulatory neutrality between physical cash and electronic cash	3, 17
24	The ATO should seek a \$100 to \$500 limit on certain cash-like electronic payment systems	3, 17
25	The ATO should convene a forum to discuss electronic payment systems with interested agencies	3, 15-17
26	The ACS should be requested to examine revenue leakage from imports under the “insubstantial or negligible value” exemption	28-30
27	The ATO should monitor the production and marketing strategies of selected industries	28-30
28	The ATO in conjunction with the Treasury should review the current classifications under WST to identify items likely to be impacted by developments in technology	28-30
29	The ATO and Treasury should jointly re-examine Tax Advantaged Computer Programs (TACP) Sales Tax exemption	28-30

Footnotes

- 1 It is perhaps worthy of note that the ATO may be called on to approve, or at least express a position, on the acceptability of particular EDI standards to the extent that they relate to records which may have to be kept for tax purposes. The ATO's base position would include adequacy of an audit trail, integrity of the records kept, period of retention, and so on.
- 2 Some of the opportunities are mentioned in the publicly available "FAQ" (Frequently Asked Questions) related to this project and available via the ATO's web site at <http://www.ato.gov.au>
- 3 Such "internal" networks may be worldwide, as in the case of some large companies, and use the Internet as a transport mechanism, with encryption, tunnelling and other procedures to ensure security.
- 4 "buying and selling" is used as a simplification to cover other kinds of commercial deals involving the exchange of money and property
- 5 Also called "webshops". Webshops are websites that sell goods and services.
- 6 The basic process is for the buyer to fill in, online, an electronic form providing for details such as buyer's name, credit card number etc.
- 7 Not just computers. Many other machines can be assigned an IP number and productively linked to the Internet.
- 8 See the article at p 52 of the June 1997 edition of *Australian Personal Computer*, which outlines such a device currently on sale.
- 9 Perhaps a different result would have been reached in *AGL v FCT* (83 ATC 4800) if this capability had been available.
- 10 Generally speaking, the same company provides both the server software and the browser software, and there is a public standard (HTML) which governs how various types of data (eg, text, pictures) is displayed. There are commercial benefits to server software providers to making available the user software gratuitously, however the reasons are complex and cannot be done justice here.
- 11 Typically this is downloaded to the user's computer and played through speakers attached to the computer using specialised software.
- 12 The upper figure is from the CSIRO report. Not all users would necessarily have their own computer equipment. Some would be accessing the Internet from work.
- 13 CSIRO Report.
- 14 UNIX server software packages such as Apache and HTTP'd currently have the largest share of the Internet server market. The medium to long term prognosis for these players in the server market is arguably bleak in view of Netscape and Microsoft's control of the *user* software market and the substantial efforts they are putting in to control the server market as well.

15 This explanation, and distinction, has been adapted from the CSIRO
report, page 10.

16 This is not a black and white distinction. There are no totally
unaccounted *viable* systems, and accounted systems may present
insuperable compliance problems if the central issuing agency is based
in a tax haven and refuses to make its records available.

17 A security protocol for credit cards involving encryption developed by
a consortium of leading international credit card and technology
companies.

18 See PR-44-97 of 24 June 1997 issued by FDIC, which reads in part: " In
the General Counsel opinion letter, published in the Federal Register on
August 2, 1996, the FDIC concluded that in most cases stored-value
cards are not protected by deposit insurance because the issuing
institution would typically maintain a single pooled account to hold the
funds represented by all their customers' stored-value cards."
19 July 1997.

20 Scalability is probably the hardest test. A system that functions
acceptably with 5 million transactions a week may fall over if
transactions increase to 20 million a week.

21 U.S. evidence indicates that Internet consumers tend to be young, male,
and affluent.

22 See Press release at <http://telstra.com.au>

23 See <http://www.consultco.com.au/>.

24 See <http://www.neilsen.com.countries/australi/ausurv-a.html> and
<http://www.agb.com.au/online/welsome.html#august>

25 At <http://www.consultco.com.au>

26 Due mainly to survey methodology, survey timing, and sampling
differences. The figures here are drawn from estimates of five major
research firms in *Online Shoppers: Their Numbers are Growing*,
Connie Goglielmo at
<http://www.zdnet.com/intweek/print/970210/inwk0014.html>.

27 The figures here are drawn from estimates by Forrester Research
Incorporated, The Yankee Group and International Data Corporation,
reported in *Online Shoppers: Their Numbers are Growing*, *Connie*
Goglielmo at
<http://www.zdnet.com/intweek/print/970210/inwk0014.html>.

28 <http://www.imas.com/demographics/projsals.html>

29 Australian Financial Review, 4 June 1997, Breakthrough to cyber
commerce, Andrew Cornell

30 See <http://www.cyberatlas.com/market.html>

- 31 Note: This would not include persons connected to networks peripheral to the Internet (eg. Compuserve, America Online and Delphi) and people connected on an offline basis through only one point of presence for services like eMail and file transfer. If these were included then the total Internet population would instantly double. The people polled by all these organisations were 'real time' users of the Internet in possession of a valid IP number.
- 32 Morgan Stanley - February 1996 and International Data Corporation - October 1996.
- 33 See <http://www.cyberatlas.com/emoney.html>
- 34 As their report deals purely with household usage, and ignores the business and academic sectors.
- 35 Obtained on 18 July 1997 from Luke Carruthers, director of Magna Data and one of the directors of ADNA.
- 36 The figures do not include domains for which only MX and not NS records exist, nor the org.au domains. There are 2000-2500 additional MX domains. MX domains are those which tunnel their IP numbers and/or use DHCP to provide corporate access to the Internet, in much the same way as the ATO is planning to do so through its firewall project. Other uses of MX domains include intranet and other networks which use the Internet merely as a carrying medium for eMail and like services.
- 37 <http://www.nw.com/zone/WWW/dist-bynum.html>
- 38 Available from <http://www.yellowpages.com.au/>.
- 39 At <http://www.edime.com.au/trc/info.html>
- 40 This figure would be greatly expanded by the use of dynamically allocated IP numbers.
- 41 Class A networks require the greatest capital expenditure to construct and maintain. They can generally be associated with network providers and only 4 exist in Australia. Class B networks are generally associated with wholesale Internet service providers and some large corporate networks. Class C networks are generally associated with retail level network service providers, although Class A and B networks may also provide retail Internet connections and Class D addresses are the lowest level, and often temporary connection to the Internet such as by home based users.
- 42 At <http://www.nw.com/zone/WWW/report.html>
- 43 From *Australia's Peak Demand for Internet bandwidth: a Modelling and Forecasting Methodology*. Richardson C. Latrobe University Online Media Program, Dec 1996.
- 44 The simplest explanation of a proxy cache is a temporary storage area kept by service providers in which they cache the most popular Web pages and other Internet downloads, so that subsequent requests for same can be uploaded faster and without the need to go to the remote or overseas site.

45 Discussed in section 6.7, "Free Rides, Standards and Commoditisation"

46 Software.net, www.software.net

47 Egghead Software, www.egghead.com

48 Netscape, www2.netscape.com/newsref/pr/newsrelease17.html

49 Robotham, Julie (1997), "Threat Coming Down the Line" in *Sydney Morning Herald*, 24 April.

50 <http://www.cdeurope.com>

51 <http://www.musicmachine.com>

52 <http://www.musicblvd.com>

53 <http://www.emusic.com>

54 <http://www.globalmusic.com>

55 <http://www.internetnews.com/ec-news/cur/1997/06/2002-pay.html>

56 <http://jcmc.msc.huji.ac.il/vol2/issue2/janower.html>

57 *ibid.*

58 Telstra Corporation Ltd (1997), "Telstra Atlas: The Integrated Travel Management System", Marketing Leaflet

59 Source: web sites and *Australian Financial Review*, May 16 1997 Weekend p.14

60 <http://www.autobytel.com>

61 <http://www.dealernet.com>

62 <http://www.edmunds.com>

63 Example extracted from material provided by the Department of Foreign Affairs and Trade.

64 www.ozemail.com.au/~whips/, example extracted from material provided by the Department of Foreign Affairs and Trade.

65 Consultations with well-informed representatives from these industries confirmed that, whilst no statistically reliable data were available, Internet-based commerce as yet accounts for only a very small proportion of total commerce, less than 1 per cent of total sales in these industries.

66 Colin Richardson and Peter White of the La Trobe University Online Media Program

67 <http://www.iitf.nist.gov/eleccomm/ecommm.htm>.

68 The U.S. has already acknowledged this, in adopting residence based taxation as a preferred base for tax.

69 See CSIRO report for detailed explanation. Tunnelling is "wrapping up" one IP packet inside another.

70 CSIRO report

- 71 p 147, *Internet Report* produced by CSIRO for the ATO.
- 72 The source code of the latest version of PGP has been exported from the U.S. in book form; the book is scanned and the electronic source code then compiled.
- 73 “User interface design is a very difficult business. It combines two awkward disciplines: psychology and computer science. These disciplines have very different cultural backgrounds: psychology is concerned with people; computer science with computer machinery. Psychologists are supposedly sympathetic and understanding; computer scientists are supposedly mathematical and precise. Psychologists have enough trouble understanding people even when they are not using computers; computer scientists have enough trouble getting programs to work even when they are not being used by people. Good interface design requires these two perspectives to be united.” *User Interface Design*, Harold Thimbleby, 1990, pp 6-7
- 74 Advice from Graeme Kennelly, General Manager, Telstra Internet. According to Graeme, Japanese consumer electronics companies are likely to take a leading role in this.
- 75 This includes profitable online services such as gambling and pornography. Gambling in particular raises serious concerns for State Revenue authorities because Internet gambling is becoming quite common and is likely to be able to offer better returns (partly because the Internet “casinos” operate from tax havens) than comparable businesses in Australia.
- 76 Telstra has recently introduced a high bandwidth service at prices affordable to consumers, with pricing on a capacity usage rather than time. Pricing on this basis is increasingly likely: see the discussion by Paul L Sagawa, “The Balkanisation of the Internet”, in *The McKinsey Quarterly*, 1997, 1
- 77 *The Balkanisation of the Internet*, McKinsey Quarterly, 1997, 1 p 126.
- 78 This argument is also well-developed in Australia.
- 79 The Macquarie Dictionary, 2 ed. 1991.
- 80 Information provided at OECD CFA Working Party 8, June 1997.
- 81 The practice of www.amazon.com.
- 82 Davidow, William (1997) “The Value Chain: The buck no longer stops here” in *Forbes* (February 24) p. 24
- 83 Note: most books and clothing are currently exempt from sales tax
- 84 A similar conclusion is reached in an article in the “Economist”, *Taxes slip through the Net*, 31 May 1997, p 20.
- 85 <http://www.microsoft.com/corpinfo/press/1997/Apr97/DigTVPr.htm>

86 Some of the findings are taken from a paper prepared by Colin L. Richardson and Peter B. White of the Online Media Program at La Trobe University [OMP] which was the subject of subsequent discussion between OMP and the ATO. The “OMP” references in the final column are to the initial paper and to the later discussions.

87 This is a subset of “identity” but is complex enough to warrant a section in its own right.

88 See CSIRO report, page 98.

89 CSIRO recommendations [5.12] and [5.13].

90 This is not quite the same as RFC 1825 which is concerned with both (a) the data received is the same as the data sent; and (b) the claimed sender is the actual sender.

91 See discussion on this point in the “Growth” issues section. In summary, these export controls are ineffective.

92 This is normally done with a program called “finger”.

93 page 128.

94 There are two kinds of editing, interactive and batch. Batch editing leaves an audit trail of the changes made, where it is possible to go back to the previous version if desired. The basic equation is: Old file + amendments = new file.

95 This perception underlies the observation in the “Leverage” section concerning external recording of certain details of completed transactions.

96 see recommendation principles, section 10

97 This caution is sounded a number of times by CSIRO.

98 Refer to CSIRO Paper concerning analysis of digital transaction trails. Tracing would be directed at financial transactions and would be in conformity with appropriate access provisions.

99 This is readily implementable by a URL where the directory name serves as a password to the relevant information.

100 These two products dominate the web browser market because of their high quality and (perhaps more importantly) because they are free. (Evaluation copies are free for Netscape).

101 Excluding the Income Tax Assessment Act, and other tax assessment Acts.

102 ‘Taxbots’, as they came to be called.

103 There are now more than 150 auction sites on the Web, selling everything from industrial machinery to rare stamps. Some of these sites are: <http://www.onsale.com>, <http://www.auctionweb.com>, and <http://www.fastparts.com>.

- 104 Telstra has recently introduced high bandwidth services at prices affordable to consumers, with pricing on capacity usage rather than time. Pricing on this basis is increasingly likely: see the discussion by Paul L Sagawa, "The Balkanisation of the Internet", in *The McKinsey Quarterly*, 1997, 1.
- 105 Notably Linux, HTML, site design, cheap access to bandwidth.
- 106 See OMP Report.
- 107 Richardson and White cover this point in the following way: "An additional word of caution is warranted. Because of rapid technological and industry change, some commentators have likened a year in the Internet-related industries to a "dog-year". "Internet years" look to humans as human years look to dogs, ie about one-sixth as long." *Electronic Commerce and the Australian Taxation System: an exploratory study of six industries*.
- 108 Some of the factors supporting this conclusion are mentioned in an article in the "Economist" of 31 May.
- 109 Paul L Sagawa, "The Balkanisation of the Internet", in *The McKinsey Quarterly*, 1997, 1
- 110 Approximately 1.2 to 1.4 million, though a significant proportion of these would not be regular users.
- 111 Clearly this requirement can apply also to individuals, and for service as well as compliance purposes.
- 112 Bank for International Settlements, Payment System in Australia. P45.
- 113 Singh S, The Social Impact Of Electronic Money, p8
- 114 Payment System Council Annual Report 1995/96 p53.
- 115 Australian Financial Review, 4 June 1997, Breakthrough in cyber commerce, Andrew Cornell
- 116 Electronic Money on and off the Internet - The European position Dr Hans-Jürgen Friederich. A presentation at the Australian Computer Money Day 1997.