

Telecoms Infotechnology Forum

# Hong Kong as an Internet Financial hub

A TIF position paper

September 1999

Telecoms Infotechnology Forum (TIF)

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Originally established in January 1996 by the Telecommunications Research Project ([www.trp.hku.hk](http://www.trp.hku.hk)), based at the Centre of Asian Studies, University of Hong Kong, the Forum has been organized jointly with the Hong Kong Telecommunications Users' Group ([www.hkbu.edu.hk/~hktug](http://www.hkbu.edu.hk/~hktug)) since March 1998.

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## Hong Kong as an Internet Financial hub

The upcoming competition in banking and investment services will occur in many forms. Competition between on-line and traditional services is one manifestation. Competition among on-line service providers themselves is another. Competition between Hong Kong and other financial centers for transaction volumes, investor assets, listings, and offerings can be expected to increase. However, it needs to be recognized that Hong Kong's position, its attractiveness and strength as a financial center depend on what Hong Kong does – not on what other centers do.

Until now, the government has been waiting for the banking and finance industry themselves to take the lead in the provision of online trading services. The banks in turn, have adopted a conservative position, waiting until consumer demand requires them to respond. Consumers, therefore, have had little reason to change their behaviour, since they have had little exposure to the new services available.

In this position paper we address the impact of e-commerce – and, in particular, the emergence of electronic banking and finance – on Hong Kong's position as a regional financial hub, and the government's intention to establish Hong Kong as an e-commerce hub.

This paper resulted from the June 1999 meeting of the Telecoms Infotechnology Forum, a quarterly forum which discusses telecommunications and information technology issues that affect Asia.

September 1999

## Summary and contents

### I. The Internet & e-commerce: tools for competitive advantage?

The promises held out by the Internet are at once compelling and confronting. The Internet promises to lower costs, streamline logistics, and shorten production cycles. The Internet holds out the promise of reaching new markets and new customers by eliminating the tyranny of distance. And the Internet promises to eliminate intermediaries. Those who move fast stand to gain a significant competitive advantage. But where the Internet and the emergence of e-commerce place tremendous pressure on companies to become more competitive and more efficient, what do they mean for governments? Is 'competitive advantage' even an applicable concept to the policy agenda, or do we need to adapt our thinking to a more productive approach?

### II. The financial services industry

Hong Kong's contemporary success has rested on its role as an international trade and financial hub. However, the regulation of service industries became an increasingly complex task in the 1990s due to a combination of technological convergence and a worldwide trend towards liberalization. The historical differences between banking and brokerage, pensions and investments, derivatives and underlying assets have become increasingly meaningless. As with communication and information services, the once separate financial services are converging. Moreover, they are also converging with the communications and IT sectors. This raises a host of opportunities. It also raises challenges to the local industry and to Hong Kong's status as a regional financial center.

### III. Hong Kong as a financial hub

Hong Kong has long been considered Asia's second financial center after Tokyo. However, seeing the potential for new networking technologies to contribute to the economy, countries across Asia have been promoting the development of their information infrastructures, and pushing ahead with programs of IT service development. Will this affect Hong Kong's status as an international trade and financial center? Do these developments threaten to negate Hong Kong's traditional advantages?

Not necessarily. If Hong Kong can foster a local market in which a steady supply of educated and trained people in information technology are readily available, in which banking and securities regulations are transparent and secure, in which consumer and merchant protection is strong, and if Hong Kong can leverage its strategic advantage as a gateway to mainland China, then the future is very bright.

#### IV. The role of government

How far should governments go in promoting development, guiding change and regulating competition? Where companies can take a perspective that is anywhere from six months to five years in scope, depending on their size and market dominance, governments are able to take much longer developmental approaches. Does this justify their involvement when it comes to infrastructural programs such as e-commerce platforms? Broadly speaking, three approaches to Internet banking are being adopted by governments worldwide: leaving all responsibility with the banks; setting industry standards; or working on a case-by-case basis.

#### V. The Hong Kong initiatives

The Hong Kong government is creating an overarching framework for the development of e-commerce through a series of key initiatives. These initiatives are outlined, and their impact upon the financial sector assessed.

#### VI. A policy-maker's checklist

Key questions and issues raised by industry participants and observers are put together in a check-list for policy-makers.

## I. The Internet & e-commerce: tools for competitive advantage?

With our excellent telecommunications infrastructure, our unique position vis-a-vis the Mainland and our bi-lingual language capability, Hong Kong has a strong *competitive advantage* in seeking to serve as an information gateway.

– Chief Executive, Tung Chee-Hwa.<sup>1</sup>

Competitiveness is a meaningless word when applied to national economies. And the obsession with competitiveness is both wrong and dangerous..... a government wedded to the ideology of competitiveness is as unlikely to make good economic policy as a government committed to creationism is to make good science policy – even in areas that have no direct relationship to the theory of evolution.

– Paul Krugman<sup>2</sup>

A fundamental confusion frequently intrudes into any discussion of the impact of the Internet upon national economies. The confusion is between the need to facilitate and promote the growth of electronic commerce in various ways, and the idea that the national economy is a competitive entity that wins or loses out. The reality of economics is that individual companies will or will not adopt and adapt to electronic commerce according to their own strategic foresight and according to their own estimates of the costs and benefits. Those that lose out in the momentous changes that lie ahead will release resources, and market share, to the more successful companies. In this way the complexion of the national economy will change, but so long as the local environment is conducive to trade and commerce there is no inherent reason for the national economy not to benefit from the changes.

It does not matter whether the successful companies are local in origin or not. What matters is whether local employment, productivity, social welfare, and so on benefit. Hong Kong has long been considered Asia's second financial center after Tokyo. It may well be that some Hong Kong banks and brokerages will lose business to firms offering financial services over the Internet – indeed, it is to be expected. While this may be the harsh reality of business for the unlucky or the slow, it is also an opportunity for others to employ the financial expertise of the staff concerned, to develop new services and new financial products.

Innovation is at a premium in the emerging Internet environment, and this poses an interesting challenge to Hong Kong and the Hong Kong government. If Hong Kong can foster a local market in which a steady supply of educated and trained people in information technology are readily available, in which banking and securities regulations are transparent and secure, in which consumer and merchant protection is strong, and if Hong Kong can leverage its strategic advantage as a gateway to mainland China, then the future is very bright.

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<sup>1</sup> The 1998 Policy Address ([www.hku.hk/hkgcsb/eindex.htm](http://www.hku.hk/hkgcsb/eindex.htm)). Emphasis added.

<sup>2</sup> Paul Krugman. *Pop Internationalism*, Cambridge: MIT Press: 21.

***Hence our position in this paper: e-commerce in Hong Kong will continue to lag until the government becomes more involved in providing the necessary 'soft' infrastructural development for commerce by cyberspace.***

By this we mean the legal framework for e-commerce, the regulatory framework for banking and securities trading, the security framework for merchants, consumers, and for copyright and data protection, and a new, more appropriate, emphasis upon education, training, research and development. It is wrong to formulate these policies in terms of Hong Kong's competitive advantage. If competitive advantage were the issue, then increasing expenditure on legal, regulatory and social investment overheads is a questionable policy direction. But competitive advantage is not the issue. That's an issue for companies. For Hong Kong the issue is an environmental one. Get that right, and it will pay for itself.

Until recently, the government has continued to take a rather hands-off, laissez-faire approach to e-commerce, preferring to wait until the banking and finance industry(s) began to offer any such services. The banks in turn, have adopted a conservative position, waiting until consumer demand required them to respond. Consumers, inundated with information about security risks, millennium fears, bad bank debts and the Asian financial crisis, have waited for someone to provide them with an *incentive* to change their behavior; for someone to chase their electronic custom.

Early adoption, by contrast, requires education and facilitation. Hence the role of the government. In this position paper we address the impact of e-commerce – and, in particular, the emergence of electronic banking and finance – on Hong Kong's position as a regional financial hub, and the government's avowed intention to establish Hong Kong as an e-commerce hub. Section II outlines the impact of the Internet on the financial services sector generally. Section III reviews Hong Kong's position as a regional financial hub. Section IV outlines a variety of roles attributed to government in the development of e-commerce initiatives and then, within this context, Section V outlines recent Hong Kong government initiatives. How effectively is the government moving to shore up and develop the territory's role as Asia's financial hub. The final section provides our checklist for policy-makers and those involved in the development of the financial services e-commerce sector.

## II. The financial services industry

Internet technology is revolutionizing the banking and investment services markets. On-line banking, share trading, investment information, and IPOs on the Internet are now a reality. As a result, a wide range of new possibilities for linking market participants, disseminating information, transacting business, serving customers, and regulating markets are emerging. Looming on the horizon are virtual exchanges that transcend borders and regulatory regimes.

The historical differences between banking and brokerage, pensions and investments, derivatives and underlying assets are becoming increasingly meaningless. As with communication and information services, once separate financial services are now converging.<sup>3</sup>

Not surprisingly then, some on-line brokers are already moving into banking. E\*Trade offers mortgage loans, with an on-line application. Virtually all of the top US on-line brokers provide money market accounts with cheque-writing facilities and most offer credit cards. Internet brokers are affiliating with retail banks. Quick & Reilly, now owned by the Fleet Financial Group, plans, for example, to sell bank products on-line and provides consolidated electronic account statements. Waterhouse received a bank charter from the US Comptroller of the Currency even before its acquisition by Canada's Toronto-Dominion Bank. Indeed, Waterhouse National Bank is a 'virtual bank' with no branches and about 200,000 customers. Ameritrade is carrying the concept one step further: it will offer on-line customers a choice of providers of banking products.

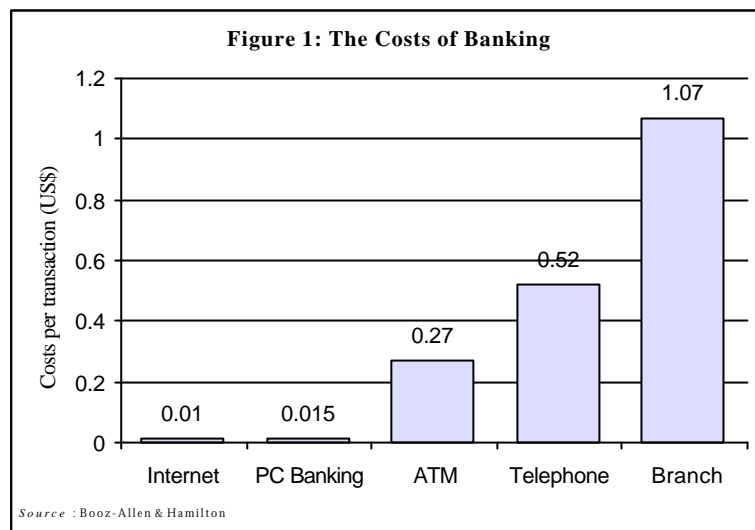
Which brings us to the real threat to banks. Similar to the brokerages, banks have been based on closed user groups and a gatekeeping role. They have made their institutionalized profits through processing and transaction fees. However, with more and more people utilizing automatic teller machines (ATMs) to conduct their basic 'branch' operations, and credit cards to conduct their credit and, in many cases, chequing operations, the need for an extensive intermediary network of suburban bank branches has come into question.<sup>4</sup> But if the banks were to curtail much of this aspect of their retail operations, what would there be to distinguish them from a communications, or Internet-working, company? And once this realization were to dawn on the market, why would people trust a bank to be a communications company when they could choose a company whose core competence was communications?

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<sup>3</sup> However, the development of fully-integrated financial services will require an integrated framework for regulating financial institutions and markets. The UK, for example, is moving to consolidate the regulation of financial services under one super-authority. In Hong Kong, the immediate requirement is for coordinated banking and securities market regulation.

<sup>4</sup> It needs to be recognized that while ATMs may be saving the banks money now, they did not for the first 10 years of widespread use. The banks rolled out ATMs because they thought that they would save money through a reduction in tellers and employee costs. Not only did teller demand *not* go down substantially, but the cost of system maintenance was huge. (It also needs to be noted that while on-line processing – the ability to do an on-line transaction rather than a batch transaction was available in 1962 – banks did not start employing the technology until the early- to mid-1970s.)

The costs of on-line banking and investment services are dramatically lower than traditional services (Figure 1).<sup>5</sup> At this point in time, transactions costs and annual account management costs appear to be about 20% or less of the costs of supplying traditional services.<sup>6</sup> Moreover, the operating costs of on-line services decline steeply as volumes grow.



In the financial and banking market of the future, transactional revenues (of all sorts) and some asset-driven revenues (e.g., for fund management, custody and administrative services) will become severely commoditized. Primary profit sources will increasingly be liability-driven (e.g., margin lending) and the result of innovative service bundling. The most successful competitors will offer fully-integrated services (i.e., brokerage, banking, pensions) through multiple channels (i.e., *both* traditional and on-line).<sup>7</sup>

### Table 1: The World's 'True' Internet Banks<sup>8</sup>

<sup>5</sup> A few standard examples illustrate the point:

- A banking transaction at a traditional branch teller costs more than US\$1; an Internet transaction costs 1 cent.
- A travel reservation may cost US\$10 through an agent; it costs \$2 online.
- Where stock trading can cost US\$150 through a full service broker, and \$69 through a discount broker, it is less than \$10 through the Internet.

<sup>6</sup> The Hong Kong commissioned study, *Internet Investment Services: Conclusions and Recommendations for Hong Kong*, November 1998, noted that "The commission for trading 1,000 shares on-line through one of the market leaders ranges from US\$8.00 to US\$29.95. For example, Ameritrade's commission is US\$8.00 per trade, Fidelity currently charges "active traders" US\$14.95, while Schwab's commission for on-line stock trades is US\$29.95. This compares to the average commission charged by full-service brokers of US\$284.00."

<sup>7</sup> In the US in 1998, online brokerage customers increased by some 53%, online insurance services by 47%, online credit-card applications by 27% while in the same period online banking customers increased by 2%. See [www.cyberdialogue.com](http://www.cyberdialogue.com). Roughly 4.5 million households were banking online in the US in 1997 according to the US Department of Commerce's report, "The Emerging Digital Economy" ([www.ecommerce.gov](http://www.ecommerce.gov)). By the year 2000, it was estimated that as many as 16 million households would be banking online in the US.

<sup>8</sup> The Online Banking Report classifies "True Internet Banks" as banks that allow their customers to review balances, transfer funds and pay bills on their Web sites. It is worth noting that in their list of 133 "US Internet Banks", 109 did not make the list of the top 100 US banks ranked by assets.

Institution	Location	Date Added	Institution	Location	Date Added
ABN Amro Bank <b>Error! Bookmark not defined.</b>	Paraguay	Jan. 1998	Commonwealth Bank of Australia	Australia	July 1997
AIB Group	Ireland	Nov 1997	Countrywide Bank	New Zealand	June 1998
ASB Bank	New Zealand	1999	Credit Lyonnais	France	Sept 1997
Argentaria	Spain	Aug 1998	Credit Mutuel de Bretange	France	Apr 1997
Avtobank	Russia	May 1998	Credot Mutuel-CyberMUT	France	Apr 1997
Bank Sabadell	Spain	June 1998	Credit Suisse	Switzerland	Apr 1997
BBL Banque Bruxelles Lambert	Belgium	Oct 1998	DBS Bank	Singapore	
BEKB net	Switzerland	June 1996	Deutsche Bank	Germany	May 1997
Banamex SA	Mexico		Eesti Uhispank	Estonia	1999
Banco 7	Portugal	Dec 1997	Emirates Bank	UAE	Nov 1997
Banco Aleman	Paraguay	May 1998	Estonian Forexbank	Estonia	1996
Banco BHIF	Chile	1996	European Federal Credit Bank	Antigua	Mar 1997
Banco Bilbao Vizcaya	Spain	Sept 1997	Expandia Banka	Czech Republic	May 1998
Banco Central Hispano	Spain	July 1998	Hansabank	Estonia	Aug 1997
Banco Mercantil	Venezuela	Dec 1997	ICICI Banking Corp	India	
Banco Real	Paraguay	Apr 1998	InterBanco	Paraguay	Mar 1997
Banco Santander	Spain	July 1997	Islandsbanki	Iceland	1996
Banco Santiago	Chile	Mar 1997	Lloyds TSB Group	UK	Nov 1998
Banco Santos SA	Brazil	Jan 1998	Merita Bank	Finland	May 1997
Banco Wiese	Peru	Aug 1997	Nationalbank Essen	Deutschland	1998
Banesto	Spain	Sept 1997	Nationwide Building Society	England	July 1997
Bank 24	Germany	1996	Nedbank	South Africa	Apr 1997
Bank Austria	Austria	1996	Nykredit A/S	Denmark	Dec 1998
Bank Papan	Indonesia	Dec 1997	OKO Bank	Finland	Feb 1997
Bank of Ireland	Ireland	Jan 1997	Open Bank	Spain	May 1997
Bank of Montreal	Canada	1996	Ottomanbank	Turkey	1999
Bank of Nova Scotia	Canada	Sept 1997	Presidents Choice Financial Services	Canada	Aug 1998
Bank of South Australia	Australia	July 1997	PromsvyazBank	Russia	Oct 1998
Bankinter	Spain	Sept 1997	Rigas Komercbanka plc	Latvia	May 1998
Banque Populaire de Lorraine	France	Apr 1997	Royal Bank Financial Group	Canada	1998
Barclays Bank PLC	UK	1998	Royal Bank of Scotland	Scotland	Apr 1997
Barrington Bank	Antigua	Aug 1998	S-E-Banken	Sweden	Sept 1997
Bradesco	Brazil	May 1996	SKB Banka DD	Slovenia	Sept 1997
Brooks Savings and Credit Union	Canada	June 1998	Scotiabank	Canada	Sept 1997
Business Development Bank of Canada	Canada	1998	Societe Generale	France	May 1998
CERA Bank	Belgium	July 1998	Sparebanken	Norway	Apr 1997
CIBC	Canada	1996	St George Bank	Australia	1996
Canada Trust	Canada	1998	Standard Bank	South Africa	July 1997
Cassa di Risparmio di Firenze	Italy	Sept 1996	Sudostroitelny Bank	Russia	1998
Chinatrust Commercial Bank	ROC	1996	Swedbank	Sweden	

Citizens Bank of Canada	Canada	1998	TD Bank	Canada	May 1998
Cooperative Bank	England	Mar 1998	UBS AG	Switzerland	Sept 1998

Source: Online Banking Report [www.onlinebankingreport.com/full\\_serv\\_world.html](http://www.onlinebankingreport.com/full_serv_world.html)

There are two major challenges facing banks in the move online. First, they need to drive the overall appeal of online banking and second they need to assuage consumers concerns about paying bills online. Currently, the consumer household that banks online is not reflective of the overall banking consumer audience. Surveys indicate that typically they are well educated, with two high incomes and children. The singular most important characteristic for these households is that their time is at a premium. One such survey in the US showed that 86% of online banking consumers cited “anytime access” as the primary reason for banking online.<sup>9</sup> Another survey speculated that the revenue generated by account view and bill payment services would total US\$1.3 billion by 2003, and that 32 million US households would be banking online by 2003.<sup>10</sup>

### **The stock markets**

For most of the last century, the average full-service brokerage firm has earned hundreds of dollars in commission on an average stock trade. Such fees have been justified as the result of the brokerage firm’s aggregated experience, expertise, and guidance. In the 1970s, a number of discount brokers – Charles Schwab and Fidelity Investments prominent among them – challenged the traditional model of broker commissions. Out of this challenge emerged a new model, one that recognized that technology had dramatically reduced the cost of executing a trade.

However, even with the advent of the discount brokers, the stock market remained a place for large, elite institutional investors and, increasingly, managed funds. Large institutions did not trade stock in the same manner as the small retail investor. Institutional investors were not required to go through brokers or through securities intermediaries. They simply connected to the market from their PCs and booked orders on the computer screen. No broker, no intermediary, no spread, and no payment for order flow. Trades were executed directly between buyer and seller, with the electronic trading facility that made the transaction possible taking a fractional fee per share traded.

Until recently it was inconceivable that a similar mechanism could work – or would be *allowed* to work – for individual retail investors. Enter the Internet. Now, instead of intermediaries (in this case, ‘market makers’) controlling order flow, the advent of companies such as E\*Trade and Boom, means that the order goes to whoever offers the best price. Moreover, a wholly digital stock market will inevitably be able to handle more volume than the traditional market – at which point it will displace the traditional market. As

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<sup>9</sup> See Dataquest ([www.dataquest.com](http://www.dataquest.com)).

<sup>10</sup> See IDC ([www.idc.com](http://www.idc.com)). However, it should also be noted that one third of all customers who opened an online bank account in the US in the last 12 months are reported to have since closed their accounts according to a study by Cybercitizen Finance. When asked why they discontinued their accounts, 50% said they found the sites too complicated to navigate and customer service was unsatisfactory. See [www.cyberdialogue.com](http://www.cyberdialogue.com).

a result, in the future, the stock market will not revolve around brokers or dealers or specialists. It will not be limited to a physical location, to a trading floor, even to a single central database. The stock market of the future will take place whenever individuals access each other to trade securities. A seat on the stock exchange of tomorrow will be any chair in front of a computer with a modem.<sup>11</sup>

What this means is that basic transactional and information services will become low margin commodities. As a result of the heightened competition which this will attract, the average commission for traditional brokerage services will fall dramatically, with some estimates suggesting that the average commission for *traditional* brokerage services will decline to less than half of current levels by 2010. This will, quite predictably, lead to a substantial shake-out and consolidation among Hong Kong brokers. Overall the profitability of traditional brokerage services will be eroded.

And yet, opportunity is knocking: on-line trading volume has surged (Table 2). Almost 30% of total retail trades were made on-line in the US in 1998, up from 17% in 1997. Moreover, the growth in on-line investing is expected to continue unabated. One study has estimated that there will be over 14 million on-line brokerage accounts, with nearly US\$700 billion in assets, by 2002.<sup>12</sup>

**Table 2: Average Daily Online Trades, June 1998 – December 1998**

Brokerage	Q398			Q498		
	Trades/ Day	Share	Rank	Trades/Day	Share	Rank
Charles Schwab	76,608	30.1%	1	93,000	27.6%	1
Waterhouse	26,500	10.4%	4	42,003	12.5%	2
E*Trade	27,450	10.8%	3	39,990	11.9%	3
Datek	21,272	8.4%	5	33,695	10.0%	4
Fidelity	28,428	11.2%	2	33,100	9.8%	5
Ameritrade	18,246	7.2%	6	25,725	7.6%	6
DLJ Direct	10,448	4.1%	7	13,366	4.0%	7
Discover	9,400	3.7%	8	11,531	3.4%	8
Suretrade	6,900	2.7%	9	9,600	2.9%	9

<sup>11</sup> See Andrew Klein, "WallStreet.com", *Wired*, February 1998. See also the Wit Capital website: [www.witcapital.com](http://www.witcapital.com).

<sup>12</sup> These figures can be found in the Government-commissioned study, *Internet Investment Services: Conclusions and Recommendations for Hong Kong*, November 1998 (see below for full reference details). The Hong Kong Government has estimated that 30-40% of Hong Kong's total retail trading volume will be performed on-line by 2010. (See the Government's "Information Paper on E-Commerce in the Securities Market in Hong Kong" at: [www.info.gov.hk/bspu/paper/index](http://www.info.gov.hk/bspu/paper/index).) "The rate of increase of on-line users is expected to be extremely high. As a consequence of this, brokers who are not able to provide on-line services to investors will lose out."

NDB	3,910	1.5%	10	4,420	1.3%	10
Others	25,462	10.0%		30,306	9.0%	
<i>Total</i>	254,624			336,736		

*Source:* Piper Jaffray Inc. and Annual Company Reports

The upcoming competition in banking and investment services will occur in many forms. Competition between on-line and traditional services is but one manifestation. Competition among on-line service providers themselves is another. Competition between Hong Kong and other financial centers for transaction volumes, investor assets, listings, and offerings will certainly occur but it needs to be recognized that these competitive dynamics are interdependent. Hong Kong's position, its attractiveness and strength as a financial center depend on what Hong Kong does – not on what other centers do. Hong Kong's attractiveness to both investors and issuers will depend upon its liquidity, its investor focus (such as China-related opportunities), turnover, product breadth, and the availability of information. It is to these dynamics that we turn our attention.

## **ELECTRONIC BANKING: THE CHOICES**

### ***Telephone***

Banking over the telephone was pioneered well over a decade ago. Most major banks now offer telephone banking services that allow current-account holders to check their balances, pay bills and set up direct debits. Most services are open 24 hours a day, although some banks levy an annual fee. Mobile-phone banking services will be the next area to attract interest – and competition.

### ***Internet***

Online banking is still very much in its infancy, but is expected to grow rapidly. Citibank, for example, claimed that by March 6% of all transactions at the bank were being done over the Internet. The service launched in November 1998. One reason for the expected growth in Internet banking is the 'soft push' that will accompany it: once the banks decide to seriously pursue it as one of their suite of services. For instance, better interest rates are likely to be offered to customers who agree to use only remote or Internet banking options.<sup>13</sup> Internet banking services allow customers to check their balances, pay bills and apply for loans or mortgages online. The customer is usually given a password so that transactions are secure, and most online services are free.

Building a fully functional Internet-banking site costs about HK\$8million.

### ***Computer***

Computer banking is different from Net banking because the customer has to use software provided by the bank. Transactions are not carried out over the Net but via private networks run by the bank. These services are likely to be replaced by full Net services in the next year.

### ***Digital Television***

Cable & Wireless HKT's iTV service allows customers to bank via its broadband network. Somewhat similarly, the UK's first digital TV service is expected to be launched by HSBC on Sky Digital later in the year.

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<sup>13</sup> In the US where this trend has progressed furthest, Internet-based cheque accounts can pay as much as 4.45% a year and carry no fees, compared with a nationwide average of 1.5% annual interest and US\$9 in monthly fees.

### III. Hong Kong as a financial hub

Depending on how the exchanges, their members, and the regulators anticipate and respond to the various scenarios under consideration Hong Kong could emerge as the leading financial center in the region, or at the other extreme it could become marginalized.

– “Internet Investment Services: conclusions and recommendations for Hong Kong”<sup>14</sup>

The government is committed to make Singapore the e-commerce hub for the Asia-Pacific region and beyond. We want to make Singapore an attractive base for companies to carry out an entire range of e-commerce activities, from the processing of payments to product distribution and helpdesk support. Our traditional strengths as a financial and transportation hub provide a strong foundation for our aim to be one of the world’s leading e-commerce centers.

– “Singapore: What is So Great About Becoming An Electronic Commerce Hub?”<sup>15</sup>

#### **A communications hub**

Hong Kong is an advanced user of communication services. Market penetration rates for telephone, fax, pager and mobile phones are all amongst the highest in the world. Annual investment in telecommunications was estimated at HK\$19 billion (US\$2.4 billion) in 1997.<sup>16</sup> In order to stimulate investment and competition, the government has promoted deregulation in the industry. New communication services also bring versatile new technology to businesses and consumers. In March 1998, iTV was launched, the world’s first interactive television service.

#### **A Regional Telecommunication Hub**

- 100 Internet service providers;
- Cable network offering up to 37 channels;
- 14 satellite broadcasters uplink their signals to Asia;
- Over 3.3 million mobile phone users as of May 1999;
- First major city to have a fully digital telephone network;
- Nine fax lines per 100 telephone lines, the second highest in the world;
- Seventy telephone sets for every 100 people, the second highest in Asia.

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<sup>14</sup> November 1998. A study co-sponsored by the Better Hong Kong Foundation ([www.betterhongkong.org](http://www.betterhongkong.org)), the Securities and Futures Commission of Hong Kong ([www.hksfc.org.hk](http://www.hksfc.org.hk)), the Stock Exchange of Hong Kong ([www.sehk.com.hk](http://www.sehk.com.hk)) and the Hong Kong Futures Exchange ([www.hkfe.com](http://www.hkfe.com)). A Project Committee was formed comprising representatives from the four organizations.

<sup>15</sup> [www.ec.gov.sg](http://www.ec.gov.sg)

<sup>16</sup> See OFTA, [www.ofta.gov.hk](http://www.ofta.gov.hk).

Given its locational and facilities advantages, along with one of the world's most advanced telecommunication infrastructures, Hong Kong's contemporary success has rested on its role as an international trade and financial hub.<sup>17</sup>

### **Hong Kong Financial Market Indicators**

- Capital-raising center for the mainland;
- One of the four largest gold markets in the world;
- Fifth largest market in foreign exchange transactions;
- Fourth largest market in volume of external banking transactions;
- Ninth largest in stock market capitalization, and the second largest in Asia;
- 334 overseas securities and commodity dealers, 115 overseas insurers, 1,400 unit trusts.

### **A banking hub?**

However, Hong Kong is missing the on-line trading boom because local banks are unprepared for taking payments from overseas Internet shoppers. Following reports that Americans spent US\$2 billion via the Internet on Christmas gifts in 1998, Hong Kong-based traders began to grow increasingly agitated at the reluctance of local banks to help them set up business on-line.<sup>18</sup> Chekiang First Bank ([www.cfb.com.hk](http://www.cfb.com.hk)) became, in December 1997, the first SAR-listed banking system to offer a Web-based banking system. Citibank launched Internet services in November 1998.<sup>19</sup> Wing Lung Bank ([www.winglungbank.com.hk](http://www.winglungbank.com.hk)) initiated its on-line offerings the following month. Bank of East Asia ([www.hkbea.com](http://www.hkbea.com)) and Dao Heng Bank Group ([www.daoheng.com](http://www.daoheng.com)) both announced plans in mid-1999 to offer Internet-banking services by October, as did HSBC. (In fact, HSBC will only have on-line ability by October, but real Internet facilities will not be ready until mid-2000.) But that still leaves the vast majority of Hong Kong's 320 authorized financial institutions – including giants Hang Seng Bank and Standard Chartered Bank – without announced programs for providing banking services on the Internet.

The banks claim to be uncomfortable about processing payments received from outside Hong Kong via the Internet because of the additional credit risk. Ironically, given the cost savings promised by the 'Net, banks in Hong Kong charge about 2.5% for credit card payments but charges for payments received on the Internet shoot up to 4-10%. As a result, most local banks, if they have a Web presence at all, have constructed simple 'brochureware' sites that provide little more than basic marketing information.

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<sup>17</sup> Hong Kong has long been an important entrepot. Over 800 sailings, 100 flights, 35 trains and 26,000 vehicles travel across the Hong Kong-China border daily. It is also the third busiest telecommunications traffic border in the world. Furthermore, approximately half of mainland China's exports are handled by Hong Kong. In 1997, 95% of Hong Kong's total re-exports either originated from or were destined for China. Government Information Centre, 4 November 1998, "Hong Kong and China Economies" ([www.tdc.org.hk/main/economic.htm](http://www.tdc.org.hk/main/economic.htm)).

<sup>18</sup> 'Internet-shy banks cut SAR off from on-line trading boom', *South China Morning Post*, 17 Jan 1999.

<sup>19</sup> Interestingly, the Citibank Hong Kong homepage is cited as a Singapore domain: [webp.citibank.com.sg/cgi-bin/bv.cgi/index.jsp](http://webp.citibank.com.sg/cgi-bin/bv.cgi/index.jsp)

## A trading hub?

With technology and the related convergence of investment services developing rapidly, Hong Kong will be impacted in several interconnected ways. First, the wide-spread availability of on-line services in Hong Kong is inevitable. This will intensify competition, not only among brokers but also between Hong Kong and other financial centers – both globally and regionally. Whatever Hong Kong does, major US brokers will offer on-line trading in US- and London-listed stocks, bonds, and mutual funds to Asian investors (Table 3). They will offer both very low cost transactional services (as E\*Trade does) and relationship-based services (in the style of DLJ). The large US retail financial services groups, e.g., Fidelity, Schwab, and Morgan Stanley Dean Witter, are seeking global economies of scale, and in this regard they view Hong Kong as a high-potential market with local competition weakened and distracted by the region's economic and financial problems.

**Table 3: International Online Expansion**

Brokerage	International Presence	International Strategy
Charles Schwab	Internet trading in Europe on the London Exchange, in Canada on Canadian exchanges and in Latin America, the Caribbean, the Asia-Pacific region and Hong Kong on US markets.	Leveraging Schwab brand through development, acquisitions or partnerships, depending on region.
E*Trade	Online trading in Australia, Canada and France. Partnerships established to form E-Trades in Israel, Japan (through relationship with Softbank), Scandinavia, S.Korea, Germany and C. Europe.	Partnering with local services to establish E-Trade-branded ventures. Long term: Trade anywhere on any exchange at anytime.
Ameritrade	Partnership with Cortal, a European discount broker, lets Ameritrade customers trade on the French exchange and Cortal investors trade on US markets.	Extending services through partnerships with local firms, instead of by establishing an international brand.
DLJdirect	A joint venture with Sumitomo Bank in Japan provides online trading for Japanese investors. Additional international plans to be funded in part by upcoming IPO proceeds.	Plans to expand either directly or through alliances and joint ventures with local partners.
TD Waterhouse	Online trading for Canadians and Americans on both countries' exchanges. Online trading in Aust. Offline presence in the UK and Hong Kong.	IPO proceeds to help fund international expansion. Toronto Dominion has historically grown through acquisitions.

Source: [www.thestandard.net](http://www.thestandard.net).

Second, on-line technology will facilitate unprecedented levels of convenience, access to information, and opportunities for integrating services, e.g., brokerage, banking, pensions, and smart cards. In the US, electronic access to both banking and investment services was first by telephone and now by PC, increasingly through the Internet. (In the US, of course, PC penetration is high, with 54% of households having a computer, and 31% of the population on-line, and the services are developing very rapidly; see Table 4) In the UK, banks are introducing electronic access via mobile phones, but through proprietary systems. For Hong Kong, Internet access via mobile phones and other wireless handheld devices could be an important solution. Moreover, mobile penetration is far ahead of *networked* home PCs.

**Table 4: On-line connections**

Economy	% of Homes with Computers	% of Population Online <sup>1</sup>
Australia	47% <sup>2</sup> (1998)	24% <sup>2</sup> (1998)
Canada	54% <sup>3</sup> (1998)	25% <sup>4</sup> (1999)
Hong Kong	34% <sup>4a</sup> - 48.8% <sup>4b</sup> → 50% <sup>4c</sup> (1998)	13.4% <sup>1</sup> - 18.5% <sup>4</sup> (1998)
Japan	25.2% <sup>5</sup> (1998)	11.1% <sup>1</sup> (1998)
Malaysia	na	6.3% <sup>1</sup> (199?)
Singapore	41% <sup>6a</sup> (1998)	32% <sup>6b</sup> (1998)
South Korea	15% <sup>7</sup> (1997)	6.7% <sup>1</sup> (1999)
Taiwan	34.6% <sup>8</sup> (1998)	14.3% <sup>1</sup> (1999)
UK	26.7% <sup>9</sup> (1996-97)	18% <sup>1</sup> (1998)
USA	54% <sup>10</sup> (1999)	30.7% <sup>1</sup> (1999)

Sources: 1. [nua.ic/surveys/how\\_many\\_online/n](http://nua.ic/surveys/how_many_online/n), except for Hong Kong; 2. Australian Bureau of Statistics; 3 AC Nielsen; 4a. Census & Statistics Department; 4b. Telecommunications Research Project; 4c. AC Nielsen; 5. Economic Planning Agency; 6a. [www.ec.gov.sg/ec\\_centre](http://www.ec.gov.sg/ec_centre) 6b. Percentage of adults, *Survey on General Public*, National Computer Board; 7. Ministry of Information and Communications: [webdb.mic.go.kr:8080/english/library/main63](http://webdb.mic.go.kr:8080/english/library/main63); 8. Directorate General of Budget Accounting and Statistics, Executive Yuan, ROC: [www.dgbas.gov.tw/dgbas03/englisg/stat/satur](http://www.dgbas.gov.tw/dgbas03/englisg/stat/satur); 9. Government Statistic Service: [www.statistics.gov.uk/stats/ukinfigs/stand](http://www.statistics.gov.uk/stats/ukinfigs/stand); 10. Pathfinder Study by Arbitron NewMedia reported at [www.cyberatlas.com/big\\_picture/demographics/arbitron](http://www.cyberatlas.com/big_picture/demographics/arbitron)

Third, technology will profoundly affect the cost structure of investment services. As a result, 20-30% of retail investors will shift to on-line services by 2010.<sup>20</sup> On-line services then will represent 30-40% of Hong Kong's total retail trading volume. However, access to on-line services will also facilitate a shift to foreign issues, composites, and derivatives, meaning that Hong Kong exchanges stand to lose significant volume to foreign markets unless local products fill these needs. One local initiative that could help here is if Hong Kong's second board, the Growth Enterprise Market (GEM) due to be launched in late 1999, takes off successfully.

Fourth, a sound legal foundation for on-line banking and investment services will be required. Critical regulatory issues will include price competition, off-exchange transaction matching, and integration of brokerage and banking. Singapore, for example, has established the Singapore Central Depository (CDP). The CDP functions as an on-line 'central server' and unifies account clearing. Both information technology and legal foundations need to be established for these unified clearing accounts, including standard protocols for disclosing information about unified accounts, e.g., to financial institutions or regulators.

<sup>20</sup> See the Government's "Information Paper on E-Commerce in the Securities Market in Hong Kong" at: [www.info.gov.hk/bspu/paper/index](http://www.info.gov.hk/bspu/paper/index).

## IV. The role of government

The promises held out by the Internet to the commercial and consumer communities are at once compelling and confronting – but they are perhaps even more so for governments, at least initially. Whether to intervene or not; whether to try to guide development or to let the market have free reign; whether to try and drive demand and hence uptake, because they believe it to be in the long term interests of the community; whether to protect the citizenry (or at least, certain elements of the citizenry) from certain content.

The promises of electronic commerce are even more pervasive, for e-commerce is seen to represent a fundamental change in the way that companies will operate. But where e-commerce puts tremendous pressure on companies to become more competitive and more efficient, what does it mean for governments? And for the operating environment itself?

Seeing the potential for new networking technologies to contribute to the economy – particularly at a time of financial reform – countries across Asia have been promoting the development of their national information infrastructures. Countries such as Singapore, Malaysia, Japan and even China are fiercely pushing ahead with a variety of programs. And this is seen to provide Hong Kong with an important challenge: given that its neighbors are aggressively promoting the development and use of the Internet and e-commerce, will this affect Hong Kong's status as an international trade and financial center? Can the Internet be used to leverage Hong Kong's existing physical infrastructure strengths and locational advantages? Or, does the Internet revolution threaten to negate Hong Kong's traditional advantages?

As regards the banking and finance sector that are three alternative approaches, which, broadly speaking, governments have adopted:

1. *The 'hands-off' approach* – all responsibility rests with the banks, and they decide what they want to do. This is the approach being adopted by US regulators.
2. *The 'supervisory guidelines' approach* – the regulator sets the standards for the industry. This is the more prescriptive approach and it is what the Europeans have been working towards.
3. *The 'due-diligence' approach* – the regulator works with the banks on an individual basis, discussing how the bank wants to set up Internet services to ensure that all risks are considered. This is the approach adopted in Hong Kong.

In Hong Kong, the monetary authority is taking what it itself describes as a “middle-of-the-road” approach to the issues raised by on-line banking. Instead of issuing specific guidelines, it is conducting due-diligence conversations with banks that want to launch Internet-banking services. There is nothing (yet) to suggest that this method is better or worse than any other, and the approach is certainly consistent with Hong Kong's existing commercial philosophy. But as we have attempted to illustrate so far in this paper, the uptake of e-commerce is dependent on more than banking due diligence. Indeed, in the emerging Internet

environment, it is far from assured that it will be the banks who lead the way in providing online banking or Internet transaction services; it is just as likely to be entrepreneurs perceiving an opportunity to be serviced. In other words, what is important is the wider commercial and social environment. In this section we examine some of the key elements necessary if e-commerce is to flourish and how various governments are responding.

## **Regulation**

Regulating service industries became a complex task in the 1990s due to a combination of technological convergence and a worldwide trend towards liberalization. An increasingly competitive environment challenged accepted practices. As a result, there is an on-going debate as to whether it is better for regulators to move early and provide a sound and identifiable commercial environment, or whether to remain flexible and allow the market to respond to the changing environment.

In either case, specific regulations are, now, beginning to emerge for online transactions. In July, for example, Singapore's new Electronic Transactions Act came into force. It provides the legal framework for electronic transactions and offers the transparency and predictability required for electronic contracts and digital signatures. About 200 online stores are already operating using these features, and services such as Internet banking and electronic stock trading are available.<sup>21</sup>

However, the issue may not be about *specific* regulations at all. Promoting and facilitating the interaction between IT and the banking and financial world is what appears to be required. There is as yet no case for creating a super-regulatory body, but co-ordination at the policy level *is* already a requirement. The Hong Kong Monetary Authority has proved itself a professional and internationally respected body, showing the need for specialists in a complex area of regulation in a sector vital to the economy and social welfare. Reforms of the stock exchange and futures and securities markets in Hong Kong are overdue but underway, and a second board, the Growth Enterprise Market, is being set up. Hong Kong took an equally sensible decision in 1998 to recognize the need for bringing the converging sectors of telecommunications, broadcast media and the public-private interface of computer networking under the one umbrella – that of the Information Technology and Broadcasting Bureau (ITBB).

But, if the banking and financial services sector is so vital to Hong Kong's future, it makes little sense to stress the need for an information infrastructure without also encouraging the use of it.

## **Law**

Closely associated with industry regulation is the legal infrastructure and regulation. A key concern of industry is the right to intellectual property, a key concern of business is security of information, a key concern to banks and merchants is security of payments, a key concern to customers is the privacy of personal data, and so on. Of course, these can, and

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<sup>21</sup> In Singapore, Citibank, the Development Bank of Singapore, Keppel Tat Lee Bank and Overseas-Chinese Banking Corp are all offering services online.

do, overlap. At the center of each of these issues is the notion of trust, and while trust is not something that can be guaranteed by law, clearly a rule of law, and a widely appreciated and accepted – and enforceable – legal framework, is fundamental to the successful establishment of trust. It underpins trust between dispersed transactors who feel confident they have the law backing them up.

Again, examples are emerging. The European Commission has proposed a law on the use of ‘electronic signatures’ in online transactions. This would set minimum requirements on security and liability, ensuring that electronic signatures – which enable the identity of senders and the integrity of the data to be checked – are recognized throughout the European Union.<sup>22</sup> Similarly, the EU data protection directive which is technically enforced (although not yet operable in many countries), provides a significant legislative background to customer privacy and protection of personal information. This diverges from the approach in the US. While the US approach has many advocates within the Internet community, it is worth bearing in mind that 81% of *general* Internet users in the US currently complain about privacy being a significant issue.<sup>23</sup>

The UK’s draft legislation on electronic communications (which encompasses electronic financial services) was expected to offer a “rebuttable presumption of validity for electronic signatures applied using a digital certificate from a licensed service provider”.<sup>24</sup> This would have had the effect of shifting the burden of proving fraud to the customer in an Internet banking application. While this may well be the effect of the terms and conditions in use around the world by banks now anyway, it is not the same as having the rule written into statute. The uproar which preceded the draft’s publication meant that the idea was shelved – demonstrating just how difficult formalizing some of these rules will be.

## **Security**

Many financial institutions are preparing for full banking functionality over the Internet. As we have outlined, those who do not risk losing the opportunities and customers who will be attracted to competitors who can provide such capability. Electronic banking does, however, come with some significant risks.

From a security point of view, electronic banking is rather different from electronic commerce. It is one thing to ensure that the Internet segment of a transaction is secure, using encryption and existing network functionality, but it is another to ensure that unauthorized access to internal or interbank systems is prevented. The number of users who will interact with banking systems must also give rise to security concerns – more so when cable modems, interactive television and dumb terminals give widespread Internet access.

Any means for the customer to give instructions other than in person at the branch where the account is kept gives rise to risk. The extension of risk lies in both the customer’s ability to

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<sup>22</sup> The Directive is at: [europa.eu.int/comm/dg15/en/index.htm](http://europa.eu.int/comm/dg15/en/index.htm)

<sup>23</sup> As cited by Anthony Sylvester, at the March 16 TIF Forum on electronic commerce. See the proceedings paper at: [www.trp.hku.hk/tif/papers](http://www.trp.hku.hk/tif/papers).

<sup>24</sup> See “Legal Perspectives on Digital Money in Europe,” *European Business Review*, 1999, Vol.11, No.4.

perform live transfers and the extent to which other systems may be accessible by an intruder. Banks will be anxious to eliminate that risk. They will certainly reassure customers about the security of their accounts, provided certain security precautions are taken by the customer – for both the peace of mind of the customer and the reputation of the bank.

Perhaps, as with credit cards, the customer will be liable for an amount of loss up to the time that the customer notifies the bank of a possible security breach, or a greater amount if the customer contributes to unauthorized use by not taking security precautions – this, for example, is the Commonwealth Bank of Australia's approach. However, in many cases a customer will not know that a security breach has occurred. Banks may minimize risk in other ways (such as a basic limit on transactions, and an overall activity limit per day), risking consumer disappointment in the service offered.

In Japan, bank representatives are now attempting to drive interest in Internet banking services by reassuring the public as to the security of the systems.<sup>25</sup> According to the banks, since their services are based on SECE, the process is generally safe. SECE stands for Secure Electronic Commerce Environment, and was jointly developed by Hitachi, Fujitsu, and NEC. The main objective of SECE development was to create a common and secure platform for electronic commerce business. SECE development was eventually incorporated as one of the e-commerce promotion projects of ECOM (the Electronic Commerce Promotion Council of Japan), a Ministry of International Trade and Industry (MITI) affiliate. Because of its recognition by ECOM ([www.econ.or.jp](http://www.econ.or.jp)), the SECE development project received a subsidy of some ¥1 billion from MITI.<sup>26</sup>

However, the only available Net banking services available *from the banks* are bank account balance inquiry and money transfer within Japan.<sup>27</sup> (Sanwa Bank also operates a virtual shopping mall, EC Direct, on the Internet, for which it manages payment transactions.) By contrast, NTT Data began offering Internet-based banking blended with securities services in April, through its ANSER-Web service. ANSER-Web, started in November 1997, was originally designed to offer financial institutions with bank account balance inquiry capability via the Internet.<sup>28</sup> The new banking/securities services enables users to make balance inquiries, debit/credit transactions, and money transfers, as well as to utilize securities services such as orders for stocks and application/cancellation of specified

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<sup>25</sup> Up until now, the introduction of Internet-based banking services for the public has been slow. By the end of 1998, just three banks were offering Internet banking services: Sumitomo Bank ([www.sumitomobank.co.jp](http://www.sumitomobank.co.jp)), Sanwa Bank ([www.sanwabank.co.jp](http://www.sanwabank.co.jp)), and Asahi Bank ([www.asahibank.co.jp](http://www.asahibank.co.jp)). Daiwa Bank and Daiichi Kangyo Bank are scheduled to launch Internet banking services by late-1999.

<sup>26</sup> SECE complies with the global Secure Electronic Transaction (SET) standard created by Visa International Service Association and MasterCard International Inc. It augments SET by having a Japanese Payment Option that is suitable for the common commercial practices in Japan. For security, SECE uses the same encryption methods as SET. The SECE protocol comprises a payment component (an application-level protocol for executing safe and accurate payments between consumers, shops, and financial institutions) and a certificate management component (used for electronic certificates that authenticate transactions over the Internet).

<sup>27</sup> These services are available 24 hours per day.

<sup>28</sup> So far, 116 city and local banks and credit unions have signed on as ANSER-Web customers.

contract security products. The service is to be linked to an Internet-based mobile banking service that NTT DoCoMo will offer.

### **Certification**

Key issues regarding the safety of transactions are: (i) the identification of the sender and recipient of a message (that he/she really is the sender/recipient and not somebody else); (ii) the authentication of the message (that the message has not been changed in transit); (iii) non-repudiation (that a buyer cannot falsely claim that payment has been made and a seller that payment has not been received); and (iv) encryption of the payment information (the scrambling of messages, such as credit card numbers, so that they cannot be read by unauthorized persons). Technical progress has provided potential solutions in all these areas. Digital signatures and a 'message digest', for example, can verify that a message has not been altered. A digital certificate can confirm the identity of the person who sends and digitally signs a message. 'Double-blinded encryption' also allows for payment of an 'online' order without the seller seeing the credit card number.

One of the leading examples of government action in this area is Singapore's Electronic Transactions (Certification Authority) Regulations, which came into force in February. Under the regulations parties registered with a licensed certification authority will have limited liability in electronic transactions signed with digital signatures. Applications for licensed CAs are available, with an application fee of S\$5,000, an annual fee of S\$1,000, and applicants have to satisfy integrity and operational standards ([www.cca.gov.sg](http://www.cca.gov.sg)).

## Taxation

There are two principle features of tax which concern authorities when it comes to e-transactions. The first is digital cash which will allow for business transactions to be hidden from taxing authorities, and that a significant amount of business could become invisible to the current revenue base. The second feature of tax concern is that business operations will move offshore far more readily in order to take advantage of tax benefits. There are, generally, four approaches to this:<sup>29</sup>

1. *Shut down the tax havens.* This is taking place at an OECD level, at G-8 level and also within the EU. While the authorities may not be able to close the tax havens down per se, they can 'open them up' to some degree. So, for example, the Cayman Islands is getting squeezed by law enforcement agencies from the US and the UK in order to provide greater information about transactions taking place there.
2. *Pretend that companies have never left.* Even if a company moves all of its operations offshore and only leaves behind a server and perhaps some technical contracts then governments may well consider that those companies are still operating inside their jurisdiction for tax reasons. While this has not yet happened, it is under discussion by both the OECD and the UK tax authorities.
3. *Maximize the transactions that are already taking place.* Essentially this requires a certain 'tweaking' of the current taxation models in order to make sure that electronic transactions are encompassed. While this may appear obvious, it is not easy to accomplish. For example, buying a CD from a Hong Kong music store, and downloading that same say CD from a website in London, may appear to involve the same transaction, but for the tax authorities to make sure that tax applies in the latter case is very difficult.
4. *Formulate a new tax on electronic commerce.* In the US and the EU, there is, in fact, a three-year moratorium on any taxes on Internet commerce. However, there is also a new commission which has been set up in the US specifically to address the issue of taxation on e-commerce.<sup>30</sup>

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<sup>29</sup> See Anthony Sylvester's talk at the March 16 TIF Forum on electronic commerce: [www.trp.hku.hk/tif/papers](http://www.trp.hku.hk/tif/papers).

<sup>30</sup> Before the commission had even begun its work, local and municipal authorities in the US sued the commission on the basis that they were inadequately represented.

### **The OECD's 7 Criteria for Judging Proposals to Tax the Internet**

A number of OECD studies provide a detailed discussion of many tax-related issues regarding e-commerce. The following considerations should be understood as guideposts for an efficient and equitable taxation of the Internet, but they do not recommend a particular policy approach.

1. The system should be equitable: tax-payers in similar situations which carry out similar transactions should be taxed in the same way.
2. The system should be simple: administrative costs for the tax authorities and compliance costs for taxpayers should be minimized as far as possible.
3. The rules should provide certainty for the taxpayer so that the tax consequences of a transaction are known in advance: taxpayers should know what is to be taxed and when – and where the tax is to be accounted for.
4. Any system adopted should be effective: it should produce the right amount of tax at the right time and minimize the tax considerations.
5. Economic distortions should be avoided: corporate decision-makers should be motivated by commercial rather than tax considerations.
6. The system should be sufficiently flexible and dynamic to ensure that the tax rules keep pace with technological and commercial developments.
7. Any tax arrangements adopted domestically and any changes to existing international taxation principles should be structured to ensure a fair sharing of the Internet tax base between countries, particularly important as regards division of the tax base between developed and developing countries.

*Source: OECD Observer No. 208, 1997.*

### **Copyright**

A recent draft software directive in the EU contains a clause that would ban the caching of information protected by any form of intellectual property right. That would have quite significant effects and it would also stand in stark contrast to the US situation where the caching of information is specifically protected. Consequences for the providers of valuable information could be quite profound if this were to be implemented. For example, portals would come to have quite a different dimension in the EU, than in the US or Asia, if the caching of information was banned.

In Singapore amendments to the Copyright Act in 1999 not only extended it into digital areas not previously covered, they also served to clarify the liability of network service providers in carrying copyright material over their networks and caching this material on a website.<sup>31</sup>

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<sup>31</sup> See [biz.yahoo.com/bw/990820/dc\\_newsbyt\\_2.html](http://biz.yahoo.com/bw/990820/dc_newsbyt_2.html)

## **Access**

When it comes to the mass uptake of IT, devices need to be user-friendly, reliable and cheap. By and large, these are issues which governments cannot influence directly. But governments *can* influence industry standards issues, pricing issues and innovation by promoting competition. In Hong Kong, the telecommunication regulator, OFTA, sensibly adopts a technology neutral approach, leaving the choice, and associated risk, of any permitted technology to the operators. On the other hand, Hong Kong landed itself with an ill-considered law prohibiting parallel importing, but the effect is lessened in the case of cellular phones because service operators are forbidden under terms of their license from refusing service to customers who buy their own handsets.

Supply sometimes creates its own demand, and in the case of online banking and financial services, availability is surely likely to promote demand. But the banks too must make efforts to provide user-friendly and well-designed interfaces with the public, as well as the concurrent restructuring of back-end systems. Banks will make their own cost-benefit assessments as to how far and how fast they will move in this direction, but government can also influence them by promoting greater competition between banks and other financial institutions. The Hong Kong Monetary Authority has begun to take steps in this direction with the recently announced ending of the banks interest rate cartel.

## **Network**

From the users' perspective the logical next step after device access is network access for sending or receiving. Hong Kong is ahead of the game in Asia, with four domestic fixed wireline networks (although the three new entrants since 1995 have only gained 3% of the local market) and no less than eleven wireless networks. Fixed wireless broadband networks are to be licensed from 2000, and satellite services completely liberalized. A cable-modem service is also being launched. In 2000, the beginnings of widespread Internet access by mobile phone will start. Anyone can start up an Internet service (there are over 100 registered service providers) and anyone can offer international simple voice and data resale. OFTA's policy towards wireless services has always been to license as many players as possible subject to spectrum availability. Only the domestic fixed wireline licenses are restricted (to four) and international gateway facilities licenses (four minimum, more subject to landing additional cable capacity) until after 2002.

The new entrants offer increasing choice at lower cost to banks to set up their own private networks. The big decision is the shift by the banks to abandon proprietary network standards and take the leap to open standards and the Internet. In one or two cases legacy networks have hindered the transition, but innovation by competing banks is forcing the pace.

## V. The Hong Kong initiatives

We are a leading-edge provider of a lot of technology. We provide scalable solutions today that run on everything from mainframe to Internet and offer technology encryption up to 128 bit. So the technology is available today in Hong Kong and we have the manpower to put it in. I want to ask what you see as the major criteria as to why the banks are taking so long to realize that it's on the ground today and available today?

– Participant addressing panelists at the Telecoms InfoTechnology Forum (TIF), June 8, 1999.<sup>32</sup>

I agree that the technology is available and commercially viable. This is actually the conclusion of the study group in banking, the findings of which we have published. If your question is why are banks still hesitant in introducing internet banking, the question is better addressed to the bankers!

– Raymond Li, HKMA, in response.

My response to that would be that the availability of technology is not something that necessarily makes the business use it.... We have big pipes in Hong Kong and the technology infrastructure is very, very good. We have a Cyberport but that does not necessarily mean that Hong Kong will be any better or worse in internet banking. I think that the fact that we have encryption means that the bank doesn't have to resolve that issue, and the fact that we have scale or technology is not an issue. I think it comes down to how business will use that as a competitive edge.... and until business decides how it is going to do it, and make money out of it!

– Michael Blumer, Bank of America, following up.

One of the ironies of telecommunications development as a basic support structure for a national information infrastructure and information society is the legacy problem. Cable & Wireless HKT has inherited Hongkong Telecom's 1980s digital city network, state-of-the-art in its day. That has not stopped the company having to spend many hundreds of millions of dollars in the 1990s upgrading and beginning the development of a broadband ADSL network for residential buildings and fibre-to-the-building for central business districts. Undoubtedly, the onset of competition in the local and international direct dialing markets since the mid-1990s has given the process its drive, but new switching and transmission technologies, client-server architectures, TCP/IP, and new interactive media services all demand new investments, and carry new risks. The philosophy of the Hong Kong government has consistently been minimalist in terms of direct intervention, although highly innovative on the regulatory front. The argument has always been: just sufficient regulation to help competition become effective, competition to drive investment and innovation in facilities and services. In strict contrast to Singapore or Malaysia, until recently the Hong Kong government has steered sharply away from a pro-active approach.

But there is now an inherent problem in this approach. Electronic commerce will not take off on the basis of infrastructure alone, it needs a complementary set of conditions co-existing before 'critical mass' can be reached. These include legal and security issues, they include financial issues, such as the numbers of people with credit cards and the attitude of banks

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<sup>32</sup> The proceedings document for the TIF can be found at: [www.trp.hku.hk/tif/papers.html](http://www.trp.hku.hk/tif/papers.html)

towards credit card liability, they include the numbers of people with computers, and the ease and cost of access to networks, and they include the provision of online services, such as Internet banking, to attract regular transactors. Governments have realized that they, too, have a major role to play here, by placing their own procurement procedures online and by placing their services on line. But to achieve even this level of e-commerce promotion and facilitation governments have to re-think the way they themselves are organized and the way they respond to the economic and social needs of the community.

In this regard, Hong Kong has been among the leaders internationally. The government created an Information Technology and Broadcasting Bureau (ITBB) in April 1998, bringing under one roof policy for telecommunications, the broadcast media and the government's own information technology responsibilities.<sup>33</sup> This is a recognition of the need to create a policy focus that incorporates the convergence of these three areas. Nevertheless, this still leaves related policy areas which affect the IT industrial sector, such as the Cyberport proposal, the Science Park proposal, the disbursement of applied research and development funds, and areas such as the encouragement to banks to promote online Internet banking, and the encouragement of business generally to adopt electronic commerce, in the hands of other government agencies. Co-ordination between the many agencies is always difficult, as the Commission on Innovation and Technology has acknowledged,<sup>34</sup> but increasingly necessary in this area. Hong Kong is currently grappling with this problem, and how it solves it will be of intense interest.

The government now seeks to create an overarching framework for the development of e-commerce in Hong Kong through the following initiatives -

- By becoming a leading user of electronic commerce through the implementation of **Electronic Services Delivery (ESD)**.
- Through the establishment of a **public key infrastructure (PKI)** to safeguard secure transactions conducted over open networks. Hongkong Post has been established as the public certification authority (CA) and will start providing such services by the end of 1999.
- Through the introduction of the **Electronic Transactions Bill**. This is to provide a clear legal basis for the conduct of electronic commerce and the use of digital signatures.
- By developing a common Chinese language interface to facilitate the conduct of electronic commerce in Chinese.

### **Electronic Services Delivery (ESD)**

The government will launch the first phase of the Electronic Service Delivery (ESD) scheme in the latter half of 2000 for the delivery of government services online to the public via the Internet and other possible electronic means. Through ESD, the public will be able to obtain government services 24 hours a day, seven days a week. ESD will be implemented over an

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<sup>33</sup> See TIF position paper, "Television Policy in an Era of Convergence", January 1999.

<sup>34</sup> [www.info.gov.hk/cit/](http://www.info.gov.hk/cit/)

open, common information infrastructure which will be available for use by the private sector at a later stage for the conduct of electronic transactions, thus facilitating the development of electronic commerce in the territory.<sup>35</sup>

Under the first phase of implementation, 10 government departments and public agencies will provide a range of services:

- submission of simple tax returns and tax payment
- renewal of driving and vehicle license
- application for business registration certificates
- guides on investment in Hong Kong and advice on business licensing requirements
- payment of rates, government rent and water charges
- job search and matching service

Subsequent phases are to be implemented on an on-going basis. In the long run, the government aims to include all public services amenable to electronic delivery. Through the Interactive Government Services Directory web site ([www.igsd.gov.hk](http://www.igsd.gov.hk)), members of the public can access the web sites of the participating organizations under the scheme to apply for free electronic mail service.<sup>36</sup>

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<sup>35</sup> A tender for the supply of the Phase 1 ESD system closed in April 1999. Six bids were received from local and overseas IT companies. The contracts were expected to be awarded before the end of 1999.

<sup>36</sup> Fifteen companies have joined the scheme to offer free electronic mail accounts and the scheme has been endorsed by the Hong Kong Internet Service Providers Association (<http://www.hkispas.org.hk/>).

## Electronic Transactions Bill

Sin Chung-kai, the elected Legislative Councilor for the IT constituency, writing in the Hong Kong edition of *Internet Asia*,<sup>37</sup> has summarized the proposed legislation<sup>38</sup> as follows:

The Electronic Transactions Bill of Hong Kong will adopt four major principles. Firstly, the bill should remove any legal impediments to the conduct of electronic transactions. Secondly, the bill should provide certainty and security in the conduct of electronic transactions and thereby enhancing the confidence and trust of the public in carrying out such transactions. Thirdly, the bill should adopt a technology neutral approach to cope with rapid technological changes. And fourthly, the bill should adopt a minimalist regulatory approach so as not to unnecessarily constrain the development of electronic commerce in the private sector.

Taking account of the four principles, the bill will give equivalent legal status to electronic records and digital signatures in the conduct of electronic transactions as that of their paper-based counterparts. The bill will also provide for the establishment of certification authorities to ensure trust and security in electronic transactions through the use of digital certificates and the use of public and private key technology. Hongkong Post will operate certification authority services by December of this year on a non-exclusive basis. The number of certification authorities to be established in Hong Kong will be determined by market demand.

Because of the transitional nature of the current commercial environment, certain exemptions have been included in the proposed Bill, so as to allow time to build trust within the community:

- certain generic items such as wills, trust, statutory declarations, affidavits, power of attorney, court orders, warrant, bills of exchange, documents or instruments concerning land or property transactions, etc. are exempt from the operation of the relevant provisions in the proposed legislation;
- a mechanism is provided to exempt by means of subsidiary legislation specific rules of law from the operation of the relevant provisions in the proposed legislation;
- judicial proceedings are exempt from the operation of the relevant provisions in the proposed legislation and the authorities for making court rules are empowered to apply the relevant provisions to such proceedings when the relevant courts/tribunals are ready; and
- a mechanism is provided to specify format and procedural requirements if necessary in respect of cases whereby electronic information is accepted under a rule of law.

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<sup>37</sup> August 1999, p.10.

<sup>38</sup> The draft Bill was introduced into the Legislative Council on July 14. It should be noted that in drawing up the Bill, the Government has followed the United Nations Commission on International Trade Law – the Model Law on Electronic Commerce ([www.batnet.com/oikoumene/arbunc.html](http://www.batnet.com/oikoumene/arbunc.html)).

## **Public Key Infrastructure (PKI)**

Equally important is the decision to establish Hongkong Post as a trusted 'third-party' Certification Authority (CA) to operate a public key infrastructure of electronic certificates to verify digital signatures and cryptographic key pairs. An infrastructure of CAs is essential for the facilitation of trust in e-commerce.<sup>39</sup> While the public-private services of ESD require a dedicated CA, the private sector will have to come to similar arrangements, and establish their own standards of acceptability if e-commerce is to flourish in Hong Kong.<sup>40</sup> In particular, financial institutions such as the banks and credit card companies will have to be closely involved. One concern raised, for example, by an SME at a Pacific Business Advisory Council (PBAC) e-commerce meeting in Hong Kong was the lack of merchant protection offered by Hong Kong banks against credit card fraud in contrast to US banking practice.

## **Digital 21**

Together these initiatives are grouped under the "Digital 21" strategy. The *Digital 21* Information Technology (IT) Strategy was announced by the government in November 1998. *Digital 21* is positioned as a "comprehensive strategy" to enhance and promote Hong Kong's information infrastructure and services. Overseen by the Information Technology and Broadcasting Bureau (ITBB), a broad range of initiatives have been identified to be implemented either by the ITBB itself or in collaboration with other bureaux/departments.

One of the key initiatives under the *Digital 21* Strategy is to promote the development of the local IT industry. To do so, the government has said that it will look to actively outsource government IT projects, so as to create a market of sufficient size for the local IT industry to develop. *If handled correctly – constructively – this would help to strengthen the technical and advisory services provided by various industry support organizations, thereby beginning to build the necessary agglomeration economies for the IT industry to take root: legal services, consultancy services, information and research services, technical support, graphical design, and most importantly, public and private research and development (R&D).*<sup>41</sup>

Finally, the issue of IT skilled labor shortages has been highlighted in a recent report by the Vocation Training Council (*Information Technology Sector: Manpower Survey 1998*) which found that after applications programmers, IT research and development staff were

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<sup>39</sup> Hongkong Post's role as the CA is to issue digital certificates to consumers and enterprises that wish to conduct electronic commerce. A CA acts as a clearing house for the 'public keys' used to encrypt and unencrypt electronic documents. Hongkong Post will be responsible for the maintenance of certificate repositories and directories, as well as providing value-added services such as time-stamp authority, notary and status services.

<sup>40</sup> Hongkong Post will be the root CA with subordinate CAs under it. It has signed a memorandum of understanding with Cable & Wireless HKT, making the telco the first subordinate CA, while banking consortium Jetco (the Joint Electronic Teller Services) has also been approved as a CA by the Hong Kong Monetary Authority. Jetco will become the CA for its 49 members' Internet-banking services.

<sup>41</sup> The relevant information can be found at: [www.info.gov.hk/business/commun/it.htm](http://www.info.gov.hk/business/commun/it.htm).

most in demand across all sectors. IT R&D staff also experienced the highest annual turnover rate, at 20%.<sup>42</sup> The finance, insurance, real estate and business services sector was the largest employer of IT employees in Hong Kong, with over 32%, and had the second highest percentage of vacancies after the software vendors, at nearly 7%. As one banker remarked during research for this paper, it is not just a question of finding someone with the right set of IT skills and aptitude, but also someone who can see the business implications and can translate them into a language the financial and marketing people can understand. That all-round flexibility is something that traditional education and training programs are just not geared up to address.

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<sup>42</sup> During the period January 1996 to January 1998, IT R&D staff numbers actually fell by 38%.

## VI. A policy-maker's checklist

As we noted at the outset, e-commerce is destined to change the way that business is done. All business – not just Internet and hi-tech high flyers. As Larry Ellison (of Oracle) is fond of remarking, “If you don’t think your industry will be *ebusinessed*, you’re wrong.”<sup>43</sup> And yet still many commentators cling to the concept of national competitive advantage, and that one locality can garner and then use e-commerce as a competitive weapon against another locality. This is just plain wrong. What *can* be done is to promote a framework of commercial and social practices that provide the environment and the stimulation for electronic commerce to flourish.

Thus, while some continue to espouse that Hong Kong is barely out of the starting gate *comparatively*, in that there are no activities similar to Singapore’s Electronic Commerce Hotbed or Taiwan’s National Information Infrastructure, it is instructive to note that, at the launch of CommerceNet Singapore in 1998, Brigadier-General George Yeo,<sup>44</sup> stated that he and others held the view that Hong Kong may yet be playing a smarter game. Why? Because Hong Kong was seen to be concentrating on the promotion of the commercial environment. In response, Minister Yeo called for Singapore to become the principal *trusted* hub for regional e-commerce.

In the development of banking and financial centers of electronic commerce, the same emerging issues are being faced by everyone. This means that the same threats and the same opportunities are being presented to those with the chance to create sustainable frameworks. Below we provide a checklist of some of the choices and questions which have been raised through recent consultation forums, which are being posted by industry representatives in conferences and trade journals, or which we at the TIF believe require consideration.

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<sup>43</sup> Cited in *Business 2.0*, August 1999, p.162.

<sup>44</sup> Singapore’s Minister for Trade and Industry.

### **Internet Contracts**

- What are the requirements for a binding contract to be made over the Internet?
- How does one decide when a contract formed over the Internet is made?
- What dispute resolution methods are there to resolve online transaction disputes?
- How will the local consumer protection legislation cope with domestic and cross border online transactions?
- How will the issue of jurisdiction be determined for cross border transactions?
- Which country's law will apply to an online contract?

### **Payment Mechanisms for Electronic Commerce**

- Is the legislation governing authentication and verification of information seen as effective and enforceable?
- What is the legal nature of electronic money or digital cash?
- How applicable are the rules governing money laundering over the Internet?

### **Consumer Protection**

- What mechanisms or institutions of recourse do consumers have?
- Who is liable in the event of payment disputes or merchandise disputes?
- What are the rights of the consumer in electronic transactions?
- How are these rights (or even the lack thereof) being made known to the local community?

### **Merchant Protection**

- What mechanisms or institutions of recourse do merchants have?
- What protection (i.e., read: encouragement) is provided to merchants to provide on-line payment facilities?
- What are the rights of the merchant in electronic transactions?
- How are these rights being made known to the local trading community?

### **General Data Protection**

- How effective is the legislation governing protection of data?
- What types of data are regulated?
- What types of activity over the Internet are regulated?
- What are the obligations of registration for Internet data users and Internet service providers?

### **Taxation**

- What are the tax considerations of starting an Internet business?
- What is the tax treatment of digital cash?
- How effective are the domestic laws governing international taxation and planning?
- How does value-added taxes apply to supplies made over the Internet?

### **Computer Crime**

- What criminal offences could/should apply to participants involved in electronic commerce?
- What are the applicable laws and how do they control the electronic spread of viruses, logic bombs and other malicious code?
- For crimes committed over the Internet, what is the special significance and difficulty of adducing computer-generated evidence?
- What is the courts' jurisdiction over criminals who use the Internet abroad?
- How far should existing laws that apply to obscene digital articles?

### **Online Tort**

- How will liability affect e-commerce transactions?
- Do the rules governing liability differ significantly from those governing off-line transactions?
- When can information published over the web be the basis of litigation?
- What are internet service/access providers' potential liabilities?
- What law will apply to resolve such disputes?

### **Intellectual Property**

- What is the reach of the courts' jurisdiction over trade mark infringers?
- Where must an Internet work be created to be protected by copyright?
- In what ways can the copyright in works on the Internet be infringed?
- What legal remedies exist against those who use another's trade mark as a domain name?

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