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PARIS E-COMMERCE FORUM

ELECTRONIC COMMERCE

INITIAL SURVEY OF UNILATERAL LIBERALISATION AND FACILITATION MEASURES

This document represents work in progress by the Trade Directorate. The Working Party of the Trade Committee has agreed to make it available to participants at the Paris E-Commerce Forum on that basis.

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ELECTRONIC COMMERCE: INITIAL SURVEY OF UNILATERAL LIBERALISATION AND FACILITATION MEASURES

Introduction

1. This paper reports initial results from a Secretariat survey of recent unilateral liberalisation and facilitation measures relevant to the growth of Internet-based electronic commerce that have been undertaken by Governments in both OECD and non-OECD member economies. The survey forms one aspect of the work programme approved by the Trade Committee at its meeting of 16-17th February 1999.¹ The other elements of that work are expected to be completed by October 1999.²

2. The objective of the survey is to assist in developing a clearer picture of the role of *trade policy* in fostering Internet-based e-commerce. Accordingly the Secretariat has focused on researching examples of measures, adopted unilaterally by Governments, of the following types: **liberalisation** (e.g. reductions in tariffs, relaxation of foreign investment restrictions), and **facilitation** (e.g. removal of taxes, provision of subsidies for computer and Internet installation and use). However in most cases, trade policy *per se* has not been the driving motivation for the adoption of liberalisation and facilitation measures; rather, the measures have arisen from *inter alia* telecommunications, information technology, economic and social policy initiatives. Furthermore, in some cases measures have been taken directly pursuant to an Internet or Electronic Commerce initiative, whilst in other cases, the adoption of similar measures has arisen from a broader reform process, e.g. in the telecom sector, with indirect facilitation effects for e-commerce.

3. The initial survey highlights the central role of telecommunications liberalisation and reform in encouraging the development of the Internet, including as a vehicle for e-commerce.³ Several Government initiatives pertaining to electronic commerce and the Internet specifically refer to current or planned telecom reform -- ending government monopolies, allowing competition and foreign participation in the provision of telecommunications services, developing infrastructure and building new networks -- as core elements of their efforts to facilitate Internet use and encourage e-commerce. Other significant measures include the removal of taxes and duties on computers and equipment, and the installation of public access facilities in schools, libraries and post-offices. Finally, there are a range of educative programmes aimed at encouraging domestic use of the Internet, such as the establishment of information centres, programmes to assist companies in building web sites, putting on-line administrative forms and information from public departments.

4. Two further issues bear emphasising with regard to the survey's *coverage* of measures. First, the Secretariat has not attempted to analyse how the various national liberalisation/facilitation measures that have been adopted relate to or are affected by national or supranational regulatory measures pertaining to the Internet and electronic commerce. There may well be trade policy issues arising from the latter type of

¹ TC/TC/M(99)1/PROV, see paragraphs 55-56.

² An initial assessment of GATS commitments applicable to on-line services supply has been undertaken (TD/TC/WP(99)37). A paper providing case studies of "downloadable" products and on customs duties for such products when delivered in "physical" form, will be completed by October 1999.

³ The Working Party on Telecommunications and Information Services Policies (TISP) of the Committee for Information, Computer and Communications Policy has recently undertaken a review of market openness and trade in telecommunications (DSTI/ICCP/TISP(99)5) which outlines the policy issues involved in liberalisation of telecom markets.

measures as well. Second, the examples of fiscal measures that have been located are of varying relevance for trade policy; with reductions in tariffs and taxes likely to be the most relevant liberalising trade policy-related measures, the granting of fiscal “location” or “performance” incentives, as in the various “high-tech parks” examples, likely to be the most relevant distorting trade policy-related measures, and the provision of funds to schools and other public access points likely to be of minor trade policy relevance.

5. The initial survey presented here was undertaken principally by a search of government websites, newspaper archives (the Financial Times, the International Herald Tribune, Le Monde, Libération, and the Economist), other news services and various specialist journals. The measures adopted by some countries received more publicity than others. Therefore the paper does not purport to present an exhaustive survey. Rather, its purpose is to provide an initial overview of the various types of measures adopted by governments over recent months. Thus the paper provides a description of policy measures taken or planned in five countries for which most information was readily available. A summary of measures found for a range of other countries forms the second part of the survey. Finally, some examples of the role of governments in promoting high-technology industrial parks are provided in the final section. The three cases presented are examples of a trend in East Asian countries towards the construction of zones devoted to technological innovation and development; which should not be seen as suggesting that there are not other examples from other regions.

6. With a new round of multilateral trade negotiations likely to be launched by the end of 1999, Delegations may wish to consider this survey as a starting point for broader and deeper analysis of specific types of trade-related liberalisation. Noting too, that the International Trade Centre (WTO/UNCTAD) has recently launched a survey of national e-commerce strategies in developing countries, Delegations may also wish to submit this paper to that exercise.⁴

Country examples of government liberalisation and facilitation measures

Argentina

7. The Argentine Government is undertaking significant telecommunications liberalisation, with an end to the existing monopoly planned for November 1999. At that time, the Government will issue two additional licences for local and long-distance calls and international voice services. Three more licenses will be available a year later for these services, and by November 2001 international telephone services are planned to be completely liberalised. Two digital mobile phone licences for the greater Buenos Aires area have already been auctioned, one to the American company GTE, the other to a joint-venture between Telecom Argentina (the provider of fixed-line telephony) and Telefonica de Argentina. A further four similar licenses for the interior of the country will be auctioned in late June 1999.⁵

8. Argentina’s cable telephone and TV network is already comparatively developed, with cable modem companies already accounting for nearly 5% of the Internet Service Provider (ISP) market. There are short and medium term projects for international cable systems and satellite facilitation projects to be completed; some are already in operation.

⁴ The ITC Study involves surveying government agencies, trade support institutions and selected enterprises in developing countries. It aims to identify the ways in which national e-commerce strategies have been developed, and to achieve an understanding of constraints experienced in the use and expansion of e-commerce as a vehicle for marketing, sales and communication for firms.

⁵ The Financial Times, June 17, 1999, p.22.

9. The Government's Internet policy directs the Secretary of Communications (SECOM) to develop programmes for the expansion of the Internet in the country. So far, SECOM has convened a number of public hearings and inquiries, which have resulted in the introduction of regulations and public utility programmes in order to facilitate Internet access. Measures include a reduction by approximately half of the costs for ISPs for international connections and the establishment of a special number "Call Internet" by which telephone calls between the end-user and the ISP are transferred. The latter allows users to economise on their dial-up costs by up to 50%. A promotional scheme on telephone prices was approved for the use of Call Internet, which will remain unchanged until January 1st 2000, and which includes reduced rates for educational institutions. Among other changes to the arrangements between ISPs and telecoms, the SECOM implemented a standard contract, which is to be used between the two parties until January 1st 2000.⁶

10. Other infrastructure projects have been approved by the Government pursuant to its Internet policy, such as the Internet 2 Argentina, the telemedicine and the argentin@internet.todos projects. In May 1998, a resolution was passed permitting governmental and non-governmental organisations to provide non-profit Internet access services free of charge. SECOM has contracted with the International Telecommunication Union for the installation and administration of 500 technology units (CTCs), to allow access to email, fax and public telephones in isolated and/or low-income areas. The Ministry of Education has introduced a variety of measures designed to promote use and access to electronic networks, such as linking national universities by a dedicated network, connecting research centres, and eventually schools.⁷

Bangladesh

11. The Government of Bangladesh has been gradually liberalising its telecommunications sector, with the opening of the sector to foreign investment and the admission of private companies to provide Internet services. International links use the government monopoly Bangladesh Telephone and Telegraph Board (BTTB), which recently began offering an Internet service, and has plans for public access facilities and a fibre backbone. An independent Telecom Regulatory Commission is being established and planned to be operational in mid-1999; one of its functions will be to direct the privatisation of state-owned enterprises and improve the efficiency of the approval and tender process for new exchanges and satellite links.

12. A Build-Operate-Transfer project for a 300,000-line network telephone network in Dhaka, under a 25-year concession is to be implemented by the Ministry of Posts and Telecommunications. The current arrangement whereby the BTTB provides the circuits for the three cellular operators in the country does not function efficiently - only about 34% of cellular calls are able to be completed. The license fee for the new project is relatively small but the government keeps a stake in the venture through its entitlement to share in profits when it becomes successful. The licence is to be awarded July 7.⁸

13. In June 1998, the Government removed import duties and value-added tax on computer hardware and software. This resulted in a reduction of one third for the prices of computers, and a corresponding increase in sales: the number of PCs sold in 1997 was 40,000; it rose to 120,000 in 1998. However, public

⁶ On the Internet, May/June 1999, p22.

⁷ Ibid.

⁸ Financial Times Survey "South Asian Software and Services", June 2, 1999; advertisement of the Government of the People's Republic of Bangladesh, March 26, 1999, International Herald Tribune.

access facilities continue to be important, as PCs remain too expensive for most companies and individuals.⁹

14. The computer science and engineering departments of IT institutes have been identified by the Government as a priority area for investment. Currently, about 500 IT students graduate each year; the government's target for the year 2001 is that 10,000 programmers graduate annually. Computer literacy is being enhanced by the free distribution of computer equipment to secondary schools and colleges.¹⁰

15. The Government, in co-operation with the Bangladesh Computer Council and the private sector association of computer sellers, plans to establish an "IT village". The objective of this high-tech zone is to provide an area in which foreign and local companies have access to all necessary services and facilities.¹¹

China

16. The Chinese Government inaugurated an official e-commerce site (MeetChina.com) in April 1999, with the goals of facilitating e-commerce between China and the US and promoting Chinese enterprises. The site is the result of a joint venture between the Chinese Ministry of Information and Industry, and US Business Network, Inc., a wholly-owned foreign enterprise operating in China. The Ministry predicts that by the end of July 1999, the site will provide access to 15,000 Chinese enterprises, and eventually to 4 million.¹² Its on-line auction page is planned to be available by early July 1999.¹³

17. The Information and Industry Ministry also has a stake in a Chinese version of amazon.com, through its creation of a consortium of government and private interests called China Information Highway Corporation. In partnership with Compaq Computer HK Ltd, the "Beijing Book Centre Online" offers more than 160,000 Chinese language titles. The People's Bank of China and several commercial banks are involved in testing methods of secure electronic payment for on-line purchases on this type of site. Other ministries are involved in encouraging the development of e-commerce: the Internal Trade Ministry launched a programme to assist Chinese companies to build their own web sites in 1996. "HiChina" has already built sites for 1,500 enterprises and recently announced a new plan for the creation of 10,000 company web sites by the end of the year 2000.

18. China Telecom has reduced its access rates by half from the beginning of March 1999 in order to encourage Internet use¹⁴ and it announced at the same time that it would provide higher speed data lines to government departments. Already a substantial amount of government information is on the Web, including Government-sponsored news organisations.¹⁵ The establishment of Internet cafés in larger cities has been approved, although they are reported to be closely monitored by the authorities.¹⁶

19. The Government has issued licences for international fixed-line calls to the two principal rivals of China Telecom, Jitong Communications and China Unicom. The companies have been permitted to

⁹ On the Internet, May/June 1999, p32.

¹⁰ Ibid.

¹¹ Financial Times Survey "South Asian Software and Services", June 2, 1999; advertisement of the Government of the People's Republic of Bangladesh, March 26, 1999, International Herald Tribune.

¹² <http://www.libération.com>

¹³ <http://www.meetchina.com>

¹⁴ <http://www.libération.com>

¹⁵ Upside Media Inc., June 29, 1999

¹⁶ International Herald Tribune, April 1, 1999; <http://www.iht.com>; The Financial Times, August 2, 1999.

conduct Internet telephony for a six-month trial period. Both operators report large sales of Internet phone cards, which allow customers to make international direct dial calls using Internet Protocol technology, at significantly lower rates. The Government's decision to end its 50-year monopoly over fixed line international calls is reported to be an attempt to respond to demand and at the same time present an alternative to the many illegal phone operators that have flourished throughout the country in recent months.¹⁷

20. Internet content provision remains largely closed; the country's eight Internet content providers recently reached agreement about industry regulation in order to defend themselves against foreign competition.¹⁸ However, in June 1999, the most widely circulated newspaper in China, *The People's Daily*, agreed to form a "strategic alliance" with the American ChinaMallUSA.com. One of the few foreign companies licensed to conduct business on the web and retail operations in China, ChinaMallUSA.com offers Internet marketing and selling, web leasing, and has already created web sites for e-commerce between the two countries. The purpose of the joint effort is to promote the development of e-commerce in China.¹⁹ In addition, the American operator AT&T has succeeded in concluding a joint venture with Shanghai Post and Telecommunication and Shanghai Information and Investment to offer Internet telephony services in the Pudong Special Economic zone.²⁰

France

21. The French government has invested in infrastructure measures and a variety of domestic programmes aimed at facilitating use of the Internet. The *Projet d'action gouvernemental pour la société de l'information* (PAGSI), launched in early 1998, involves a range of initiatives and reforms aimed at facilitating access to the Internet and encouraging its use. A significant policy decision arising from the many reviews undertaken as part of the project is that of lifting the restrictions on the use of encryption technology. Other initiatives include the establishment of a cultural gateway, a free host for cultural associations in partnership with the Government, the creation of 98 multimedia culture centres and the installation of computers in rural libraries.

22. By the end of 1998, the number of schools connected to the Internet had increased, for ordinary secondary schools from less than 40% to 85%; from 20% to 55% for secondary schools for younger students and from 1% to over 10% for primary schools. A new administrative gateway, "AdmiFrance" has been established, providing on-line availability of over 300 forms and the possibility of remote access services, e.g. paying of taxes.²¹ In addition to access to information on Government departments, the National Library has put its Catalogue BN-Opale Plus on Internet. In several months, audio-visual documents and texts in numeric format will be added to the catalogue, and be freely accessible.²² Free Internet access is to be available from schools, cultural centres, national employment agencies and libraries.²³

23. France Telecom, in co-operation with IBM, is introducing the "Webphone", a small terminal about the size of the Minitel. Originally planned for the end of 1998, trials in the cities of Rennes and

¹⁷ The Financial Times, July 9, 1999.

¹⁸ International Herald Tribune, April 10, 1999; <http://www.iht.com>

¹⁹ <http://www.ft.com>, June 18, 1999.

²⁰ <http://www.techweb.com>

²¹ <http://www.internet.gouv.fr>

²² Catalogue.bnf.fr; Le Monde, June 8, 1999.

²³ <http://www.libération.com>; Financial Times January 21, 1999, <http://www.ft.com>

Toulouse will take place this year. “Webphone” integrates features of the Minitel with basic Internet functions, and will allow Internet access, email, and on-line purchasing.²⁴ The Government also plans to auction licenses for mobile phones over the next few years.²⁵

24. Other measures include the installation of 1000 Mac computers in post offices, which allow consumers, through use of a Carte CyberPoste, to have internet access and e-mail accounts, planned for July 1999, and users will be charged 50F for the first hour and 30F per hour thereafter²⁶. Additionally, as a result of pressure from internet user groups, France Telecom has introduced a reduced “forfait internet” of 100F per month for 20 hours of local connections, with the result that prices in France are now among the least expensive in Europe. Prices for Internet access for businesses have been reduced by 20%.²⁷

India

25. From late 1998, India began dismantling its state monopoly on Internet provision; by allowing an unrestricted number of licenses for Internet providers to offer both direct telecom connections and international gateway access. License fees are low and there are generally no eligibility conditions. Foreign investment is permitted up to 49% in the new ISPs. By the beginning of June 1999, about 130 private licenses had been issued.²⁸

26. A programme for licensing of new local telephone operators has recently been implemented in an effort to attract new licensees. Out of the 20 licenses issued four years ago, currently only three are operational. In order to improve administrative efficiency, new incentives are being offered to licensees for operations in rural areas: a one time entry fee for a license of 20 years, renewable for a further ten years and operable on a profit-sharing basis.²⁹

27. In addition to these reforms, a package of liberalisation measures for India’s telecommunications and satellite policies will come into effect January 1, 2000. Increased competition will be allowed in local calling services and new types of satellite broadcasts from within the country will be permitted. Television companies will no longer be required to uplink broadcast signals through the state-controlled VSDNL. After August 1, 1999 new firms may broadcast signals to satellites as long as they are Indian companies, even if they do not have previous experience in broadcasting, as was the rule. In addition, current restrictions on cable television networks will be lifted so that they may provide voice and data communications.

28. Other reforms include the establishment of networks of multimedia information kiosks, concentrated particularly in rural areas, and the division of the Department of Telecommunications into separate licensing and commercial corporations by 2001. One of its goals is to increase the penetration of phones to seven per 100 inhabitants by 2005.³⁰

²⁴ <http://www.libération.com>; Financial Times, June 9, 1999, p.11.

²⁵ International Herald Tribune, June 10, 1999; <http://iht.com>.

²⁶ Le Monde, 1 July 1999, p.32, <http://www.libération.com>; International Herald Tribune, June 3, 1999; <http://www.iht.com>.

²⁷ <http://www.libération.com>

²⁸ Financial Times, June 2, 1999; <http://www.ft.com>

²⁹ Financial Times Survey “South Asian Software and Services”, June 2, 1999

³⁰ Financial Times Survey “South Asian Software and Services”, June 2, 1999; 1999 Reuters Limited; Business Line, June 23, 1998; <http://www.ft.com>

29. At a regional level, the Tamil Nadu government has recently implemented a project worth US\$1.25 million in order to promote on-line content in the Tamil language. This involves support for a state-level Tamil Internet research centre, a World Tamil university and keyboard standardisation drives. It is to be complemented by investment in infrastructure to facilitate Internet access in the region, through Internet kiosks and community centres.³¹ The National Taskforce on Information Technology and Software Development recommends inter alia, the establishment of a high-tech park, following Malaysia's model of the MultiMedia SuperCorridor.³²

Summary of other measures gleaned from the initial survey

- **Afghanistan:** Restoration of telephone services and eventual Internet access is planned for the summer. The American company TSI was chosen for the project, which began with the installation of lines in Kandahar and in the capital Kabul.³³
- **Bhutan:** The Government of Bhutan has lifted its ban on television and launched a government Internet server. The creation of DrukNet as the official Internet Service Provider in Bhutan, is the result of a joint project between UNDP, the Asia Pacific Development Information Programme and Cisco Systems.³⁴
- **Canada:** In May 1999 the Canadian Radio-television and Telecommunications Commission (CRTC) announced its decision to leave new media services on the Internet unregulated. Generally applicable Canadian laws, self regulation by the industry, content filtering software and increased media awareness are seen as appropriate tools to deal with illegal and offensive content. The CRTC is considering the issue of costs of Internet access and was to issue its decision concerning its regulatory approach to high-speed access on cable in mid September, 1999. Access to high-speed local telecommunications and cable companies, at tariffed rates for retail Internet Service providers, is already mandated by the Commission.³⁵ Also in May, the CTRC approved an application by Telesat Canada for the deregulation of its fixed satellite services, to be effective from March 1, 2000. The deregulation of earth station equipment and other competitive Telesat services has already been approved by the CRTC.³⁶ In addition to these regulatory measures, the Government of Canada issued its Electronic Commerce Strategy in September 1998, and plans to have its national electronic commerce policy framework in place by the end of 1999. The areas of privacy, electronic signatures, consumer protection, cryptography, tax neutrality, standards and Public Key Infrastructure represent the seven central policy priorities of Canada's national framework. Moreover, complementing the national electronic commerce policy framework, the Canadian government has launched the "Connecting Canadians" initiative, a national agenda designed to make Canada one of the most connected nations in the world by the year 2000, and a leader in the knowledge-based economy. There are six "pillars" of the connectness agenda, each of which are interrelated and aim to keep Canada on the cutting edge in the use and development of information technologies and applications. These are: promoting and ensuring Canadians' access to the information infrastructure; developing Canadian digital content; putting Governments on-line; encouraging the development of "smart communities"; "branding" a connected Canada to the world; and making Canada a world leader in electronic commerce.

³¹ On the Internet, May/June 1999, p.36.

³² On the Internet, September/October 1998, p.34.

³³ <http://www.libération.com>

³⁴ International Herald Tribune, May 20, 1999; <http://www.iht.com>; Newsbytes.com, June 10, 1999.

³⁵ News Release, Canadian Radio-television and Telecommunications Commission, May 17, 1999, <http://www.crtc.gc.ca>; Financial Times, October 2, 1998, <http://www.ft.com>.

³⁶ News Release, Canadian Radio-television and Telecommunications Commission, May 25, 1999, <http://www.crtc.gc.ca>.

- **Hong Kong:** Markets for mobile telephone services, public paging, Internet, calling card and international value-added services are fully liberalised. In March 1998 Hong Kong Telecom (now Cable and Wireless HKT) introduced interactive television, available initially to 70% of homes, which allowed video, music and high-speed access to the Internet.³⁷ Cable and Wireless HKT will lose its last area of monopoly in January 2000, when the Government will open the external telecommunications facilities market to competition.
- **Japan:** On the initiative of the Advanced Information and Telecommunications Society Promotion Headquarters, led by the Prime Minister, and in accordance with the private sector's initiative principles, Japan has implemented a number of measures to encourage e-commerce. One important measure is the Electronic Signature Bill, which aims to establish a legal framework where electronic signatures are recognised as equivalent to hand-written signatures and seals. This Bill is currently being drafted for tabling in the next Diet session. The Japanese government also recognises the importance of developing electronic administrative procedures such as procurement, application and permission and promoting networking, so as to improve quality of public service and efficiency in administrative work, as well as enabling citizens and enterprises to have access to appropriate public services at low cost. Relevant ministries in Japan are now discussing how best to improve infrastructures for Electronic Government, where administrative services and the provision of official information will be delivered, in principle, through the internet by 2003. Other individual measures include: a project on internet cash (ICASH) by Cyber Business Association (CBA), research and development projects on the Next-Generation Internet, the INGECEP project by Telecom Services Association (TELESA) which are undertaken by the Ministry of Posts and Telecommunications. Other projects which are implemented in the private sector by the Ministry of International Trade and Industry include demonstrative experiments on EDI for Trade and Finance, measures to support international trade activities relating to information technology such as EDI for Export/Import, and other measures to realise a society with an advanced information technology.
- **Singapore:** The Government has begun to liberalise its Internet access service provision by freeing up license eligibility conditions. The tendering process, by which the country's third IASP, CyberWay, entered the market, will be replaced.³⁸ About a year ago, Singapore experimented with the introduction of a broadband network based on PCs. It had very few subscribers and its video-on-demand aspect has not been successful. Singapore Telecom (SingTel) is thus reported to be considering transferring the service over to television.³⁹ New services providing integrated telecommunications and Internet capabilities, are to be introduced by SingTel later this year.⁴⁰ The Government has decided to establish a university specialised in teaching principles and commercial practices on the Internet. Its objective is to make Singapore one of the world's technical and financial centres for electronic commerce.⁴¹
- **Spain:** In December 1998, Spain issued an operating licence for British Telecom to create a new network, using Nortel Networks technology, for the development of Internet telephony and multimedia. Investment in this project from British Telecom represents several million pounds. The new services are expected to be available from the beginning of next year.⁴²
- **United Kingdom:** The Performance and Management Unit of the British Cabinet Office released a report on 13th September, 1999⁴³ that sets out the Government's strategy for enhancing the UK as a

³⁷ The Economist, March 13, 1999, <http://www.economist.com>

³⁸ AFX (AP) Asia, October 8, 1998, Business Times (Singapore), October 9, 1998; <http://www.ft.com>

³⁹ The Economist, March 13, 1999, <http://www.economist.com>

⁴⁰ Newsbytes. Com, June 22, 1999.

⁴¹ Le Monde, June 29, 1999.

⁴² Le Monde, June 2, 1999.

⁴³ See <http://www.cabinet-office.gov.uk/Innovation/1999/ecommerce>

favourable environment for the development of e-commerce. “E-commerce@its.best.uk” identifies access difficulties, problems of understanding on the part of businesses, the lack of a clear regulatory framework, and lack of confidence relating to use of e-commerce systems (fraud, privacy concerns) as key barriers to the growth of e-commerce. The report suggests three priority areas for the Government: the overcoming of business inertia, ensuring that Government actions encourage the take-off of e-commerce and co-ordination between the Government and industry. It recommends sixty policy measures, to be undertaken both immediately and over the long term. These range from measures aimed at improving foundations for development, such as the conducting of reviews by the Office of Fair Trading and the telecommunications regulatory body (OFTEL) to identify barriers to competition in electronic markets, to establishing national targets for IT literacy. Recommendations concerning access include the encouragement of telecommunications operators to offer a wider range of tariff structure options and consider new interconnection arrangements. Other measures include the establishment of an Internet Crime Unit and the appointment of an “e-Minister” on Information Age issues.

- **United States:** The Federal Communications Commission has recently been requested to review rural Internet access and consider regulatory reform aimed at improving access to infrastructure in rural areas. There is some pressure from Senators for the FCC to enforce universal service provisions in the 1996 Telecommunications Act, which committed itself to nation-wide access to the most recent advances in technology.⁴⁴ There is bipartisan support for a new Act which gives 30% and 50% tax credits to businesses that donate computers to schools and disadvantaged communities. The *New Millenium Classrooms Act* was introduced in the House on June 22, 1999.⁴⁵

⁴⁴ Reuters, June 11, 1999.

⁴⁵ Newsbytes.com, June 23, 1999.

High-technology industrial parks

The concept of a high-technology park, which would combine commercial, research and residential facilities, originated nearly twenty years ago in Taiwan with the foundation of the Hsinchu Science-based Industrial Park. Conceived as a centre for technological research, innovation and industry, this high-tech zone was designed to assist the country in its transition from a labour intensive industrial base to a knowledge-based society.⁴⁶ Today a new generation of high-tech neighbourhoods is emerging in South East Asia. Jointly funded by governments and private investment, the goal of these projects is to create global communities living on the leading edge of the information society.⁴⁷ Technology parks are under construction and partly operational in Hong Kong, Singapore and Malaysia and similar plans are being considered in other countries. The National Taskforce on Information Technology and Software Development in India recommended recently the establishment of a high-tech park, following Malaysia's model of the Multimedia Super Corridor.⁴⁸ On a smaller scale, the government of Bangladesh, in co-operation with the national computer council and private sector association of computer sellers, plans to establish its own "IT village".⁴⁹

CyberPort - Hong Kong

The creation of the HK\$13 billion (US\$1.68 billion) "CyberPort" - an international technology centre offering high-speed telecommunications and computing services - was announced by the Government in March 1999. The park is to be located on 260,000 square metres at Telegraph Bay, Pokfulam on the South West Coast of Hong Kong Island.

The land is to be contributed by the Government however, most of the work and investment will originate from the private sector. The local conglomerate who put forward the idea for CyberPort, Pacific Century Group, will develop one third of the site for upmarket residential apartments in return for its significant financial backing. Twelve multinational companies have already signed letters of intent to be founding tenants, including Hewlett-Packard, IBM, Oracle Corporation, Yahoo Inc., Sybase, Softbank Corporation.⁵⁰ Cisco and Microsoft have also expressed interest in establishing an office on the premises.⁵¹ The site will include a shopping mall, hotel and residential apartments, exhibition and trade show facilities, library, computing facilities and an "interface" with universities and research institutions.⁵² An important inducement to companies wishing to establish in the region is the inexpensive rental for companies; office rents are planned to be 70% cheaper than market rates in the commercial districts of Hong Kong. Construction was scheduled to begin in September 1999, with a planned completion date for the final phase in 2007.

⁴⁶ <http://www.sipa.gov.tw>

⁴⁷ International Herald Tribune, April 6, 1999, p. 9; Multimedia Development Corporation site, <http://www.mdc.com.my>

⁴⁸ On the Internet, September/October 1998, p.34.

⁴⁹ Advertisement of the Government of the People's Republic of Bangladesh, March 26, 1999, International Herald Tribune.

⁵⁰ Newsbytes.com, March 18, 1999.

⁵¹ Hong Kong News, May/June 1999, p.8.

⁵² Newsbytes.com, April, 14, 1999, International Herald Tribune, April 6, 1999, p. 9.

Multimedia Super Corridor - Malaysia

The Multimedia Super Corridor (MSC), Prime Minister Mahathir's strategy for attracting world technology leaders to Malaysia, is in the initial stages of construction. With a projected cost of US\$20 billion, the project has a twenty-year time frame for its development in three distinct phases.⁵³ The MSC is a fifty kilometre stretch of greenfield corridor, fifteen kilometres wide, which starts at the Kuala Lumpur City Centre and runs south to the Kuala Lumpur International Airport. It contains multimedia enterprises, a university, international technology operations and research and development centres. Two of the world's first "smart cities" are located in the MSC: Putrajaya, which will become the new governmental and administrative centre of Malaysia, and Cyberjaya, a dedicated village for multimedia industries.⁵⁴ Tenants who have already established operations include Microsoft, NTT and Lucent.

The following seven electronic business themes are identified: electronic government, telemedicine, R&D clusters, world-wide remote manufacturing, borderless marketing services, multimedia funds transfer and smart schools. Companies who wish to establish operations in the MSC are invited to qualify for one of these sectors.⁵⁵ In order to qualify for MSC status, companies must satisfy three criteria: (i) they must be a provider or significant user of multimedia goods and services; (ii) they must employ a substantial number of knowledge workers; (iii) they must be able to transfer technology and/or knowledge to Malaysia, or otherwise contribute to the development of the MSC and the Malaysian economy.⁵⁶ In the initial stage, incentives to companies include 10 years tax-free status, tax exemption from multimedia equipment, unrestrictive foreign exchange and ownership regulations. Special relaxed procedures for the recruitment of expatriate workers apply to the area.⁵⁷

The multimedia network for the MSC comprises fibre-optic backbone, high bandwidth links from the MSC to the rest of Malaysia and other countries, including fibre-optic links to other ASEAN countries, Japan, the US and Europe. Subsequent phases to be implemented involve the linking of the MSC by a new web of corridors to other cybercities in Malaysia (phase 2) and the transformation of the country into a cluster of smart cities which are to become the platform for the International Cybercourt of Justice (third and final phase).⁵⁸

Hsinchu Science Industrial Park - Taiwan

The Hsinchu Science-based Industrial Park (HSIP) was opened in December 1980 in Taiwan as a zone for development of high-tech industries. Since then, the Government has invested more than US\$583 million in the development of the park, which has become the centre of Taiwan's research and development activities. HSIP is situated just outside of municipal Hsinchu, covering 594 hectares.⁵⁹ It is home to 245 local and foreign companies, with combined annual sales of more than US\$13.9 billion at the end of 1997.

⁵³ International Herald Tribune, April 6, 1999, p.11.

⁵⁴ Multimedia Development Corporation site, <http://www.mdc.com.my>

⁵⁵ <http://www.asiapages.com.sg>

⁵⁶ Multimedia Development Corporation site, <http://www.mdc.com.my>

⁵⁷ <http://www.asiapages.com.sg>, Newsbytes.com, June 4, 1999.

⁵⁸ Multimedia Development Corporation site, <http://www.mdc.com.my>

⁵⁹ International Herald Tribune, April 6, 1999, p.11.

(continued....)

Companies established in the HSIP have activities in one of six sectors: integrated circuits, telecommunications, computers and peripherals, biotechnology, precision machinery, optoelectronics. The land remains the property of the government, but is loaned to the tenant companies. At the end of 1997, forty-three of the 245 companies were foreign-owned, (the majority of these American) and aggregate investment was at \$US13.1 billion. Twenty-five HSIP companies are listed on the Taiwan Stock Exchange.⁶⁰

The National Science Council oversees the operations of the park, which is divided into residential, recreational and industrial zones. A wastewater treatment plant, a post office, a telecommunications station and an Office of Taipei Customs are maintained on the site by an administrative agency. Services such as medical, security and investment services are also offered. Banks, restaurants and bookshops are established in the residential zone, while the industrial zone contains factories and laboratories. At the end of 1997, about 68,500 people worked in the HSIP. A third expansion project is underway in Hsinchu Park and a second science-based Industrial Park, Tainan, has recently been established.⁶¹

⁶⁰ <http://www.sipa.gov.tw>

⁶¹ <http://www.gsr.or.jp>