From E-Commerce to E-Business Taxation

Collin Lau and Andrew Halkyard

Although many e-mERCHANTS in recent times have experienced great, and often terminal, economic difficulties, there is an underlying momentum to e-transformation that will continue evolving in a myriad of innovative and revolutionary ways of conducting business. In these circumstances, it seems an imperative for revenue authorities to examine their approach and policy towards taxation of e-commerce more comprehensively than they have to date. This examination should not be confined to, or dominated by, the now more comfortable topics of whether an e-merchant has a permanent establishment, how income from online transactions should be characterized and where consumption of goods and services delivered electronically takes place. Important as these issues are, they should be considered in the context of a broader study evaluating the total impact of e-transformation on business productivity, supply chain, economic cycles and sector differences.

Put another way, revenue authorities should not simply focus upon taxation of e-commerce per se (such as the B2C sale and purchase of goods typified by Amazon.com or the downloading of a Norton anti-virus program), where attention is typically focused upon the location and function of servers, characterization of income and place of consumption. Instead, the analysis should extend more broadly to ensure a deeper understanding of the nature of e-business as it is today, and as it will develop tomorrow.

In this regard, it is tempting to argue that business functions will simply and suddenly disappear into cyberspace and to suggest that virtual companies will be able to operate with little presence anywhere except a site hosted by an Internet service provider in a tax-free jurisdiction. But will this happen? This article will contend that whilst communications efficiencies certainly allow some (perhaps many) activities to be coordinated from a distance, all enterprises still need to have real, and not virtual, people, assets and business operations. It will be contended that a balanced approach should be taken in assessing the impact of e-business on taxation systems worldwide and that it is not necessarily harmful for developing and technology importing countries. Outsourcing to lower-cost environments now occurs in many economic sectors. There is no reason to suggest that this should not continue in an e-business context.

The theme of this article is that only when the “richness” of e-business is appreciated, can the traditional taxation questions of residence, attribution of profits, characterization-

1. The authors wish to thank Gary Sprague, Baker & McKenzie, Palo Alto for his useful comments and, in particular, for his challenging queries on an earlier draft of this article. We would also like to acknowledge the helpful suggestions provided by the anonymous referee. The usual disclaimer applies.
tion and source of income, as well as tax compliance and administration, be considered in a proper context. Section 2. of this article commences with an overview of the current views and future work programme of the OECD towards taxation of e-commerce and, where relevant, notes converging and diverging approaches taken in various jurisdictions. Section 3. discusses the implications of enlarging the scope of our study from e-commerce to e-business. Section 4. provides examples of e-business models and introduces the challenges facing revenue authorities today. Section 5. analyses those challenges and examines in practical terms what this means for tax administration and enforcement. Section 6. provides a conclusion.

2. OECD DEVELOPMENTS AND PROPOSALS FOR TAXING E-COMMERCE

It is trite, but true, that taxation of e-commerce is a major concern for international agencies and tax authorities worldwide. In Europe, North America, and Australia and in many Asian countries (particularly Singapore and India) substantial research has been conducted on the impact of e-commerce on taxation. Among the plethora of books, reports, articles and papers produced on this topic however, the work of the Organization for Economic Co-operation and Development (OECD) stands out as the most significant, given its commitment to consulting broadly with governments worldwide as well as with the business community to develop an integrated and comprehensive approach to taxation of e-commerce. Of particular interest will be its measure of success in reaching an accommodation with the European Union regarding consumption tax issues, and whether in this context it is possible to implement a fully electronic or technological solution to the problems of levying and paying consumption taxes on online sales and services.

In its initial consultations, the OECD focused upon the implications of the Internet, private intranet networks and emerging payment technologies for tax policy and tax administration. The theme throughout this initial report (which is still reflected in the OECD’s work today) is that if governments are to successfully meet the challenges posed by e-commerce for taxation systems, a global co-ordinated approach is required to tax a truly global phenomenon. This report paved the way for a statement of broad taxation principles that should apply to e-commerce. Jeffrey Owens, Head of Fiscal Affairs, OECD has summarized the conclusions reached in the report as follows:

1. The same principles that governments apply to taxation of conventional commerce should apply equally to e-commerce, namely:
   a. Neutrality – taxation should seek to be neutral and equitable between different forms of e-commerce and between conventional and electronic commerce, thus avoiding double taxation or unintentional non-taxation. Business decisions should be motivated by economic, rather than by tax, consid-

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2 Two useful general resources, relevant for the period until the release of the various OECD reports (described below), are Butler et al., “The Taxation of Global E-Commerce”, Asia-Pacific Tax Bulletins (July 2000), at 200; and Doernberg and Hinnekens, Electronic Commerce and International Taxation (Kluwer Law International, 1999). See further, Torregrossa and Babington, “International E-Commerce Bibliography”, Tax Notes International (23 October 2000), at 197. All the reports published over the past two years by the OECD can be accessed electronically at www.oecd.org/ENhome/EN-home-22-node-farote-no-no-22.00.html (accessed 27 November 2002). In addition to the well-known and well-established taxation journals, a specialist journal devoted to the taxation of e-commerce entitled Tax Planning International e-commerce is published monthly.

3. A provocative and interesting conclusion is submitted by Krever, “Electronic Commerce and Taxation – A Summary of the Emerging Issues”, Asia-Pacific Tax Bulletin (June 2000), at 151, who states: “A more sober study will reveal that in many respects much of the hyperbole about e-commerce and tax is just that and in the overall scheme of things the impact of e-commerce on tax systems may be limited. It is the case, however, that e-commerce will place enormous strains on some aspects of consumption tax bases and will test the boundaries of some important international income tax concepts such as the source of income and the definition of a ‘permanent establishment’.” See also Mattison, “Demystifying Taxation of Global Electronic Commerce: Let’s Get On With the Business of [e-Business]” (paper submitted to the OECD for its 1997 round table discussion on 18 November 1997; see footnote 6), and Boyle, Peterson, Sample, Schottenstein and Sprague, “The Emerging International Tax Environment for Electronic Commerce”, 28 Tax Management International Journal (11 June 1999), at 357, who conclude: “As tax systems survived the telegraph, they will surely survive the Internet.” Many other commentators however, have expressed grave concerns over the implications of e-commerce for taxation systems worldwide. For example, Warren, “Australia – Taxation of Internet Trade”, Asia-Pacific Tax Bulletin (November 1998), at 412, echoes a common theme in stating: “The unprecedented level of international cooperation over such a short period of time on the Internet challenge to established commerce highlights the seriousness with which governments and tax authorities view the rapid recent growth in the Internet.” Other commentators, most notably Chang Hee Lee, “Impact of E-Commerce on Allocation of Tax Revenue Between Developed and Developing Countries”, Tax Notes International (21 June 1999), at 2569, show a critical scepticism in accepting the arguments put forward by developed countries in either maintaining the status quo or extending the existing rules into the digital era. In Professor Lee’s view, “developing countries have not much choice but to suffer.” (See further, Baxi and Shah, “Electronic Commerce Taxation Evolves in India”, Tax Notes International (23 October 2000) at 1923-1933). This sentiment has been taken up, in no small measure, by the Indian High Powered Committee on Electronic Commerce and Taxation which, in its report dated 6 September 2001, concluded that “applying the existing principles and rules to e-commerce does not ensure certainty of tax burden and maintenance of the existing equilibrium in sharing of tax revenues between countries of residence and source.” The Committee indicated that possible equilib-rium could be achieved by subjecting to withholding tax all (and not just e-commerce) tax-deductible payments made to a foreign enterprise: see http://fin-

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The OECD Ministerial conference held in Ottawa in October 1998 endorsed the principles summarized above. Subsequently, the CFA of the OECD proceeded to implement these taxation framework conditions by establishing five Technical Assistance Groups (TAGs). These comprise government officials from OECD as well as non-OECD states, and representatives of the international business community. The work carried out by these TAGs has focused upon three major areas:

1. Consumption tax issues – A Consumption Tax TAG has been examining, in the context of cross-border transactions, the principle of taxation at the place of consumption and the collection mechanisms that best serve to ensure the effective operation of this principle. The Consumption Tax TAG’s report proposes guidelines defining the place of taxation for cross-border services and intangible property by reference to the recipient’s business establishment (for B2B transactions) and by reference to the recipient’s usual jurisdiction of residence (for B2C transactions).

2. International direct tax issues – The work of another TAG, known as the Treaty Characterization TAG, has focused upon the definition of royalties in the OECD Model Tax Convention in the context of a wide range of payments made in e-commerce transactions. This work mainly involves questions of characterizing income (as either royalties, service fees or proceeds from the sale of goods) arising from different types of e-commerce transactions. In two independent exercises, changes have been made to the Commentary on Art. 5 of the OECD Model Tax Convention, clarifying the application of the permanent establishment definition to e-commerce and reports have been issued concerning profit attribution to a permanent establishment, both generally, and specifically relating to permanent establishments involved in e-commerce transactions.

3. Tax administration issues – A detailed examination is being made of the opportunities e-commerce technology offers for improving taxpayer service, promoting and assisting taxpayer compliance, and focusing upon the challenges e-commerce presents to established methods of tax audit and collection.

Given the undeniable US-centric focus on matters of direct taxation (which is bound to change), it is hardly surprising that the OECD’s work on permanent establishments, residence, characterization of income, and transfer pricing in the context of e-commerce has attracted a great deal of publicity and comment. To provide important background to the main theme of this article, it is useful to provide an overview of the more contentious issues.

Permanent establishments. The revised Commentary to Art. 5 of the OECD Model Tax Convention clearly states that a non-resident enterprise with an Internet web site would need to have a physical place of business for indirect taxes (which is bound to change), it is hardly surprising that the OECD’s work on permanent establishments, residence, characterization of income, and transfer pricing in the context of e-commerce has attracted a great deal of publicity and comment. To provide important background to the main theme of this article, it is useful to provide an overview of the more contentious issues.

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alone would not be regarded as having a permanent establishment in the country in which the web site is located. The permanent establishment concept is of course crucial to the assessment of business profits under Art. 7 of the OECD Model Tax Convention. Art. 5(1) defines a permanent establishment as “a fixed place of business through which the business of an enterprise is wholly or partly carried on” and Art. 5(2) provides that it may mean “a place of management, a branch, an office, a factory and a workshop”.

The revised Commentary explores various challenges posed by e-commerce to the current wording of the permanent establishment concept detailed in Art. 5. Among other things, the revised Commentary considers:

- what are the predominant factors in ascertaining the principal place of business and what level of presence is required to constitute a taxable presence in a place;
- the length of time required to establish permanency;
- whether a permanent establishment requires personnel to maintain and/or to operate, given the alternatives that exist for extensive automation;
- independent contractual arrangements with information technology service providers (ISPs) to manage the facilities, whether certain of those arrangements could amount to an agency and, if so, whether an agent habitually exercises powers on behalf of its principal;
- excluded activities, and activities of an auxiliary and preparatory nature; and
- the core activities or essential functions of the web site and servers.

As indicated above, the revised Commentary clarifies that a web site cannot of itself be considered a permanent establishment. Similarly, an Internet service provider (ISP) normally will not constitute a dependent agent of another enterprise so as to constitute a permanent establishment of that enterprise. By way of contrast, a server within a country could amount to a permanent establishment if the server is at the disposal (owned or leased) of the enterprise carrying on business through a web site, the enterprise carries on business functions through it for a sufficient period of time and those functions must be significant as well as an essential or core part of the enterprise’s business activities.

Although the contrary view that a server can never amount to a permanent establishment has been described as “extreme”, there is merit in moving away from a server-centric concept. Web infrastructure is highly mobile, and exists in layers. The topology is usually distributed, and consists of operating systems, databases, middleware, servers, other hardware devices (such as routers, switches, firewall boxes, cache and edge storage devices) and software. They can be co-located in a multitude of locations, subject to availability, cost, bandwidth as well as other commercial and political considerations. It is not at all clear how the OECD view takes account of the ease, or difficulty, of a business setting up sub-URLs. In short, to equate a permanent establishment with the location of a server seems highly vulnerable to manipulation and arguably overly simplistic.

In many common law jurisdictions, the place where a company is resident, and thus carries on business, can be established by determining where the business of the company was managed and controlled by its Board of Directors. In a net-centric society, directors, employees and business partners can be connected remotely and seamlessly. It would be redundant to elaborate that the modern e-commerce environment renders the common law tests for residence, at best, outdated.

In the OECD Model Tax Convention, the “place of effective management” is used as a tie-breaker rule to determine corporate residence. The strains placed upon this rule by the impact of modern communications are recognized in a Discussion Paper from the Business Profits TAG on Monitoring the Application of Existing Treaty Norms for the Taxation of Business Profits, even though the conclusion is reached that “in the majority of cases, [the rule] will provide the right result.”

One could also consider other common multinational e-business practices concerning the ownership and leasing of hardware devices, and the use of services provided by ISPs. As indicated above, organizational designs are highly versatile and there are generally a variety of ways to achieve the same business objectives. The totality of these matters makes the determination of whether a permanent establishment exists without human intervention in an e-commerce environment increasingly problematic.

Income characterization. This issue concerns the classification of various types of e-commerce income as either royalties or income from the sale of goods or income from the provision of services. Unless they can be attributed to a permanent establishment in the place of payment or use, CFA is currently awaiting a report from the Business Profits TAG on the topic of “Monitoring the Application of Existing Treaty Norms for the Taxation of Business Profits in the Context of Electronic Commerce”. This report will examine the issue of whether changes should be made to the OECD Model Tax Convention in order to properly allocate taxing jurisdiction to e-commerce activity (the proposed future work programme of the Business Profits TAG, set out in its preliminary report dated December 2000, can be viewed electronically at www.oecd.org).

Several countries, including the United Kingdom, consider that in no circumstances can a server constitute a permanent establishment: see HM Customs and Excise Press Release No. 8/2001 dated 12 February 2001. Singapore takes the same view as the proposal from the Business Profits TAG, set out in its preliminary report dated December 2000, to view electronically at www.oecd.org).


21. See Owens, footnote 9. On the other hand, a similar epithet could be ascribed to the Spanish position, which envisages the possibility that even a web site allowing market accessibility can constitute a permanent establishment.


24. See footnote 15, at Para. 76.
royalties are invariably subject to withholding tax on a gross basis. Conversely, different tax treatment (including the imposition of consumption taxes) may apply if the income can be classified as income resulting from the sale of goods or the provision of services. The characterization of income as royalties or sale proceeds or service fees will decide the extent to which tax jurisdiction will benefit and this, in turn, may depend upon whether the home and source jurisdictions are net exporters or importers of technology.

The Treaty Characterization TAG formulated its conclusions by insisting on neutrality of taxation between traditional commerce and e-commerce. In the now typical example of buying “virtual” books, by downloading the content and the right to read without the right to reproduce, it seems logical that taxation treatment should be no different from that applying to buying a paperback. In this context, as in many cases, substance prevailed over form. It is interesting, however, to speculate upon which countries stand to benefit from this approach. In the old economy, local companies such as The Utopian Book Center probably never imagined that it could escape liability to Utopian income tax on its book retailing operations. In the new economy, the same Book Center may well have disappeared.

But this analysis is incomplete. When taking a snapshot “before and after” comparison of a business function that is “replaced” by e-commerce, one should also ask whether the function moved to a different jurisdiction (in which case there has indeed been a transfer of value adding activity from one jurisdiction to another) or whether the function simply has now been automated out of existence (as in the case of the handloom weavers in industrializing Britain). If the function disappeared altogether, then it seems inappropriate to argue that this is a loss to importing countries that needs to be compensated in some way in the international tax system.

Returning to the example above, why did the Utopian Book Center disappear? If it disappeared because modern logistics allow centralized warehouses, the function has moved from one place to another. If people are happy shopping online, then the function truly disappeared because shoppers no longer need a building to go to touch what they may purchase. Have additional personnel been retained elsewhere (for example, to establish and maintain the web site) that the traditional bookstore did not need to employ? A broader study should also consider what the same communications efficiencies that led to closing the bookstore are doing elsewhere in the Utopian economy. For instance, perhaps Utopia now also exports domestically produced products via web sales and no longer needs to employ distributors in cities in the source countries with which it trades.

Transfer pricing. The OECD recognizes that transfer pricing issues will be increasingly important in the e-commerce age.25 E-commerce is more collaborative and dispersed than traditional forms of commerce, and its supply chain is intrinsically connected. It facilitates connectivity both intra-group and inter-group. An example is an e-merchant based in Singapore who receives and processes orders through servers in ten different locations, manufac-

26. Id.
this be? How should the constraints under various privacy and personal data laws be balanced with the need to ensure tax compliance? Is it feasible or appropriate to require an e-merchant to obtain a business (or consumption tax) registration in every place in which sales are made or services provided? How should parity treatment be ensured between new e-commerce operators and old-style catalogue houses that export goods from a remote location? These are some of the many questions to be considered.

Future work programme. The following is a recent summary of the OECD’s objectives and work programme in the area of e-commerce and taxation (source: OECD website, accessed 27 November 2002):

At its meeting in January 2001 the CFA has agreed to progress further the work towards the implementation of the taxation framework conditions and the strengthening of the international dialogue.

The CFA has narrowed the focus of the main fields of further work to a number of key issues. These include, amongst others:

- On direct tax issues, allocation of income.
- On consumption tax issues, the role of technology-based systems in tax collection.
- On tax administration issues, the means to address significant compliance challenges and to exploit taxpayer service opportunities.

In line with its working methods since Ottawa [1998], the CFA intends to take forward this further work through its subsidiary bodies (Working Parties, etc.) with continued input from, and close working with, business, non-member economies and the European Commission. In January 2001, the CFA not only endorsed the elements of a work programme for 2001-03, but also approved proposals for a continuation and refinement of the TAG process.

Technical Advisory Groups (TAGs)

As of 1 April 2001, the following TAG arrangements will operate. There will be three TAGs:

- A Business Profits TAG continuing to pursue the mandate of the previous TAG.
- A Consumption Tax TAG, again continued to advise and support the work on consumption tax related questions.
- A Compliance, Information, and Documentation TAG, which will build upon the work of the previous Professional Data Assessment TAG and examine a broader range of tax administration issues.

These three TAGs will be supported by a smaller Technology Panel which will provide technical advice as required/requested, either directly or by acting as a conduit for advice from experts in the wider business and technology community.

The CFA will continue to undertake its work on the taxation aspects of electronic commerce in an open and transparent manner with the express aim of continuing to strengthen the emerging international consensus on these issues. Working in partnership with the international business community, and with economies outside the OECD, remains central to building that international consensus and so providing the certainty and confidence that governments and business both seek.

3. FROM E-COMMERCE TO E-BUSINESS

As indicated above, the theme of this article is that revenue authorities should not simply focus upon taxation of e-commerce per se. Rather, their analysis should extend more broadly to ensure a deeper understanding of the nature of e-business as it is today, and as it will develop tomorrow. This proposition is best highlighted by representatives of business themselves who (correctly) point out:

The Internet has fundamentally changed how business is conducted in local, national, and multinational environments. … Although much attention is given to the proliferating use of the Internet as a marketing and sales tool, less attention is placed on the innovative efforts to streamline other core business functions over the Internet. Business functions such as product innovation, production (including delivery of services), administration, accounting and finance, and customer service have all been made more efficient through the use of the Internet. Internet-related technologies not only offer automation of routine administrative and financial functions, but also allow business the flexibility to obtain resources and to structure operations in the most cost-effective and efficient manner. As a result, enterprises are able to locate personnel and other value producing activities in those places which yield the greatest return on investment.27

There are many reasons to broaden our scope of investigation from e-commerce to e-business in order to properly assess the taxation implications arising. For example:

- Tax authorities should direct their efforts to where the real money is. Only a minority of B2C and B2B companies are making profits today. Whilst the potential must not be ignored or underestimated, and the levying and collection of consumption taxes obviously must be satisfactorily resolved, it is a truism that customer acquisition costs are huge. It is increasingly evident that enterprises of the old and new economies are merging to create an extended line of viable business platforms. Consider AOL’s merger with Time Warner. This “clicks and mortar” operation is not confined to pure B2C business. It offers products and services in both a physical and a virtual context.

- Because a “clicks and mortar” business operates in a hybrid context, and many such businesses are the result of gigantic mergers, the taxation issues arising are increasingly complicated. The complexities lie first in the even greater multiplicity of companies within the group structure, the variety of services and products offered, and the means of delivery. For example, various group subsidiaries of a business information/infotainment multinational enterprise may draw upon the same customer relation database (or even use the same local salesman) to offer privileged products to the same customer, such as local cable services and an international stock news service transmitted from an offshore hub. Transfer pricing issues need to be resolved and there may be free riders on income gen-

27. Draft memorandum dated 5 September 2001 to the Members of the Business Profits TAG from the Business Representatives on the TAG, a copy of which is on file with the author.
eration. The same circumstances exist in the e-financial services world. The complexity lies in the fact that, even in the old economy, because of diversity of business, tax planning and other commercial considerations, the present corporate and tax structure for many multinational groups is already Byzantine. Having the liberty to engage in e-business dramatically reduces the barriers of physical distance. Globalization is made easier. Identification of “who does what, and where” is more difficult. Source-based rules become vulnerable, and the application of residence-based rules for taxation contain various grey areas. Change in the way business is conducted is the norm.

– The world economy works increasingly in a dynamic and interactive pattern. E-business emerges in tandem with the exponential growth of Internet connectivity. In the meantime, it accelerates and fuels the momentum of globalization, whereby the supply chain is increasing worldwide. Economic boom and bust rise and fall more spontaneously than before, and are fuelled by the real or almost real time availability of information in a networked world. For instance, if a computer systems provider wants to cut inventory, its Taiwanese OEM manufacturers and the semi-conductors foundries are immediately adversely affected, and the components-makers in Mainland China need to reduce output. These effects reduce GDP growth in several countries, and the whole spectrum of a value chain comprising various industries can be adversely affected within a very short period of time. Any tax authority and government finance ministry may quickly need to deal with, and react to, these volatile changes in taxable sources.

– An increasingly interconnected global economy means that we are seeing an exponential growth of business outsourcing. The world today is more mobile, collaborative and working on distributed efforts than ever before. One typical example is application programming. There is no need for all software programmers to sit in the same place and work out a product. Costs and availability of skilled labour make India and China attractive to justify an outsourcing of efforts to these countries. The assembly is in the Net. For example, if an enterprise migrates its programming centre to a tax-free zone in Bangalore, and the bulk of its product specifications is finished there, the Indian contribution to the product development could be significant. Indeed, it is not unusual today for e-business enterprises to operate customer contact centres and service support functions in India and also China. Naturally, taxation questions will focus upon what constitutes the fairest way to allocate tax profits between the home and host countries. An application may be a proprietary product, with very few comparables available to carry out a traditional transfer pricing study. Ultimately, how profit attribution between the developed and the developing nations in areas such as this may well shape international tax policy for many years to come.

– It is interesting also to note the difference in the pace of e-transformation amongst various industries and sectors. This is illustrated by the data table from Gold-

| FIGURE 2 |
| US E-Commerce Penetration Rates By Vertical Industry, 1999-2005E (%) |

<table>
<thead>
<tr>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
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<td>agriculture, forestry, fishing</td>
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<td>4.0</td>
<td>6.0</td>
<td>8.0</td>
<td>10.0</td>
<td>12.0</td>
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<td>3.0</td>
<td>4.0</td>
<td>6.0</td>
<td>10.0</td>
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<tr>
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<td>1.5</td>
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<td>8.0</td>
<td>11.0</td>
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<tr>
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<td>12.0</td>
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<td>1.2</td>
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<td>7.0</td>
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<td>electronic/other electric equipment</td>
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<td>12.0</td>
<td>16.5</td>
<td>21.0</td>
<td>25.5</td>
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<td>4.5</td>
<td>7.0</td>
<td>10.0</td>
<td>13.0</td>
<td>16.0</td>
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<td>3.4</td>
<td>5.9</td>
<td>8.4</td>
<td>10.9</td>
</tr>
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<td>1.2</td>
<td>1.3</td>
<td>3.0</td>
<td>6.0</td>
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<td>4.0</td>
<td>6.0</td>
<td>8.0</td>
</tr>
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<td>2.0</td>
<td>4.0</td>
<td>6.0</td>
<td>9.0</td>
</tr>
<tr>
<td>hotels and other lodging places</td>
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<td>8.0</td>
<td>13.0</td>
<td>17.0</td>
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<td>instrument and related products</td>
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<td>3.6</td>
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<td>4.0</td>
<td>6.0</td>
<td>9.0</td>
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<td>metals (extraction and fabrication)</td>
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<td>8.0</td>
<td>10.5</td>
<td>15.0</td>
<td>20.0</td>
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<td>2.7</td>
<td>6.2</td>
<td>9.7</td>
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<td>17.5</td>
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<td>3.9</td>
<td>6.6</td>
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</tr>
<tr>
<td>printing and publishing</td>
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<td>1.0</td>
<td>2.0</td>
<td>5.0</td>
<td>8.0</td>
<td>12.0</td>
</tr>
<tr>
<td>rubber and miscellaneous plastics</td>
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<td>8.0</td>
<td>10.5</td>
<td>15.0</td>
<td>20.0</td>
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<td>2.5</td>
<td>4.0</td>
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<td>11.0</td>
</tr>
<tr>
<td>utilities (electric/gas/sanitary services)</td>
<td>2.5</td>
<td>4.5</td>
<td>7.0</td>
<td>10.0</td>
<td>13.0</td>
<td>16.0</td>
</tr>
<tr>
<td>wholesale trade</td>
<td>0.4</td>
<td>1.0</td>
<td>2.0</td>
<td>4.0</td>
<td>7.0</td>
<td>12.0</td>
</tr>
<tr>
<td>other industries</td>
<td>1.0</td>
<td>2.0</td>
<td>4.0</td>
<td>6.0</td>
<td>10.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Source: GS Research estimates.

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man Sachs published in June 2000, as shown in Figure 2.

Whilst it is hard to imagine e-agriculture (other than an agricultural B2B marketplace on the web, this industry is still land-driven), the telecommunications industry is definitely the most affected by Internet connectivity. Formerly, a whole building was needed to accommodate a telephone exchange serving only a few blocks, and it needed to be local to avoid expensive distance charges. Today, technology allows the operator to anchor the exchange in a number of handy boxes and in a remote location. Voice over Internet Protocol (VoIP) is a reality. Taxation authorities are naturally asking whether, and how, they can tax a phone/data operator that does not have a taxable presence locally. Telephone companies have traditionally been large tax contributors to the revenue, but we may now see many different competitive local exchange carriers and long distance carriers adopting various business models, with or without a local presence.

4. EXAMPLES OF VARIOUS E-BUSINESS MODELS

E-business encompasses a broad range of businesses including:

- various specific models of Internet businesses such as B2C, B2B, application service provider (ASP), Internet service provider (ISP), Internet content provider (ICP), consumer to consumer (C2C), hardware, software, networked IT services, Internet data centre (IDC), wireless Internet, aggregator, outsourcing, certification authority (CA), call centres and many other diverse business models; and
- brick-and-mortar operations transformed by Internet technologies (into click-and-mortar or dot-corporations) can be found in any conventional industry or sector today. We are living in a networked world. Our world is like the chart below (Figure 3), but in a multiplicity of modules.

To properly understand how e-businesses are working, it is useful to select certain of these business models and examine them in detail.

4.1. Application service provider (ASP)

An ASP delivers applications and software services over the Internet. Formerly, an end-user needed to buy a shrink-wrap software CD for installation on its own server located at its own office. More complex software such as ERP or CRM solutions had to be installed locally, and sale and post-sales services were performed on site (Figure 4). Under the old business methodology, the locality of the profit arising from a product sale was clear.

However, technology in the e-business world is changing rapidly and competitive businesses need to constantly upgrade. Product obsolescence can take place overnight. An ASP model aims to develop and host applications centrally. Customers can then subscribe to the services, access the programming through Internet broadband, and pay as and when they use. The applications are numerous, from

![FIGURE 3](image-url)
the basics of having web-based personal organizers to fully-fledged manufacturing and production planning tools. It is not for taxation reasons but for genuine commercial necessity that ASP models are growing rapidly.

The challenge to tax authorities worldwide is that the location of the ASP, its servers, and customer support team can be remote and offshore. The ASP can also work through a number of portals such as AOL or Yahoo to resell its products. That helps eliminate the necessity of having a sales office in each country in which it sells. It needs a programming and product development office, but this can easily be anchored in an Asian country that provides appropriate tax incentives. Its customer support functions are accessed through the Internet, because physical on-site maintenance based on an ASP model is not generally required.\textsuperscript{29}

\textsuperscript{29} It is, however, only fair to record that many companies operate on the basis that they do need a physical sales presence in the source country. Furthermore, the larger the transaction, the less comfortable a buyer may be to procure something expensive from the Internet without any local sales or support activity.

\textsuperscript{30} Interestingly, the Inland Revenue Department in Hong Kong has publicly stated in Departmental Interpretation and Practice Notes No. 39 (Hong Kong, July 2001) that a typical ASP model derives service income (and not royalties) and is thus only liable to business profits tax if the ASP carries on business in Hong Kong (which typically it does not). By way of contrast, although in a context not totally analogous to an ASP model, India’s Authority for Advance Ruling has determined that payments received by a US company from an Indian company for the use of computer systems situated abroad are taxable in India as royalty income: see Tax Notes International (5 July 1999), at 11.
4.2. Remote network management and IT services

A remote network management and IT service provider helps corporations maintain and monitor their own networks. As virtual distance is not proportional to physical distance, the physical location of the service provider can be flexible. (See Figure 5.) This contrasts with the old economy where a plumber or repair technician must have a physical proximity to the clients. In the old PSTN networks, IDD charges or dedicated lease lines are costly and mobility is therefore limited. However, in the Internet world, this will depend on bandwidth availability from point to point, as well as other market factors.

Assume China offers very competitive tax and commercial incentives at certain special economic zones (which it does), and makes available ample bandwidth. In this event, there could be enormous incentives for network service providers to move their operations to those zones, and offer cost-conscious clients (for instance, banks and other service providers) more economical network management services on a remote control basis. Initially, customers with a regional presence are likely to be primary targets. The network operation centre might be exempted from any direct or indirect taxes. The customers are scattered in many countries and the service provider may not have any physical presence in those locations. The whole operation may be viewed from the perspective of the countries in which the customers are located as an export of services from China. In short, this is a new business model, which is becoming increasingly popular in the e-business world.

Taxation authorities will need to review whether and how such entities can be subject to tax in their respective jurisdictions.

To compare the model described above with that existing in the old world (when it is not networked), the maintenance technician needs to work on-site, the customer support may be nearby or in the same city, and the storage system is local to the clients. These can all be changed in the remote Internet model. If broadband continues to improve, a remote centre can help maintain, monitor, programme, store, broadcast, distribute, survey, and perform numerous other functions as if the computer centre is established locally. Again, it is not so much a question of technical feasibility that will stop this development; rather, it will be political and security concerns that slow down the pace of outsourcing, particularly where confidential information is involved.

4.3. Aggregators

The final example (Figure 6) involves aggregators. These are service providers that provide back-end services to merchants or banks on a regional basis. All online credit card transactions within a region can be aggregated by one single payment acquirer/processor who then handles the authentication, verification, fraud screening, and authorization request before clearing with a card issuer such as VISA/MasterCard (that serves as an exchange). Banks and merchants can then focus on their core competence without being distracted by considerations of Internet security and networking infrastructure.

Under the old economy, these operations must be situated locally to support the local banks and the local merchants. Remote monitoring is costly, regional infrastructure could be prohibitively expensive, and the security concerns might not be satisfactorily resolved. However, in the new economy these matters are all largely resolved.

![Figure 6](https://example.com/fig6.png)
5. CHALLENGES FOR TAX AUTHORITIES

The general perceived wisdom, to which tax authorities universally appear to subscribe, is that their major challenges regarding e-commerce are:

- identifying the taxpayer – especially when an Internet user is involved;
- identifying audit risks and developing audit trails to ensure compliance;
- obtaining access to verifiable information and documents;
- obtaining access to encrypted data;
- developing a response to the advent of electronic money (e-cash); and
- ensuring an efficient mechanism for collecting tax, especially from non-resident taxpayers.

The continuing work of the OECD, through the Compliance, Information, and Documentation Task Force, with the support of the Technology Panel, reflects appreciation of these challenges. Specifically, these bodies are continuing to monitor and evaluate developments in Internet technology, including commercially developed Internet standards and protocols, with a view to determining whether the technology creates challenges or opportunities for tax administration tasks such as identifying taxpayers, verifying taxpayer information and facilitating cost-efficient collection of tax. The emphasis here is not restricted simply to efficient tax administration, because use of new technology can improve standards of taxpayer service. Hopefully this work will build upon the study of the Professional Data Assessment Task Force, which examined how external professionals remotely access client/taxpayer data and assess the data for authenticity, completeness, reliability and verifiability, with a view to adopting or adapting such methods, as appropriate, for tax administration in the e-commerce environment. Meeting these challenges is not only critical to policy objectives – and it is instructive, as can be seen from the work of the OECD and many taxation authorities worldwide, that this goal is being pursued in tandem with considering technical issues concerning taxation of e-commerce.

At a very basic level, it is not trite to reiterate that tax policy and law should be certain, clear, fair, effective, flexible and not ad hoc. Yet, notwithstanding both hard work and commitment displayed by many governments and international bodies in moving towards fair solutions in the taxation of e-commerce, many commentators and business people have voiced, and continue to voice, concerns about the present confusions and uncertainty in the application of tax regulations in this area. At the very least, because it “belongs” to the realm of IT specialists. Without an “EDP” world, in which IT is none of their business, many tax officials still cling to the fallacy of living in an “EDP” world, in which IT is none of their business. Many taxation authorities need to modernize their operating environments in order to achieve the desired level of efficiency and effectiveness. They will have to work more closely together in order to achieve the desired level of efficiency and effectiveness. They will have to work more closely together in order to achieve the desired level of efficiency and effectiveness.

jurisdictional liaison and agreement to synchronize the taxation treatment and exchange of information applicable to an e-business world.

Many taxation authorities need to modernize their operations, radically. In short, an attitude change is an imperative. Many tax officials still cling to the fallacy of living in an “EDP” world, in which IT is none of their business because it “belongs” to the realm of IT specialists. Without knowing the e-business world and how fast it is changing (in relation to all of business methodology, ideas, and business models), taxation officials will forever be playing catch up.

There is also an increasing need to monitor cross-border business activities on the Internet, and the obvious question is how well equipped are tax authorities today in handling all the new electronic means of data flows? Suggestions have been made to collect data and ultimately taxes from those entities without a presence in the source country by way of withholding taxes, the obligation being external professionals remotely access client/taxpayer data and assess the data for authenticity, completeness, reliability and verifiability, with a view to adopting or adapting such methods, as appropriate, for tax administration in the e-commerce environment.assic, as can be seen from the work of the OECD and many taxation authorities worldwide, that this goal is being pursued in tandem with considering technical issues concerning taxation of e-commerce.

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placed upon the payer in a B2B case and upon the credit card operators or banks in a B2C case. The suggestions may be feasible but do they represent an unfair and onerous burden on the intermediaries? And who should pay for this? At the very least, electronic filing, enhanced connectivity with taxpayers, data mining and more powerful data analytical tools are important initial steps to ensure practical and cost-efficient taxation compliance.

Many tax authorities need to pay serious attention to upgrading their technology and staff training. Internet links up isolated islands of systemized units. Just as securities regulators are implementing intranet-type systems and maintaining relational databases, tax authorities need better data mining techniques, database management tools, and an audit policy that is inclined towards thoroughly examining various models of e-business. In technologically advanced and rich countries a move could be made to ensure that taxpayers must be online and on the Internet. Privileges such as extended filing dates for tax returns could be granted to taxpayers who conduct their dealings with the tax authority electronically.

Many tax authorities urgently need to coordinate better with other government departments to obtain information on matters such as customs duty clearances, general registration and domain registration requirements, and investment attraction.

Tax policy makers need to strike a balance between providing incentives (where necessary) to promote the new e-business economy, ultimately benefiting from its multiplier effect, and choosing to levy tax on specific e-commerce transactions which might result in migration and loss of taxation revenue. Simplicity of rules and ease of compliance are obvious legislative and administrative goals; yet these must be balanced by regulatory controls preventing crime and tax fraud and ensuring personal data protection.

Tax treatment needs to match economic reality. For instance, the sale of a shrink-wrap Microsoft Office is in substance no different from selling via downloading. The OECD has clarified that the tax treatment should be the same in both cases reflecting the identical commercial substance. Various jurisdictions including Singapore and Hong Kong have explicitly adopted this approach. Such clarification is necessary from other tax authorities.

Tax collectors should concentrate their efforts on the major international corporations benefitting from the e-business world and demand information transparency and compliance with all reporting requirements.

6. CONCLUSION

From e-commerce to e-business, the world economy continues to evolve. In order for taxation rules to match economic reality, taxation authorities cannot afford to stagnate. Technological changes create new problems, but also make available a new range of tools to be used, to ensure tax compliance and collection and to improve taxpayer service. Although issues relating to residence, permanent establishment, income characterization, and the possibilities of expanding withholding taxes have tended to dominate the current debate involving e-business, transfer pricing and consumption taxes are undoubtedly matters that will ultimately be of significant increasing concern. It is in these areas where the interests of developed and developing countries most obviously intersect. Yet, notwithstanding this clear potential for conflict, taxation policy makers should appreciate that purely virtual enterprises do not exist at present, with the possible exceptions of gambling and adult content sites. And, perhaps more importantly, e-business will flow in both directions and the increase in outsourcing will assist developing countries.

To conclude, many tax authorities need a change of attitude, and the OECD and other concerned organizations should continue to promote efforts to establish a platform for multilateral discussions. International tax policy is a fine balancing act, between the developed and the developing nations, between the old and the new economy, between the conservative and the liberal, and between tax incentive and tax base protection. It is not an easy task — but in the e-business world it is an imperative one.