Global eT@xation: Competing Visions

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Abstract
The Organization for Economic Cooperation and Development (OECD) places the issue of taxation of cross-border e-commerce transaction as one of its top four projects for investigation. In January 2001, some member countries agreed to a series of guidelines on how to apply existing tax treaties to Web transactions. After discussing potential threats and challenges facing etax administrators and possible solutions, the researchers report on the global momentum towards Extranets for collaborative knowledge management. Previous research indicated a need for a global etaxation Extranet for knowledge management based on the principles of the Cochrane Collaboration in the health sciences. These preliminary findings have been strengthened by parallel moves by the International Organization for Standardization (ISO) in setting up a global Extranet. The global imperative for harmonization of Internet commerce tax initiatives is reflected in contemporary interest in Europe in the redefinition of business requirements and processes related to corporate tax obligations.

1. Introduction
In the physical world, location determines many of the ways in which commercial activity occurs. Business, legal, government and taxation practices and regimes vary widely so the challenge is to cope with the results of placing a global,
standardized communication infrastructure, namely the Internet which is insensitive to geography, on this environment [25]. Many governments and organizations are working frantically to untangle the troublesome questions of taxation of cross-border e-commerce transactions. As usual, technology is advancing at such a fast rate that legislators and law enforcement agents are struggling to keep up. The international tax regime faces significant challenges because of the ability of businesses to move into low tax jurisdictions at the touch of a key. Global taxation laws will have to adapt to the information age [10]. Put simply, tax systems, which are geared for traditional economic relationships, are ill equipped to deal with the new type of economy that is emerging from the electronic revolution. Legislation traditionally recognizes tangible goods, transactions and relationships – it is struggling to cope with the “virtual economy” which is made up of electronic goods and services, such a software, which no-one can really see or touch [16]. Each day, people from all over the world exchange money over the Internet for goods, services, information and entertainment, yet no one can say exactly where these transactions occur. By maintaining that Internet transactions occur in no one physical location, e-commerce sellers have avoided collecting the sales taxes that burden their brick and mortar counterparts. [21] The WTO report of 1998 pointed out that if Internet transactions are not taxed, this would give the medium a considerable advantage over other means of commerce that are taxed. [35] A study by the University of Texas concluded that the Internet in the US is now the 18th largest economy in the world, and that the states in the US are missing out on $US300 million in sales tax on Internet transactions. [13] However, the state of Texas, which collects no income tax, projects it could lose $1.7 billion a year by 2003 if businesses are not required to collect sales tax from e-commerce customers [31]. One sage has declared that sales tax is road-kill on the information superhighway [4].

This paper identifies weaknesses in unilateral prescriptions for tax policies for Internet Commerce in terms of complexity and knowledge management. Some pundits have called for the setting up of a World Taxation Organization similar to the United Nations, World Bank or the World Trade Organization. However, experience, especially from the European Union, has shown that countries are reluctant to give up their right to set their own taxes [3]. Section 2 of this paper outlines the background of the Internet Taxation problem and gives pertinent examples of how the Internet is impacting the revenue streams and economies of several countries. Section 3 outlines the research methodology used for this paper, while section 4 describes how the International Organization for Standardization (ISO) is setting up a worldwide Extranet. The ISO, which manages the development, maintenance and distribution of over 11,000 ISO standards in English, French and Russian, is a federation of national standards bodies from more than 120 countries. At any one time, there are about 7,000 projects and around 200,000 people contributing to ISO standards development [14]. The applicability of the ISO’s collaborative Extranet as an example for a global eTaxation Extranet is canvassed. Section 5 outlines proposals for further research and concludes the paper.
2. **Background to the Problem**

To gain an understanding of the complexity of the issue, Cochrane (2000) states:

*How do you collect taxes to support the infrastructure of a nation when no money is exchanged, or is in such small amounts you can't afford to collect it or police the system? With micro-payments, a million transactions of one cent is bad enough but charging purchase tax of say, 17 per cent, on individual items is impossible. Exchanging bits, goods and services with no means of interception and recording is even worse. This could become a macro economy of micro things, well beyond any fiscal process yet in place or conceived [7].*

**Overview of eTaxation Threats and Challenges**

The Internet allows trade to be conducted in an environment that does not necessarily create independent audit trails. The ability to collect tax is contingent on knowing who is liable to pay it. Taxpayers may become increasingly difficult to identify as anonymous digital money and strong encryption techniques are developed. [3] The challenge for taxation officials is keeping up-to-date on such a wide range of new electronic cash systems and in finding ways of following up on such transactions. For example, the use of Palm Pilots to email dollars in a consumer-to-consumer (C2C) business model enables such transactions to bypass tax authorities. The rise of peer-to-peer networks (P2P) on the web, such as Napster and Gnutella, will enable companies and people anywhere to locate trading partners on the fly, complete transactions swiftly, securely and efficiently without the need for any central aggregator or facilitator. [23] The impact of bypassing central servers would make tracking of transactions even more difficult for tax authorities.

Electronic entities on the Internet are not easily linked with their physical equivalents, making identification and recourse difficult. The notion of what constitutes a Permanent Establishment for taxation purposes is a moving target. In January 2001 the OECD's Committee on Fiscal Affairs agreed on a provision that a Web site does not in itself constitute a permanent business establishment for tax purposes. The location of an Internet Service Provider (ISP) does not, except in very unusual circumstances, place a business using that ISP under the host country's tax jurisdiction [30]. However consensus has not been reached with all member states, as Spain and Portugal stated that they do not consider physical presence in a country to be a requirement for the existence of a Permanent Establishment. Under this circumstance, a company doing business in a country via a Web site could be taken as being established in that country for tax purposes [30].

The Internet lowers the cost of international trade, potentially increasing the number of participants and, therefore, the number of businesses engaged in profit shifting activities. There are many nations that would be happy to give Internet transactions a zero sales tax rate so they could entice businesses to host sites in their countries. Tax competition, according to the OECD, is often a *beggar thy neighbour policy* that reduces government tax revenues. The Internet makes it much easier for
business, such as multinationals, to shift their activities to low-tax regimes, such as the Caribbean tax havens that are physically a long way from customers but virtually only a mouse click away [3]. The former French head of the European Bank for Reconstruction and Development used a hotel metaphor to describe France’s plight regarding tax competition. In his analysis, the guardians are the hosts and the wealth creators (entrepreneurs and business people) are the potential guests. Like a hotel, each country must make itself attractive to its guests or they will stay somewhere else. He maintains that Hotel France will find itself empty because of its regime of high taxes and red tape. French small businesses are registering their businesses in Britain to save on social security, health and life insurance payments [2]. On the other hand, British bookmakers, such as Ladbrokes and William Hill, have set up operations in Gibraltar to avoid paying the 9% tax on bets in England – they offer instant tax-free betting online [15].

Global companies are engaged in setting themselves up within virtual enterprises at the hub of loosely knit alliances of local companies linked by global electronic, transport and human networks. Such enterprises are project based and developed around complex networked information systems. The information system is the virtual enterprise. It is the headquarters and can be based virtually anywhere in cyberspace. [2] These global enterprises can enliven national economies but can also destroy them. For example, rumours can spark currency speculation that can wreck the fiscal policy of a country e.g. the 1997 collapse of the Thai baht and Malaysian ringgit.

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’. This means that producers and consumers are connected directly, cutting out the middlemen such as wholesalers, distributors and retailers. However, by studying Figure 1 it is clear that the Australian Tax Office has been able to identify potential taxing points. Elimination of middlemen forces taxation authorities to collect smaller amounts of revenue from a larger number of taxpayers, thereby increasing the administrative and compliance costs of the taxation system. As well, studies have shown that e-cash combined with smart card technology

could be used to smuggle currency in and out of countries in violation of those [countries’] laws. It can also be used to transact normal business without the knowledge of the authorities which would make it very useful to the ‘underground economy. [27]
Tax havens and offshore banking facilities are now within the reach of the 'average' taxpayer - not just the wealthy ones. Bermuda hosts a thriving, innovative insurance industry that supplies 22% of the country's GDP in taxes - these are levied on consumption and employment rather than on profits or other income. The Cayman Islands claims it is the world's fifth largest financial centre and is home to forty-five of the world's biggest banks. Tax havens account for 1.2% of the world population and 3% of the world's GDP. Such havens have 26% of the assets and 31% of the Net profits of American multinationals (though only 4.3% of their workers). [5]

**Overview Of Some Proposed Solutions: International Cooperation**

Our previous research has put forward an international, collaborative approach to eTaxation issues however, Pinto (1999)[32] has identified four traditional barriers to international cooperation as outlined in Table 1 below.
Barrier | Comment
---|---
National Sovereignty | Tax administrators are not obliged to provide each other with administrative assistance.
Secrecy | Bank secrecy laws require banks to maintain absolute confidentiality, regarding their clients' accounts and transactions, except where disclosure is required as in criminal investigation by domestic police.
Reciprocity | Small tax administrations fear that they will become branches of larger administrations.
Tax Competition | This has been seen in countries such as Ireland, islands in the Caribbean and Gibraltar.

Table 1: Traditional Barriers to International Cooperation (based on Pinto, D (1999) Taxation Issues in a World of E-commerce, pages 1 -3).

Examples of Global Cooperation

Although more research is needed to find ways of making cooperation attractive to sovereign nations, there are many examples of collaboration, on a global basis, to bring about change. Examples are set out in the following table 2. As with any international organization, conflict resolution is vital.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Work</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTO/ITU</td>
<td>Telecommunications access agreements</td>
<td><a href="http://www.itu.int">www.itu.int</a> <a href="http://www.wto.org">www.wto.org</a></td>
</tr>
<tr>
<td>UNCITRAL</td>
<td>Revision of commercial law and for digital signatures</td>
<td><a href="http://www.uncitral.org">www.uncitral.org</a></td>
</tr>
<tr>
<td>WIPO</td>
<td>Intellectual property rights</td>
<td><a href="http://www.wipo.org">www.wipo.org</a></td>
</tr>
<tr>
<td>WCO</td>
<td>Customs clearance simplifications</td>
<td><a href="http://www.wcoomd.org">www.wcoomd.org</a></td>
</tr>
<tr>
<td>W3C</td>
<td>Internet standards</td>
<td><a href="http://www.w3.org">www.w3.org</a></td>
</tr>
</tbody>
</table>

Table 2: Global Cooperation on a Continuing basis (Source: Pinto, D (1999) Taxation Issues in a world of Electronic Commerce, page 29)

Rise of Government Regulation

There are signs that governments are now moving to regulate cyberspace. The United States has endorsed the essence of the Council of Europe's cyber crime treaty which aims to harmonies laws against hacking, Internet fraud and child pornography. Countries have collaborated to fight the threat of jurisdictional arbitrage where currencies, securities or commodities are purchased in one market for immediate resale in others, in order to make a quick profit from unequal prices. Conflict of law issues are being solved by devising uniform international standards, for example, the World Intellectual Property Organization's (WIPO) copyright treaty of 1996 which strengthened international copyright rules [8].
**Tracking Credit Card Purchases**

Most Internet transactions are paid for by credit cards, which leave a trail, so the records could be targeted by taxation authorities to prevent consumers avoiding Value Added Taxation (VAT) / Goods and Services taxation (GST) by purchasing products overseas. Purchasers in Australia have to pay for the transactions using one of only 5 or 6 credit cards and the Australian Tax Office (ATO) has the power to access credit card records. [1] However, the difficulties in tracking such credit card records to trace Internet purchases would be enormously challenging and time consuming. To the question of how to determine if a customer is outside of Australia when making a sale via the Internet, the ATO has stated that the best means for determining an overseas customer is to collect three pieces of information:

- email address
- credit card first four digits
- and a checkbox with a statement about not being resident in Australia.

If this information is collected on each sale, the ATO will be satisfied. If less information is collected then the supplier may have to justify why they did not collect GST on the sale. [12] This raises privacy issues, as many overseas buyers would not be pleased to hear that a taxation office in a foreign country was capturing their email addresses.

**The Uniform Business Locator**

McCluskey (1999)[23] identified another possible solution for tracking of commercial transactions on the Internet, namely the Uniform Business Locator (UBL), which would uniquely identify a business or trader and attribute that entity to a specific country. This is analogous to the Australian Business Number put in place in Australia with the introduction of GST in July 2000. Such a system would need to be able to cater for multiple mappings of a company to varying jurisdictions. He stressed that all UBLs would be contained in a planet-wide distributed database similar to the domain name system. The UBLs could be randomly generated, unique alphabetical strings, except for the part designed to identify the country. This latter would be done using the current two letter ISO country codes. To partly solve the problem of authentication of the company or trader concerned McCluskey suggests binding payments to the UBL – putting somebody else’s UBL would lead to the money going to another company.

**Other Technology Based Solutions**

Governments can use filtering software and IP address tracking to control users. China keeps its citizens behind the Great Firewall, using software to block access to sites with unwanted content. With the arrival of Internet Protocol V6 (IPV6) the new, expanded IP address will enable the placing of a unique serial number for each
computer's network connected hardware so every data packet sent will carry a user's electronic fingerprint. [8]

Several software companies provide products designed to ensure compliance. Web sites such as http://taxandlegal.com provide a practical guide, constructed by WorldPay plc in alliance with Deloitte & Touche and Berwin Leighton, to help e-business practitioners meet tax and legal obligations. Their software includes VATExpert, TAXExpert and Privacy Builder. Mercury2 helps e-commerce companies to do business globally. **Mercury2 GCS (Global Commerce System)** is a Web-based solution that automates the manual processes of international trade logistics. The system includes product classification, landed cost calculation, screening for regulatory compliance, and documentation. These back-end applications integrate seamlessly into e-commerce sites and e-marketplaces. Other compliance type websites include http://www.taxware.com, http://www.MyCustoms.com and http://www.tariffic.com. Some other of the technology based solutions that are currently available are presented in the table 3 below.

<table>
<thead>
<tr>
<th>Technology solution</th>
<th>Details</th>
<th>Information Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Certificates</td>
<td>to verify identity of online counterparts e.g. ABN</td>
<td>Australian Tax Office <a href="http://www.ato.gov.au">http://www.ato.gov.au</a></td>
</tr>
<tr>
<td>Digital Notarization</td>
<td>to verify electronic records have not been altered</td>
<td><a href="http://www.veracity.com/tutorial/notarize_ideas.html">http://www.veracity.com/tutorial/notarize_ideas.html</a></td>
</tr>
<tr>
<td>SET</td>
<td>security, authentication and encryption</td>
<td><a href="http://www.setco.org">www.setco.org</a></td>
</tr>
</tbody>
</table>

**Table 3: Technology Based Solutions (Source: based on Pinto, D (1999) Taxation Issues in a World of E-commerce, page 47-48.)**

### 3. Research Methodology

This paper follows on from previous studies on Internet Taxation undertaken by the researchers from 1997 –2000. These studies have been reported in a series of papers, commercial publications and book chapters. [11,16,17,18,19,20]. The research culminated in the proposition that a collaborative Extranet may well become the preferred delivery mechanism for knowledge management in eTaxation administration. The research here reports on the examination of a global international Extranet set up by the International Organization for Standardization that could serve as an exemplar for the eTaxation authorities.
The research domain of electronic commerce is particularly challenging, because of the lack of established definitions, and the high volatility of the phenomena [6]. Due to the present state of knowledge, a qualitative and exploratory research approach was used, especially in this area, when theoretical propositions are few and field experience is limited [9]. Exploratory research is useful for obtaining ideas for potential new strategies and opportunities. Because the purpose of focus discussions is to surface aspects, impacts and implications that are of concern [6], focus group discussions were held with an international cross section of researchers, business persons, policy advisers and academics.

Proposals

Traditional management processes need to be revisited in order to cope with the complexity and management of eTaxation issues. It is proposed that the principles behind the virtual organization could be adapted to this challenge. Such a structure has all members of the organization virtually and instantaneously linked with all personnel and information, both horizontally and vertically [29]. The networked organization has arisen from two concepts:

- networked groups foster communicative environments
- networked firms using Intranets and Extranets allow large complex organizations to provide superior responsiveness to staff, trading partners and clients.

The advantages of a shared networked approach are shared:

- goals
- expertise - through information aggregation
- work
- decision making though collaboration
- timing
- accountability - sharing responsibility, accountability and trust
- recognition - cooperative work means shared rewards and recognition. [29]

The networked economy can create a sharing environment and one of collaboration and work aggregation. Such a model has been used in Evidence-based Medicine as illustrated by the Cochrane Collaboration [18] (outlined in Section 4). In the Internet Taxation arena, much of the work is knowledge work requiring the processing and managing of information. Such knowledge does not exist in isolated compartments. Its capacity to grow is enhanced by expertise that must be obtained from as wide an expert base as possible. This means people with different perspectives, experiences, age, gender, knowledge and cultural traits are required. [29] People worldwide provide the best base for enriching knowledge and creating worthwhile innovation - linking in with the Cochrane Collaboration principles of building enthusiasm, avoiding duplication and minimizing bias. Virtual
organizations must be adaptable, resilient and innovative! Figure 2 illustrates the application of network characteristics and the Cochrane Collaboration Principles to taxation objectives in order to achieve stated aims. The strategic use of technological infrastructure to establish and maintain a knowledge backbone can only survive when supported by a culture that embraces and facilitates the use of new technologies. [24]

**Figure 2**: Issues management framework showing the linkage between Network Characteristics and the Cochrane Collaboration Characteristics.

Governments are being forced to realize that technological innovators and their agents are wealth creators. This small number of people are recognizing their scarcity value and using telecommunications technology to sell themselves on the open, global market. International computer networks have made the global economy a reality. [2] Thus, the current reliance by taxation authorities on intermediaries (e.g. employers) to collect taxes, on taxpayer cooperation (i.e. adequate business records) and on legal precedent to establish tax liabilities are likely to be ineffectual as the basis for compliance with taxation law in electronic commerce, for revenue management or for the selection of taxpayers for audit. The researchers justified the knowledge management approach by citing the compatibility of Extranet facilities with Cochrane’s principles, citing earlier research on Knowledge Domains [11].
4. The ISO Extranet

Definitions
The glossary (whatis.com) defines an Extranet as 'a collaborative network that uses Internet technology to link businesses with their suppliers, customers or other businesses that share common goals.... An Extranet can be viewed as part of a company's Intranet that is made accessible to other companies or that is a collaboration with other companies'. Riggins & Rhee [34] put forward the idea of the Extranet to bridge the gap between Intranet and Internet applications. In order to allow untrusted sources safely into a network, companies need to be able to identify individual users and tie those identities to varying levels of network access. In the Collaborative Extranet model, taxation administrations and policy researchers would have access to taxation policies and rulings, stored in a knowledge base (electronic libraries) housed in an Extranet [18].

Background Cochrane Collaboration in Medicine
Research results in medicine must be disseminated and implemented in practice, if health outcomes are to be improved, but empirical studies have shown there is an eight to thirteen year time lag (depending on the specialty) between a treatment being proven to work and its adoption as standard practice [28]. The major reason for this is the sheer volume and exponential growth of medical literature and the advances in all areas of medical research. Medical practitioners also find it difficult to make sense of conflicting research findings in a particular area. The same difficulties could be said to apply to the huge outpouring of information surrounding electronic Internet commerce - coupled with the problem of very little empirical research in a discipline that is barely five years old.

In the medical field, the discipline of Evidence-based Medicine was developed for the purpose of bringing research and practice closer together and to reduce the time lag between the development of clinically proven treatments and their use in everyday medical practice [28]. Thus Evidence-based medicine is a structured process in which all available research is combined to support medical decision-making. It aims to

- find the best available treatments for particular medical condition based on a synthesis of the research literature
- spread and apply that knowledge in clinical practice.

The methodology employed in Evidence-based Medicine follows three steps as illustrated in Figure 3 that follows.
The Cochrane Collaboration is an international, not for profit organization that prepares, maintains and disseminates systematic reviews of the effects of health care interventions. Fifty international Collaborative Review groups made up of researchers, health care practitioners and consumers constitute the working party for assembling, appraising and synthesizing data from research studies. According to Moody and Buist, (1999) synthesizing the research evidence is the starting point - the dissemination and use of the information is also crucial. The Internet is a valuable tool for making information on research available. The medical field offers MEDLINE that provides sophisticated online searching of top quality medical journals to support clinical practice [28]. It is proposed that systematic reviews of taxation literature in particular topic areas, in the same way that the Cochrane Collaboration deals with medical research, could help solve the problem of dealing with the overload of information currently overwhelming practitioners and governments trying to deal with Tax and Internet Commerce.

**The ISO Extranet Exemplar**

The ISO, a worldwide federation of national standards bodies from over 120 countries, promotes the development of worldwide standardization and other related activities to:

- facilitating the international exchange of goods and services
developing cooperation in intellectual, scientific, technological and economic activity [14].

Most businesses, such as chemical, information technology and pharmaceutical companies, are required in today's global economy to comply with particular ISO standards as a prerequisite to doing business. The ISO offers open and transparent standards-development procedures and has a strong capacity to resolve differences. It cooperates with other global organizations such as the United Nations (UN), International Electro technical Commission (IEC) and the International Telecommunications Union (ITU) to provide easy access to a coherent and consistent portfolio of standards covering all sectors. It has decentralized management across 120 countries, 800 standards developing technical committees (TCs) and subcommittees (SCs) supported over 2000 working groups under the overall coordination of a Technical Management Board [33]. The ISO is a signatory to the Memorandum of Understanding on electronic business along with the International Telecommunication Union, the International Electro-technical Commission (IEC) and the United Nations Economic Commission for Europe (UN/ECE). In addition to the four signatories, CALS International and NATO CALS participate in implementation of the MOU as registered international user groups [26].

Figure 4: Structure of the ISO (Source: ISO web site: http://www.iso.ch)
The ISO Central Secretariat’s Livelink-based Extranet will probably be the largest Extranet in the world. The Extranet allows for delegation of administration over the Web because it is not feasible to administer working documents for 7,000 projects centrally [14]. Advantages include:

- helping virtual teams collaborate across organizational, geographic and technical boundaries
- providing an online focal point
- helping groups meet deadlines
- robust document management base
- open, seamless integration of all the collaborative working tools to build a web based intra/Extranet business solution
- giving employees and external collaborators complete, but controlled access to Livelink’s integrated services
- web browser access so system can be deployed without requiring any work on the client side
- speedy deployment of collaborative and knowledge management services
- helping to streamline the entire process of standards development
- improving document handling – such as working documents for meetings, meeting minutes, statistics, reports – and over 200,000 people working on developing, revising and producing standards documents and documents produced for the 40 plus international meetings yearly.
- helping to provide valuable tools for building consensus and tracking overall progress
- publishing standards online in a secure environment

The Director of Information Processing Services at ISO’s Central Secretariat believes building a system with staying power is one of the greatest challenges of building such a large scale Extranet. Managing knowledge throughout the standardization process requires a long-term foundation – beyond five years.

5. Conclusion

In the rapidly changing era of electronic business in a global environment, many governments are struggling to find solutions for harmonizing the rules of global e-trading. This paper has outlined some of the etaxation challenges confronting governments and outlined some possible solutions. The idea of global collaboration, whilst difficult to achieve, has been illustrated by drawing on the example of the ISO’s global Extranet.

Further research will be undertaken to investigate the application of peer-to-peer networks, such as Gnutella, to the development of global cooperative models and the impact that such models could have on etax management.
References


Ladbrokes' web site: http://www.ladbrokes.com/lbr_portal


Memorandum of Understanding http://www.itu.int/ITU-T/e_business/mou.html


