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OECD WORKSHOPS ON THE ECONOMICS OF THE INFORMATION SOCIETY

WORKSHOP No. 5

SEOUL, KOREA, 22-23 October 1996

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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PREAMBLE

The OECD Workshops on the Economics of the Information Society are aimed at developing economic data, research and analysis in the area of "Global Information Infrastructure -- Global Information Society". They are conducted under the aegis and direction of the ICCP Committee as the precursor for policy discussions within the Committee. The Workshops concentrate on providing leading edge research on the economics of the coming "information society", have a quantitative and empirical stress and identify and refine the analytical and statistical tools for dealing with these issues.

The fifth in the series of Workshops was held at **Seoul, 22-23 October 1996** on the theme of "Government Responses to the Emerging Information Society ". The Workshop was jointly organised by the OECD and the Korea Information Society Development Institute (KISDI), and was hosted by KISDI.

The Seoul workshop was devoted to a discussion of the role of government in facing the changes led by information and communications technology (ICT) development and diffusion. Like other organisations in society, governments need to adjust to the new technologies. Government services should be more efficiently and effectively delivered through ICT. Also the performance of the government itself may be improved by utilising ICT. On the other hand responding to the various emerging activities in cyberspace, governments are expected to take a role in establishing basic principles and rules relating to these activities. Finding a balance between the protection of social values and societal safeguards in cyberspace, such as privacy protection and law enforcement, is an example. And another example is responding to the jurisdictional questions arising from commercial activities in cyberspace.

On the occasion of this Workshop, leading experts from major economic research centres, academic bodies, consultancies, industry groups and think tanks, as well as government officials, presented their views and ideas for discussion. The Workshop provided an opportunity for interaction and debate on the economic impacts and policy implications of the human resource related issues of the information society. A stimulus for further research and highlighted priorities for future investigation were provided. This report outlines the highlights of the contributions and discussions at the Workshop, and provides a list of participants. The OECD gratefully acknowledges the support and enthusiasm of all involved.

POLICY IMPLICATIONS

The Seoul Workshop dealt with *Government's Responses to the Emerging Information Society* from two viewpoints: realising "change" in government using information and communications technologies; and the governance issues facing government arising from the universal emergence of activities in cyberspace. There follows a list of the key points made by participants[1] during the sessions which have implications for government policy and action.

1. Changing government

Realising "change" in government using information and communications technologies:

- Long-term planning and commitment, with a systematic approach for ICT usage is necessary.
- Adequate internationally consistent performance measures should be developed. Government needs to be able to measure the benefits or improvements obtained through ICT investment, as well as measures of the input or utilisation of ICT.
- Training and education play an important role in the effective adoption of ICT in government.
- Political will and government commitment are necessary for effective use of new technologies to gather and disseminate information. Currently ICT use is mainly confined to service delivery and not for improvement of the information policy process or quality of democracy.
- Technology should be used to increase the dialogue between stakeholders and to restructure the administration.
- User involvement is the most important element for the successful implementation of electronic service delivery systems in government.
- Internet could be more used as a means of service delivery as well as a platform for building, maintaining and updating of information databases.
- For effective dissemination of public information, a mix of delivery methods can overcome technological barriers.
- Outsourcing of information products can be considered a means to overcome organisational barriers to change.

- Paper-based transactions, especially between government and the private enterprise and household sectors, should be systematically reduced.

- Legal institutions and practices should be reviewed in order to accept electronic documents: for example their verification and authentication.

International co-ordination :

- Governments should actively use ICT to promote and develop internationally co-ordinated work.

Procurement

- Government procurement policies and technology diffusion policies are different. Reform of procurement processes is necessary.

Choosing technology

- Government should exercise great care when choosing technology. Bureaucracy might hinder the most efficient and effective choice and implementation of technology.

2. Governance issues arising from activities in cyberspace

Access to the GIS

Government should play a "catalytic role" in making access to the GIS a reality. Access to the GIS means:

- physical and technical access to products and services,

- affordable access to the information and communications network, and

- acquisition of the requisite skills, aptitude and education.

Statistics

- Internationally consistent rigorous frameworks for statistical indicators and data collection are essential for monitoring and evaluating the development of the information society.

Cryptography

- International policy co-ordination in cryptography is an essential component of the GII-GIS in which information is expected to flow more freely between jurisdictions.

The cyber-economy

- Governments must devise policies which can facilitate the transition to a "cyber-economy" and which can confront issues including protection of IPR, security of financial and commercial transactions, use of cryptography, and taxation.

- Government intervention in the evolving cyber-economy should be extremely selective. How rule making should be shared between public and private organisations is an important issue. Ensuring the legal framework of security and privacy may remain the province of government, but the creation of the institutional mechanisms for electronic commerce such as payment systems should be led by the private sector.

- Rule making concerning the cyber-economy needs both horizontal and vertical co-ordination on a global scale.

Electronic cash and policy issues

- To avoid instability in financial markets and monetary systems, the qualifications and obligations of issuers of electronic cash should be established, and the rights and risks of the payer, recipient and intermediaries should be defined.

- To mitigate the potential effects of electronic cash on monetary policies, reserve requirements should be imposed on entities issuing electronic cash, and value of electronic cash should be included in the narrow definition of the money supply aggregate, and the time lag in the adjustment of the money stock reduced.

Issuing electronic money

- The question of regulation of issuers of electronic money should be addressed. Current uncertainty regarding legal rights of an emerging unregulated parallel “non-bank sector” to issue electronic money should be dispelled.

- Innovative legal and institutional measures are necessary to enable the widespread acceptance of electronic money.

Taxation and money laundering

- Despite the fledgling use of electronic currency, the threat of money laundering and tax evasion is real and governments are devising means to tackle these problems.

- Concerns exist over tax evasion using anonymous electronic payments, the difficulty of collecting consumption taxes if such a system is used, and possibility for its use as a channel for money laundering. Also control of the money supply, exchange control and exchange rate may be influenced by electronic money and electronic payment systems.

Consumer protection in the cyber-economy

- Consumers are concerned about the lack of effective complaints and redress systems, data protection, and fear increased censorship in the emerging information society. Measures to empower consumers to make their own choices, and reactive protection to achieve fair treatment are necessary.

Liability of system operators and cyber-law

- System operators (those who operate on-line services, bulletin board systems, computer conferencing systems, or World Wide Web servers) are facing uncertainty about the extent of their liability in case of involvement in cases of defamation, copyright infringement, and privacy violation.

- No international consensus yet exists concerning the risk of system operators' liability as a "publisher" of defamatory and harmful material among files available on their system.

- System operators who maintain large collections of files are potentially at risk of copyright infringement. It is not feasible to verify the legitimacy of every file uploaded to their system. Their susceptibility to these charges is case dependent.

- Maintaining the privacy of users, particularly privacy of electronic mail, is also difficult for system operators. There still is a large degree of ambiguity over their liability in this respect (e.g. the statutory interpretation of the Electronic Communications Privacy Act of 1986 by the U.S. Congress).

- Though these are still evolving, the general principles of the U.S. liability model might be applicable to the rest of the world.

Liability for copyright infringement by on-line service providers

- The situation regarding the imposition of liability on on-line service providers for carrying unauthorised copyrighted material should be clarified. Also, it is proposed that the costs of proving non-infringement should be borne by the on-line service providers. The legal implementation of such proposals should be addressed carefully, otherwise it might result in punishing the wrong parties.

International co-operation with regard to the Internet

- The French Government presented a proposal for a multi-tiered approach to developing international co-operation with regard to the Internet and other open global information networks, including definition of the liabilities and responsibilities of the various actors, a voluntary "code of conduct" and in the last resort, international judicial and law-enforcement co-operation. It was proposed that governments, telecom operators, access providers, content publishers and host service providers be involved as signatories to the "code".

PROGRAMME

OECD WORKSHOPS ON THE ECONOMICS OF THE INFORMATION SOCIETY

Workshop No. 5, Seoul, Korea
Tuesday 22 October and Wednesday 23 October, 1996

Organising Institutions:

Korea Information Society Development Institute (KISDI)
Organisation for Economic Co-operation and Development (OECD)

Venue:

Hotel Shilla, Seoul, Korea

Background

The OECD Workshops on the Economics of the Information Society are aimed at developing economic data, research and analysis under the aegis and direction of the ICCP Committee as the precursor for policy discussions within the Committee.

The workshops concentrate on providing leading edge research on the economics of the coming "information society", have a quantitative and empirical stress and identify and refine the analytical and statistical tools for dealing with these issues.

The fifth in the series of Workshops, the Seoul Workshop will contribute to the OECD activities on "Global Information Infrastructure -- Global Information Society". The Workshop is jointly organised by the OECD and the Korea Information Society Development Institute (KISDI), and will be hosted by KISDI.

Objective of the Seoul Workshop

The overall topic for the workshop is the "Government Responses to the Emerging Information Society". As has been discussed in the previous workshops in this series, a wide range of economic and social activities are confronted by the new issues raised by the development of information and communication technologies and their rapid diffusion, and as a result are going through a period of significant change. Among these issues, treated in earlier workshops in the series, are adapting to a network environment, the ways of conducting electronic transactions, the organisation of firms and the role of human resources. However, the public sector itself is also subject to the driving forces of the development and diffusion of information and communications technologies. Governments provide programmes and services as well as

develop and implement policies. They play a key role in guiding the transformation into the Global Information Society and must now transform themselves in order to face the new challenges and to seize the opportunities offered.

First, governments should apply the new information and communication technologies to improve their performance and efficiency in the provision of public services. Tax filing, education, and health care services have already been identified as examples of areas in the public service domain which are ripe for the possible application of new technologies. Are there other such areas? What would be the resulting benefits arising from those initiatives? Also, what are the obstacles, if any, impeding the deployment of new technologies into government organisation and operations?

Second, given governments' role and purpose in the Global Information Society, are changes in information and communication technologies spurring governments to restructure themselves? By employing the new technologies governments can greatly enhance their capability to collect, process and disseminate vast amounts of data very rapidly and, in turn, formulate policies and interact with the public very efficiently. "Open and transparent government" could thus be achieved more effectively. What government bodies and structures might be required by the new technologies, and what difficulties or problems might arise?

Third, governments now have to face questions arising from their role as protectors of certain social values. On the one hand, in order to maintain social order, governments need to enforce the law. Equally, there exists another set of social values -- the protection of privacy, human rights and freedom of expression. How should government reconcile its commitment to law enforcement in the age of new technologies and infrastructures, while the same technologies can permit complete anonymity and privacy? Also, how should governments, individually and collectively, address the issue of control or censorship of content in a globally networked society?

Fourth, another challenge faced by governments is posed by the economic activities already taking place in cyberspace. Over the Internet, for example, global trading activities are becoming common, with vendors and buyers connected by the network. Consumers can place buying orders for goods and services with sellers on the other side of the globe, instantaneously. The economic potential of such commercial activities is clear, but they also raise an unprecedented set of issues. Examples are the taxation and/or customs duties for network transactions, resolving conflicts over contracts made over the network, general rules for consumer protection, and the liability of vendors and service providers. As transactions may easily be conducted across borders, the issues, notably those of jurisdiction and liability, are particularly complex, but governments cannot indefinitely delay responding to those issues.

Thus, as the fifth Workshop after those in Toronto, Istanbul, Tokyo and Helsinki, the Seoul Workshop will turn its attention to government. The first of the two days of the Workshop is devoted to examination of the how government should employ the new technologies, and the second to how government should address the issues raised by the new technologies.

Overall structure of the Workshop

Session 1: How should government employ the new information and communications technologies and tools for the provision of public services?

Session 2: How should government best restructure itself to benefit from the opportunities offered by the new information and communications technologies?

Session 3: How can governments address the social value issues posed by the development and diffusion of the new information and communications technologies? What is the future of law enforcement and control or censorship of content in a globally networked society?

Session 4: How should government address the issues raised by global commercial activities in cyberspace?

Session 5: What conclusions can be drawn from the workshop? What are the economic and social policy implications for governments and for international organisations?

Proceedings of each Session

Each session will start with presentations by speakers (each of approx. 15-20 minutes) followed by comments and questions from discussants (each of approx. 10 minutes) after which the session will be open to questions from the floor.

TUESDAY, 22 OCTOBER 1996

9:00 Registration

9:30 Opening Address

- Dr. Chon-Pyo Lee, President of KISDI

Welcome Address

- H.E. Kye-Cheol Lee, the Vice Minister of Information and Communication, Korea
- Message from Donald Johnston, Secretary General of OECD

9:45 Introduction

- John Dryden, OECD/ICCP
- Inuk Chung, KISDI, Korea

10:15-13:15 Session 1: Using new technologies and tools to improve the provision of government services

Information and communications technologies have great potential to enhance the quality government services. Collection, processing, and dissemination of data and information are crucial functions of the government to render its services. Applying technologies such as Internet, on-line services, or other networking and information processing technologies for these functions can alter significanlty the landscape of government services. In the session, various attempts at utilising new technologies for government service provision were introduced.

Discussion included:

-- What areas of government services benefit from the use of new information and communication technologies? Education, health care, tax Filing, one-stop shopping, etc. by various levels of government.

-- How do governments employ electronic transactions? Are they utilised in procurement procedures? What consequences can be expected?

-- What is the status of the various announced government initiatives for applying new technologies to provision of government services? Reports from national governments, G-7 "pilot projects".

-- What are the benefits and obstacles to applying the new technologies and introducing new ways of providing services? How is the public responding? What are the technological issues? Or the legal or regulatory issues?

(Chairman)

- John Dryden, OECD/ICCP

(Speakers)

- Sandra Prerost, Global Link Comm., Australia "Overview of Government initiatives -- National and Multinational"
- Mike Harrop, Treasury Board of Canada, "The G-7 Government On-Line (GOL) initiative"
- Hiroshi Nakagawa, Management and Co-ordination Agency, Japan "Recent Development in Advanced Use of Information and Telecommunications Technology by the Government of Japan"
- Michael Chinworth, The Analytic Sciences Corp. US, "Applications of Information Technologies (IT) in the US Federal Government: Issues and Trends"
- Georges Ferné, DSTI/ICCP, OECD, "Changes in the Procurement Process and their Impacts"

(Discussants)

- Ilmari Pietarinen, Ministry of Finance, Finland
- Sohn Sang-Young, KISDI, Korea
- Stephen Ward, EDS, US

(Session Rapporteur)

- Hae-Rin Eum, KISDI, Korea
- Hae-Won Lee, KISDI, Korea

13:15-14:30 Lunch

14:30-17:30 Session 2: Restructuring government using new information infrastructure and services

Applying new technologies would not only improve government services, but could also stimulate structural change of government itself, as has been seen in the private sector. Given the dramatic advances in information and communication technologies and their penetration of most sectors of society, governmental organisation and structure might need to adjust in order to perform its functions of service provision and policy formulation more efficiently and effectively.

Discussion included:

-- Can ICTs improve the efficiency and effectiveness of government services? Can the improvement of performance of the public sector be measured? Does the impact of ICT trigger structural change of government, and to what extent?

-- What would be the characteristics of government institutions and structures in the "information society"? Is "downsizing government" achievable? Is "electronic democracy" a realistic concept? How would existing government bodies change as society changes?

-- What are the trends for government's interface with the public? By employing ICT, is the government becoming more "open" and "transparent"? Will public access to government data be easier?

(Chairman)

- Cae-One Kim, Seoul National University, Korea

(Speakers)

- Fred Woods, National Institute of Health, US, "Making Government Work: Electronic Delivery of Services via the Internet"
- Harry Bouwman, University of Utrecht, the Netherlands, "A Wealth of Information: Some Implications of Information and Communication Technologies for Government Institution"
- Jostein Haoy, Ministry of Government Administration, Norway, "ICT usage and the restructuring of the government"
- Roberto Gualtieri, Consultant, Canada, "Impact of the Emerging Society on the Management of Information by Governments in the Policy Development Process and on the Quality of Democracy"
- Lawrence Loh, National University of Singapore, Singapore, "Virtualizing Government Structure and Organisations: Insight and foresights in the New Electronic Era"

(Discussants)

- Dora Mozes, Industry Canada, Canada
- Nagaaki Ohyama, Tokyo Institute of Technology, Japan

(Session Rapporteur)

- Hae-Rin Eum, KISDI, Korea
- Hae-Won Lee, KISDI, Korea

19:00 **Dinner** Hosted by H.E. Bong-Kyun, KANG, The Minister of Information and Communication, Korea, Sponsored by Korea Telecom

WEDNESDAY, 23 OCTOBER 1996

9:00-12:00 Session 3: Social values and safeguards in cyberspace: Law enforcement and privacy; censorship and freedom

The rapid development of ICT has stimulated discussions on the basic principles of the role of government. Some of the vast amounts of data disseminated and exchanged over the network every second might be related to criminal activities, or involve content or data which could be viewed as inappropriate for transmittal over publicly accessible information networks. What should be the response of governments? How can governments address these issues without compromising the basic freedoms, principles or values of society? What action by government is needed regarding law enforcement in cyberspace, including censorship for information content?

Discussion included:

-- Law enforcement vs. privacy protection: What risks arise from electronic transactions or data exchange? What legal protection exists? How can law enforcement be implemented? Will privacy be jeopardised or protected? What is the appropriate balance between law enforcement and privacy protection?

-- Censorship vs. freedom of expression: Who should be responsible for the contents of the publicly available information and data? To what extent is government regulation, control or censorship over the contents of electronic information appropriate or necessary? How could or should such control be implemented?

(Chairman)

- Alain Brun, European Commission, DG XV

(Speakers)

- Hiroko Kamata, OECD/ICCP, "OECD Work on Cryptography Policy Guidelines"
- Pierre Hurdy, Ministry of French Posts and Telecomunication, France "The Need for International Co-operation on Internet"
- Chan-Mo Chung, KISDI, Korea, "The scope of Copyright Liability of On-Line Service Providers: Korean and International Developments"
- Susan Baldwin, Canadian Heritage, "Citizen and Consumer Values: Government in the Global Information Society

(Discussants)

- Young-Cheol Jeong, Yoon & Partners, Korea
- Peter Kennedy, George, Donaldson & Ford, L.L.P., US
- Il-Soon Shin, KISDI, Korea

(Session Rapporteur)

- Hae-Rin Eum, KISDI, Korea
- Hae-Won Lee, KISDI, Korea

12:00-13:30 Lunch

13:30-15:30 Session 4: Commercial activities in cyberspace -- Electronic commerce and government

Cyberspace is already a market-place where economic activities and commercial transactions involving both public and private sectors are planned and executed. Government agencies employ CALS (Computer-aided Acquisition and Logistic Support) for procurement, and EDI (Electronic Data Interchange) is becoming standard practice among some industries and corporations. The rapid development of Internet and the spread of on-line services is creating a new globally accessible market place where both business entities and the consumers can participate. The new "frontier" for commercial activities has brought with it a new set of issues and a re-examination of the role of government in the development of electronic commerce.

Discussions included:

-- Which new issues arise with the increase in commercial activities and settlements in cyberspace ? What are the issues for taxation authorities?

-- Is a new legal framework for electronic commerce necessary or feasible? What are the consequences for contracts, liability, jurisdiction and consumer protection and redress? What dispute settlement mechanisms are needed?

-- How will the "rules" be developed and who will establish them? Voluntary action, industry agreements, national or international legislation? Guidelines or codes of practice by international organisations?

(Chairman)

- Hal Varian, UC Berkeley, US

(Speakers)

- Chris Reed, Information Technology Law Unit, University of London, UK, "Digital Cash and Internet Payment System"
- Yuji Masuda, University of Tokyo, Japan, "Cyber-economy: The New Reality of Socio-economics System and Policy Issues"
- Claire Milne, Consultant, UK, “The Consumer in the Information Society”
- Yong-Do Shin, KISDI, Korea, “Electronic Cash: Policy and Issues”
- Edward Cavazos, Andrews & Kurth, L.L.P. US, "System Operator Liability"

(Discussants)

- Michael D’Ascenzo, Australian Tax Office, Australia
- Kang Hong-Ryul, KISDI, Korea
- Esa Norhomaa, Aamulehti, Finland
- Eric Brousseau, University of Nancy II, France

(Session Rapporteur)

- Hae-Rin Eum, KISDI, Korea
- Hae-Won Lee, KISDI, Korea

16:00-17:30 Session 5: Panel discussion

The session takes stock of the preceding four sessions and highlights the conclusions to be drawn from the workshop.

The Rapporteur summarises the key issues and conclusions of previous sessions. Discussion led by the panel composed of the Chairmen of sessions 1-4)

The discussion aims to conclude with:

-- What are the economic and social policy implications for governments and for international organisations?

-- What are the prioritised issues for governments which arise from the existing differences in legal and institutional frameworks?

-- In which areas is international agreement essential or desirable? In which areas do national differences pose no problems, or should be encouraged?

-- Which are the priority areas for further research, data collection and analysis?

-- Is there any role for international organisations? Are existing international institutions adequate?

(Chairman)

- Ambassador Pasi Rutanen, Head of the Permanent Delegation of Finland to the OECD

(Panel)

- Risaburo Nezu, Director, DSTI/OECD
- John Dryden OECD/ICCP
- Chang-Bun Yoon, KISDI, Korea
- Alain Brun, European Commission, DG IX
- Hal Varian, UC-Berkeley, US

(Workshop Rapporteur)

- Puay Tang, SPRU, UK

18:00 Farewell Cocktail

RAPPORTEUR'S SUMMARY [2]

The main aim of the Seoul Workshop was to examine the main issues confronting governments in a rapidly informatising environment. The increasing use of information and communication technologies for a wide array of activities by government, industry and the citizen is a defining characteristic of this environment. This has prompted OECD governments to re-examine and review existing policies with the aim of introducing new measures to meet the challenges of the information society.

The workshop was organised into four sessions and a concluding panel discussion. Each session explored a different aspect of government responses: the adoption of information and communication technologies by government for improved public services; the restructuring of government using new technologies and services; law enforcement in cyberspace and the safeguarding of social values; and rule setting for cyberspace.

The papers and discussions on the first day focused entirely on the use of information and communication technologies for improved public service delivery, and government organisation and administration. On the second day, attention was drawn to the importance of legislative and regulatory responses for the management of cyberspace, in areas such as copyright and the trading of information, electronic commerce, privacy and consumer protection.

Several common themes emerged. They were:

- improving electronic delivery of public services;
- government reengineering for improved performance;
- providing leadership in the diffusion of information technology applications;
- enhancing the democratic process;
- the community and law enforcement in cyberspace;
- rule setting for the cyber-economy.

The main policy implications that arose from the discussions of these common themes were:

- Governments must be clear about the goals for their adoption of information technology. These goals should include not only defining *what* is being delivered but *why* it is being delivered to the public, to maximise return on taxpayer investment through soundly executed information systems and enhanced public sector efficiency, and to provide more and better service to citizens at lower transaction costs.

- For the effective delivery of electronic government services, governments must endeavour to establish an environment aimed at fostering the development of an infrastructure to deliver and receive services; and to devise policies and regulations to provide affordable access to networks to receive these services.

- Governments have a vital role in providing leadership for policies that sustain development and utilisation of information technology, such as creating conditions and facilitating the growth of dynamic competitive markets for the provision of electronic products and services, and assisting with the development of 'digital literacy skills.'

- Governments need to acknowledge that they have a responsibility to provide useful and relevant information to the public. Examples could include new legislative measures and regulations, programmes and initiatives to help business and export opportunities, and public interest materials such as those on environmental and health information.

- The public has to know that it has a right to useful and relevant public information to receive the benefits of the information society.

- A necessary aspect of a coherent and clear strategy for the successful implementation of electronic services delivery is user involvement. User involvement includes the engagement and the soliciting of feedback on new services and products from various communities, such as employees, citizens, customers and recipients of services, and the promotion of private sector partnership in the development and testing of new services and products.

- Policy makers should expeditiously address the issues of security and cryptography, privacy and confidentiality of communication and data, taxation, the issuance of digital cash vis-à-vis banking laws, protection of intellectual property, and liability of on-line service providers in matters of copyright infringement, in order that electronic commerce may flourish.

- Appropriate policy measures and guidelines should be developed for the issuance of electronic money, taxation, consumer protection, and liability sharing with respect to copyright infringement.

- Governments should consider the incorporation of technology into control and enforcement mechanisms, such as those to be used for electronic copyright management systems, for ensuring compliance with copyright law, for tracking the flow of electronic money, and for protecting privacy and confidentiality of communication and data.

- Rule setting (such as for taxation, consumer protection, and issuance of electronic money, etc.) for the cyber-economy should entail the co-operation of the private sector, interest groups and non-profit organisations.

- International collaboration for the harmonization of rules and guidelines for taxation and accounting, privacy and confidentiality of data, and intellectual property rights and protection will substantially help mitigate the perceived risks and fears of electronic commercial transactions.

1. Improving electronic delivery of public services

There is broad agreement that electronic delivery of services will enhance the efficiency and effectiveness of public administration. It is also clear that effectual government restructuring is a concomitant reason for successful electronic delivery of public services. Furthermore, it is widely acknowledged that successful delivery requires that a delivery infrastructure is in place, that frameworks for commercial, legal and statutory concerns are established, and that easy, affordable and fair access to the means of delivery are ensured.

Successful implementation of electronic service delivery

The availability of a delivery infrastructure was highlighted as a *sina qua condition* for any form of electronic delivery. The Internet and computer networks were singled out as the most viable and effective means of electronic delivery of public services (Wood, Loh, Bouwman). Although security and reliability of the Internet were issues of concern, it was argued that the Internet was a 'natural' given its wide usage and access.

The selection of a given delivery mechanism is much dependent on the kind of service being delivered. Public information could use the Internet efficiently, as MEDLINE of the US National Library of Medicine has shown. The Internet also is being used as a one-stop electronic link to government information and services, such as information for those interested in export and import opportunities, and joint venturing.

The delivery of services which require a higher degree of security, reliability, interoperability and interactivity could be served by a combination of the Internet and private networks. Telemedicine and distance learning are prime examples of such requirements and several OECD countries have begun to implement these services. All G-7 projects are focusing on the use of the Internet and a combination of other secure forms of network delivery (Prerost, Harrop).

Government supported electronic networks could also be an effective medium of delivery of public services, such as those illustrated by OSCARS (for change of residential address) and LAWNET, operated by the Singapore Government. Essentially, the choice of networks is determined by policy goals and organisational capabilities (Loh, Nakagawa).

Requirements for successful implementation of electronic service delivery

Effective delivery of public services is dependent on several key elements, for instance, encouraging grassroots involvement which aims at engaging the participation of employees, customers, end-users and recipients of services for the development of products and delivery mechanisms for services (Wood). Participation of government employees for the development of new electronic service mechanisms was also highlighted as an essential factor both for successful restructuring of government and electronic delivery (Haoy). Attention was also placed on the importance of fostering community infrastructure development which involves assisting community organisations and local agencies with training, education and implementation (Wood).

A useful suggestion was advanced which entailed the idea of 'co-sourcing' in which the private sector would work closely with the client (the government in this case) by helping the customer set measurable goals, and develop and implement strategies to achieve them (Ward). The question is whether

such a strategy can work with government since the achievement of some government goals are not quantifiable, particularly since there are doubts over the workability of numerical performance indicators (Mozes).

These requirements for successful delivery entail, at the outset, systematic and coherent planning of the service, accompanied by an explicit objective of electronically providing a kind (or kinds) of service(s). It was also contended that the success of electronic delivery was necessarily a function of state leadership, change in the mindset of government and cultural acceptance of different *modus operandi* effected by the adoption of information technology (Loh, Chinworth).

Implementation problems

As the single largest creator and collector of information and data, government should make access to such information a priority in its strategy for electronic delivery of public services. Accessibility encompasses not only the means to receive the information, but should include the attainability, comprehensiveness, timeliness and usefulness of the information provided (Bouwman). Accessibility to public information becomes all the more important in the light of the impending Information Society and the Information Superhighway because citizens will come to demand more relevant information. This in turn should stimulate responses from the public administration which inevitably impacts upon its reorganisation.

Considerable attention was drawn to the necessity of devising 'road maps' or 'locators' for public information. In the light of the currently cumbersome process for information search and retrieval, it was widely suggested that government, in concert with the private sector, could begin resolutely to develop better directories, search engines and more structured WEB pages (Internet) to improve the process for finding and getting information.

Commitment to sustained funding for the co-ordinated implementation of electronic delivery systems is integral to a successful strategy (Harrop, Chinworth). It was pointed out that the absence of political will to see through the development and implementation of national and international delivery systems will stymie their widespread adoption.

It was also emphasized that a fundamental aspect of a successful strategy for effective service delivery lay in building the confidence of the user (Prerost, Kamata). Confidence includes the understanding by citizens of the benefits of electronic delivery, the assurance that information or service is promptly received, and that privacy and confidentiality of data provided by the user are respected. In the absence of user confidence, scepticism over the advantages of electronic delivery will likely mount (Jeong). Lack of user involvement and participation will jeopardise electronic delivery even by the most elegant and effective means.

Other issues to be considered

The diversity of the public client base and its increasing awareness of its need to be informed of the likely effects of government actions generate a need for government to be increasingly informative and to improve public access to information on government actions and decisions (Baldwin, Gualtieri).

It was suggested that 'score cards' for benchmarking government performance could be devised, involving a hybrid of quantitative and qualitative 'indicators' (Pietarinen, Haoy). These would be contribute toward the continuing performance of public service delivery.

Pricing policies for receipt of services is a significant issue and this, in large part, determines their take-up. Government, as it is being done in the US, could consider recovering the full cost associated with the dissemination of the information, minus the cost of collection. If, however, dissemination was an obligation on the part of a government department or agency, there would be no charge to the user. Government could also base prices on a lower cost for disadvantaged groups, or apply the direct benefit principle, as in the Netherlands, whereby users are not charged. Cross-subsidisation is also being considered by some governments (Bouwman). It was suggested that pricing discrimination, if implemented, should be based on product differentiation and the delivery mechanism (Bouwman).

The focus on computer networks as the primary medium of transmission caused some concern because there appeared to be a 'dangerous' assumption that it was the only effective means of delivery (Mozes, Baldwin, Bouwman). Policy makers were reminded to consider other forms of electronic delivery such as fax-based services and television which could be used to disseminate public information. These forms would, in most cases, reach a greater number of users than would computer networks, specially in light of the fact that television penetration and teledensity were higher than computer penetration in all the OECD countries.

2. Government restructuring for improved performance

Governments of the OECD countries have been faced with budgetary and fiscal pressures since the 1980s. This has induced them to review their internal administrations with the twin aims of reducing the cost and enhancing the performance of their administrations. Information technology has been widely touted as a means of achieving long-term cost reduction and for improving efficiency. It was clear from the discussion that the adoption of information technology by governments for improved internal administration has resulted in varying degrees of success and effectiveness.

Gains from restructuring

By matching technology with policy goals, customer needs and organisational capabilities, government could enhance its capacity to provide more and better service to citizens at lower transaction costs (Loh, Ohyama). The significant growth of Internet access to public information was highlighted. It was found that by adopting this mode of delivery, public information was more widely accessible to users than it would have been through dedicated proprietary networks.

Attention also was drawn to the benefits of a systematic approach toward restructuring. It was shown that co-ordinated implementation resulted in the awareness by all government agencies of the 'mission' and accelerated results in government reorganisation (Nakagawa, Loh).

Better management and collection of information assist governments in the evaluation of policy actions. The availability of more analytical reports will also contribute towards more robust debates over political issues, with the aim of formulating better informed decisions (Haoy).

Implementation problems

An implicit but overarching argument framing the belief that electronic delivery of public services would fundamentally improve the quality of government performance was that government was clear about its motivation to restructure and that it had identified the major problems in the restructuring exercise (Ohyama). Doubts about the consistency which governments display in their attempts to address these two questions are an aspect of one of the many problems facing the successful delivery of public services (Bouwman).

A major problem identified was the lack of acknowledgement of the persistent effects of institutional and cultural constraints which could be incompatible with the adoption of new technologies and modes of working (Loh, Gualtieri, Harrop, Baldwin and Chinworth). In neglecting the importance of experience and legacies, governments risked having their policy objectives go awry, at the worst, or under realised, at best. This concern was also expressed in terms of the lack of experience of those charged with the task of formulating strategies, resulting in uncoordinated implementation (Chinworth).

A further problem was identified with government restructuring attempts. The large portfolio of government needs and constraints, with its diverse customer base, several jurisdictional areas, varying levels of technical requirements, different budgetary and financial constraints and often dissimilar organisational structures, contributed significantly to the complexity of reorganisation. Interdepartmental co-ordination and collaboration was suggested as a first step toward the restructuring exercise.

Solutions to implementation problems

A prevailing view in government attempts to restructure is to harness the expertise of the private sector. The private sector can, with its wide repertoire of experience in business reorganisation -- business process re-engineering -- advise government in the various options it can adopt in its restructuring and the different technical requirements that will best serve government objectives (Ferné).

The importance of instituting 'change management systems' to monitor the effects of changes in policies, to develop benchmarking indicators and to stimulate new ways of sharing new applications throughout the public administration was also emphasized. These systems entail the involvement of large user bases in the design and implementation of delivery systems; and the development of confidence-building measures to assure the public that there would be more transparency in government processes (Haoy). The overarching objective is to build a client-centred approach toward delivery.

It was strongly suggested that user participation was a strategic element in both infrastructure development and delivery of electronic services. End-users are important stakeholders in the use of digital information and electronic networks, and ignoring their input could imperil the successful development of the information superhighway, thereby thwarting the benefits that it is purported to deliver to the larger society. Users could be employees of government departments and agencies producing the services, commercial companies offering electronic delivery, customers and recipients of services.

Other issues to be considered

What order of priorities should government set for themselves in their restructuring? There was concern that governments in their desire to reduce cost and downsize their operations, would overlook the primary objectives for improving their performance.

It was observed that governments needed to assess carefully the economic considerations involved in their restructuring exercise (Sonn).

The employment of information technology has manifested changes in administrative processes, such as the increase in the use of electronic mail with a corresponding decline in the use of the telephone. It was not clear, however, if restructuring will really entail a change in the process of government, for instance, in its dealings with the private sector and the citizen which show no significant decline in the volume of paper-based transactions (Pietarinen).

One measurement of the success of electronic public service delivery could be found in the interactivity between the citizen and the government, or 'universality of access' (Gualtieri, Baldwin). Interactivity could involve statutory transactions between government and citizen, receiving information from citizens for input into the policy formulation process and information provision by government. It was noted that in most cases, consultative transactions were not an item that received priority from policy makers (Mozes).

Another worrying concern with accessibility and content was identified in a widespread attitude of policy makers who, while tending to be committed to the dissemination of public information, were more concerned with providing general rather than specific, information (Gualtieri). Insofar as harnessing the new technologies to improve the delivery of services, governments appeared to focus more of their attention on the commercial benefits and contributions of information technology to economic growth.

It is clear that government has a crucial role in developing the Information Society and Information Superhighway. A key and initial step is for government to reorganise itself so that it may efficiently and effectively conduct business electronically with its citizens. To achieve this, governments must have unambiguous goals and purposive strategies, and must be clear about their goals for restructuring and the major problems that restructuring entails (Ohyama).

3. Providing leadership for the diffusion of information technology applications

The wide use of information technology by public administrations to conduct their business domestically can set the pace for its diffusion. The large-scale adoption of these new technologies by governments to conduct their international relations can also stimulate their wider use, the effects of which will be felt within and beyond national boundaries. The size of public administrations imply that governments can significantly affect the diffusion of advanced electronic applications.

Avenues for diffusion

Government restructuring through the use of information technology is a vital means of diffusing new applications. Ensuring that every employee has a personal computer, for instance, and agencies are networked, inevitably results in wide usage. Electronic procurement practices of government, across various departments and agencies, is another means of diffusion as suppliers are often obliged to 'electronically' adapt to or adopt the systems required or suggested by government.

The provision of electronic delivery services, and their widespread accessibility also stimulate the wide take up of these services. Government, as the single largest user of information technology, can wield an exceptionally influential role in 'educating' citizens to the use of new electronic applications.

The development and pre-operational testing of applications intended for use by the public administration could effectively be done through strategic partnering with the private sector or 'co-sourcing,' rather than government going it alone (Wood, Ward). Through these exercises, commercial applications could be developed or refined, and further lead to their wider use.

In addition to government's role in the development of information technology applications, is the focal role of government in the diffusion of these applications (Ferné). Suppliers to government, for instance, will likely have to adopt government-led applications, and through this channel, the usage of such applications is increased.

The increasing conduct of business and communication with government, and between governments, through the electronic medium was also advanced as another means by which government could help increase the usage of digital applications (Harrop). Government sponsored or financed projects, such as those for small and medium-sized businesses and community centres, are an effective channel for diffusion.

The array of government requirements, however, cannot be met by commercially available technical products and solutions. The 'dynamic' nature of government objectives as they respond to global and national developments also suggests that public requirements can exceed the capabilities of existing products. This therefore implies that the public sector could exert enough leverage to ensure that the technologies and applications sold to them allow for flexibility and scope for meeting the objectives of government (Chinworth, Haoy, Prerost, Loh, Ohyama, Bouwman, Nakagawa). For instance, studies on government procurement reforms and publicly funded digital databases have shown a catalytic role in the development of information technology applications (Ferné, Wood).

Government's role as the single largest buyer, user, and collector and generator of information makes it undeniably a central figure in the diffusion of information technology applications. The widespread practice by governments to buy 'commercially off the shelf' technical products as a cost reducing measure is an effective channel for diffusion.

The added aspect of international relations to the diversity of government affairs strengthens further the impact of government on the diffusion of digital applications. The G-7 Government-on-line project, for instance, which aims, *inter alia*, at facilitating the improved exchange of information between governments means that interoperability, international co-ordination and interconnectivity between the various electronic systems become central issues (Harrop). The international obligations and collaboration of governments in the development of the Global Information Society suggest the pivotal role of government in both the diffusion and development of advanced communication technologies.

4. Enhancing the democratic process

The 'democratising' effect of the Internet is a popular hypothesis and belief among policy makers and academics. It is argued that the increased capacity provided by information and communication technologies, for instance, by electronic mail to communicate directly and instantaneously with legislators is putting pressure on traditional forms of state governance. One result of the 'principal-agent electronic' relationship (the principal being the citizen; the agent being the government) is that government has been forced to be more responsive and accountable to the needs of its electorate.

Positive impact

As information technology is increasingly harnessed for public sector activities, expectations from the electorate also increase commensurably. Citizens begin to demand more up-to-date policy information; they become more discerning in their choice and assimilation of information, and desire greater engagement with the decision-making process.

Furthermore, influential advocacy and special interest groups which can be key players in the policy-making process can publicise their causes by electronic dissemination, and possibly increase their participation in the formulation of policies (Loh). These demands inexorably create changes in those who are elected and democratic governments respond by reforming their structures and processes. With responsiveness comes increased transparency and openness (Prerost, Haoy, Bouwman).

Attention was also drawn to the purpose of electronic dissemination of public information. Is it for public administration purposes? Or is it to enhance the democratic process by providing access to useful, timely, relevant and specific information (Bouwman)? It was argued that electronically available public information could be used as a foundation for dialogue between government and citizen, and for revitalising political debates. This should be a priority issue with governments in their efforts to enhance the democratic process (Haoy).

The impact of information technology on the democratic process is a robustly debated topic. It is worth mentioning that a common criterion for measuring its effects is unlikely to emerge because of the varying practices of democracy. Also, it is impractical to impose a 'standard of democratic behaviour' on all countries. Instead, the workshop discussions posited a fundamental question in assessing the possible influence of information technology on the democratic process: is there a universal presumption of the public's right to the access of timely, relevant and useful information that helps it to make reasoned decisions, to be informed of the actions of its government, and to be encouraged to be involved in the policy-making process?

Dubious impact

It was noted that while the increasing electronic dissemination of information did imply that information technology does play a 'democratising' role, it was worth remembering that these same technologies could be used to control the electorate, and thus wreak an adverse effect on democracy. Therefore, how the electorate and elected respond to the use of information technology depends on the country (Wood, Gualtieri).

Much current thinking accepts the potential of information technology to increase the accountability, transparency, openness and the credibility of government, to enhance and encourage the freedom of association, and to 'level the playing field' between the advantaged and disadvantaged. Yet there is a perceived fear that governments and policy makers, in choosing to pay more attention to the economic benefits of information and the 'prestige' that comes with the adoption of these technologies do not sufficiently focus on improving the democratic process in the redesign of their information policies (Gualtieri).

Furthermore, it is risky to assume that information technology will stimulate public interest in getting involved with the policy-making process. Caution also was directed to the possibility that politicians may be more interested in 'getting their message across' than they are in receiving feedback from the electorate. If this is a widespread practice by the public administration, it will not be surprising for the public to see its role in the policy-making process as being less than marginal. The Internet, therefore, does not mean 'having our voices heard.' In this sense, the impact of information technology on democracy will be negligible. Thus analysts should distinguish between the hype and reality, and policy makers could make a check list of their 'democratic intents' (Gualtieri, Mozes, Baldwin).

5. The community and law enforcement in cyberspace

Cyberspace has rigorously challenged some existing regulations and laws. The fast and easy transmission of voluminous amounts of information that are not subject to locational, spatial or time constraints have also raised social fears. Law enforcement is also deemed to be more difficult in cyberspace.

Consumer protection

Several aspects of the need for enhanced consumer protection in the information age were treated, the most significant being in terms of improved redress systems and clarification of 'electronic' contracts (Milne). Contrary to the growing anxiety of policy makers over the perceived proliferation of pornographic and offensive materials, consumers, according to a Europe-wide survey of consumers, were reported to be less concerned with these types of material than they were over the lack of consumer institutions to which they could take their complaints, for example, fraud and misrepresentation, and have them effectively addressed.

Attention was also drawn to the need to protect the rights and interests of minority, rural and disadvantaged groups. In order to help these citizens to exploit new digitally mediated opportunities, it was suggested that governments assist with the development of 'digital literacy skills' so that they would not be marginalised (Baldwin).

Privacy and confidentiality

It was particularly pointed out that consumers are beginning to be aware of the potential problems with electronic commercial transactions with respect to loss of privacy and confidentiality of data. Their confidence in knowing that the information about customers and users of electronic services is not abused is an essential factor in the uptake of these services.

The international approach that was widely recommended to balance the competing interests between national security, law enforcement, privacy and security of information, was also suggested as the most plausible way of dealing with consumer protection (Hudry, Masuda).

Information security and law enforcement

The importance of cryptography in serving the twin objectives of information security and privacy, both in social and law enforcement terms, was highlighted as a particularly complicated issue (Kamata, Masuda). While political leaders unequivocally maintain that the sanctity of confidentiality and security of electronic information is to be preserved in the digital age, this objective is confounded by the equally important objectives of national security and law enforcement.

The crux of this difficulty lies in the need for law enforcement and security agencies to monitor electronic communication or stored data which will be near impossible or immensely difficult with encrypted information. Unless these statutory bodies are given some means of unscrambling the information, the capability for law enforcement will diminish.

Proposals for the management of these issues

National regimes for the export of cryptographic techniques differ from one another. In many instances, the export of this technology is prohibited as cryptography is regarded as munitions. In other cases, the export and domestic use of encryption technologies are stringently controlled. Co-operation among national agencies for law enforcement was singled out as a necessary preliminary step toward the formulation of new regulations and laws for effective policing of cyberspace (Hudry).

While recent attempts by the governments of the OECD countries to amend and review their policies on the use of cryptography were acknowledged as a positive move, the differences in national policies necessitate some form of international harmonization if encryption is to be used uniformly across

borders. The need for international co-ordination on the use of encryption use was identified as an urgent matter. Such co-ordination could take the form of international guidelines, such as those under development in the OECD, or a 'voluntary code of conduct' (Kamata, Hudry, Jeong).

It was also suggested that policy deliberation on the use of cryptography should avoid drawing any distinction between domestic and international use as electronic networks defy the concept of geographical borders (Kennedy).

A corollary to the harmonization of encryption policies is the need for international co-ordination for the protection of individual privacy and the security of electronically stored information. It was widely pointed out that the assurance of individual privacy and confidentiality of information is fundamental to the building of the information society.

6. Rule setting for the cyber-economy

The new mode of communication and interaction has begun to force regulators, law makers and policy makers to re-examine those laws that appear less suitable for regulating electronic transactions and activities. Several dimensions of electronic commerce were highlighted. The amplitude of these issues suggests a need for a new policy agenda which governments have to address to ensure that there would be a smooth transition to the emerging 'cyber-economy.' Of particular significance are the impact of electronic cash or money on financial and monetary systems, the effect of digital information on copyright law and liability faced by on-line service providers.

Copyright and international trade in information

An important aspect of law enforcement in international trade in information is the enforcement of copyright of works in digital form (Chung, Cavazos, Masuda). The digitisation of information is challenging the current copyright laws. The ease with which digital information products can be replicated, transmitted onward, reproduced perfectly, and widely and instantly distributed without the knowledge of rights holders is a major focus of current efforts to update copyright law.

To deal with the threat of rampant piracy or unauthorised use of copyrighted material, legislative reforms and technical solutions have been adopted by several governments. Cryptographic methods are one of several technical solutions to protect digital intellectual property from being infringed. Much of the prevailing thinking on securing the international trade in information centres on the need for an international policy on cryptography for the secure delivery of information products (Jeong, Shin). At the same time, there is a need to consider the accessibility to information by 'have-not' countries who might be disproportionately disadvantaged by encrypted material (Jeong).

A looming threat to the growth of the information business was identified as the potential liability faced by on-line information service providers, or sysops (systems operators) for copyright infringement (Cavazos, Chung). Liability was mainly discussed in terms of copyright infringement, defamation and privacy violations. It was argued that by reforming or reinterpreting the law to impose a greater burden of monitoring infringement on sysops, or to make them increasingly liable for infringement, there was a likelihood that the currently healthy growth of this business would be jeopardised and that the wrong parties would be punished (Cavazos, Kennedy).

Copyright liability of on-line service providers for carrying unauthorised material is a significant problem for both lawmakers and providers. This is largely because the marked growth of on-line service providers and the growing volume of information transmitted through the networks will make the task of monitoring all transmitted information increasingly difficult and costly.

Suggestions, however, were advanced for encouraging sysops to take a more proactive role in monitoring possible infringement, although there was a recognition of the limited efficacy of these measures. Nonetheless, these included hiring more employees to monitor information that was being uploaded to the system and insisting that headers were to be shown clearly on all information that was being posted to the system (Chung). Questions as to the wisdom of the current trend to increase the liability of sysops were significantly noted.

Electronic currency and the financial system

Attention was focused on the impact of electronic currency on the financial system (Reed). Should electronic currency be offered by banks only? It was concluded that since current laws do not regulate the provision of digital cash and issuers of electronic cash do not receive deposits, non-bank institutions were in a position to offer this facility. This implied that the entry barrier to this segment of the market is relatively low, compared to the legal and fiduciary requirements for banks (Reed. Shin). In a sense then, this will likely foster the faster growth of electronic cash, and hence, electronic commerce, since electronic payment methods incur a lower transaction cost when compared to credit card, cheque or debit payments.

Was there a danger that the consumer would be exposed to fraudulent practices? It was argued that since digital cash works as a method of transferring value, whether in the form of goods, services or bank deposits, the contractual obligations implied by the accepted electronic payment immediately discharges the payer's debt to the seller and that the seller had accepted payment for the good or service. It was noted that problems arising from the use of these payment methods would likely be settled in court because these systems are not well established yet (Reed).

Building user confidence, from both the customer and vendor perspectives, is an important issue, but was only marginally addressed in the discussions. The (above) legal interpretation could instil some form of confidence in potential customers using electronic cash, but fears exist, for instance, about the privacy of their purchases arising from these transactions. Furthermore, electronic cash may create instability in the financial market. This could happen because unregulated non-banks that issue this form of currency could go bankrupt, thereby affecting consumer trust in the electronic funds transfer system (Shin).

It was acknowledged that the rising popularity of digital cash as means of payment was threatening banks with disintermediation and competition from non-banks. There was also a fear of the partitioning of markets into payment and custodianship which could imply some form of 'anarchy' in the financial world (Reed). It was, however, too early to assess the possibility of this outcome since electronic payment mechanisms are not yet well established.

Of immediate importance to government is the impact of electronic cash on money laundering. Since electronic payments can be made anonymously, it was feared that the authorities would find it increasingly difficult to monitor the movement of moneys. This, among other things, poses an enormous challenge to public finance laws.

Similarly, the anonymity of digital cash transactions provide avenues of tax evasion and avoidance. This is a problem that has begun to concentrate the efforts of tax authorities to tackle this matter; for instance, using the domain names of companies as a permanent legal residence for tax purposes (D'Ascenzo). Since many taxes are collected on the basis of information provided by the taxpayers which may be checked against other records, such as bank records, the anonymity of movements of moneys can tempt one to avoid paying taxes.

Furthermore, if records exist for electronic payments, such as with banks issuing electronic cash, these records can be dispersed geographically, and tracking them down is recognised as a costly and monumental task for tax collectors. International co-operation among tax authorities could be a way to help track these transactions.

To exert some control over the use of electronic cash, recommendations such as controlling the supply of electronic cash, imposing requirements on issuers of electronic money, considering the applicability of prime rate on this form of money and possibly, creating new regulations for small electronic payments were advanced.

Electronic currency and the monetary system

The emergence of 'electronic cash' as a substitute currency for traditional currency is an issue that is drawing great interest and concern. Its attributes of substitutability for cash, low transaction cost (about US$ 0.01 compared to US$ 1.20 for cheque processing, US$ 0.60 for credit cards, and US$ 0.40 for debit account) non-auditability, anonymity, non-counterfeitability and non-appropriability (holder of electronic cash cannot be robbed) collectively unsettle traditional money supply and central bank monetary policies.

Electronic cash can also affect the money supply because it was argued that widespread use of electronic cash could effect an increase in money supply. An increase in the use of electronic cash in foreign transactions can also affect domestic monetary policies.

To mitigate the potential effects of electronic cash on monetary policies, it was recommended that monetary authorities could consider imposing reserve requirements on entities issuing electronic cash.

The upshot, however, was a cautioning of policy makers not to be hasty in the formulation of new laws and regulations for electronic commerce. It was strongly emphasized that although government intervention was needed, hurriedly drawn measures to regulate the cyber-economy could be detrimental to the development of potentially important commercial activities.

Issues to be considered

The question of what entities and under what conditions they may be permitted to issue electronic cash is an issue requiring immediate attention as the income of central banks from issuing banknotes can be eroded by non-bank institutions issuing electronic cash (Shin).

It was also suggested that new forms of competition be identified so as to divide judiciously the roles to be played by government and private institutions in the regulation of cyberspace (Brousseau, Masuda, Kang). Understanding the characteristics of the Internet would be useful in the formulation of imaginative regulations for electronic commercial transactions (Kennedy, Varian).

7. The way forward to the Global Information Society

In concluding the Seoul Workshop, an invited group of panellists offered their thoughts on realising the Global Information Society.

Putting competences to work. Alain Brun stressed that it was important that the European Commission and the OECD combine their expertise to tackle the risks inherent in electronic transactions. He noted that guidelines and recommendations for dealing with the dangers of loss of privacy, infringement of intellectual property rights and the violation of consumer interests could be competently formulated by these two organisations. The effective management of these issues would create an important building block for the Information Society.

Caution with over-regulation. Hal Varian cautioned against the mounting tide for 'blindly' regulating the Internet. In the rush to regulate it, policy makers have appeared to ignore the particular characteristics of the Internet. The rush to impose new laws and regulations for the Internet without thorough consideration could have pernicious results on the subsequent development of the information superhighways.

Internationalism and the mapping of the cyber-economy. International collaboration for the realisation of the superhighways was highlighted by John Dryden. A major task for intergovernmental bodies to undertake is to devise new analytic techniques to measure and map the cyber-economy so that policy makers may be able to use the information for the formulation of prudent policies.

The focal role of government leadership. Dr. Yoon highlighted the important mediating role of government in the preparation for the Global Information Society. This role of government is especially pivotal in devising appropriate regulations, improving its efficiency through the adoption of information technology and providing more electronic services so that their citizens will be able to derive the social and economic benefits from the coming Information Society.

The integral role of information technology in economic performance. Risaburo Nezu offered his insights into the contributions of information technology and deregulation to the growth of the economy. He illustrated this by comparing a selected group of advanced industrial economies for two periods and showed that where those countries had actively deregulated and widely employed the use of information technology to improve the performance and offerings of their service industry, they had outperformed those countries that had not.

APPENDIX [3]

SESSION REPORTS OF SEOUL WORKSHOP

Session 1: Using new technologies and tools to improve the provision of government services

Much of the current thinking accepts the contributory role of new technologies to the enhancement of efficiency and productivity in the work place. This session aimed to discuss the ways in which governments have adopted information technology to improve the delivery of public services. It also addressed international projects involved in promoting the use of information technology.

Overview of national government and multinational initiatives

Sandra **Prerost** (GlobaLink Communications, Australia) addressed the national and international initiatives for the development of information and communication technologies and services in preparation for the Information Society. The driving incentive for the introduction of these initiatives is the belief that information technology can be harnessed to improve the economic performance of countries, enhance the performance of government, improve the quality of life and generate greater social cohesion.

At the national level, several commissioned reports and initiatives have been undertaken to study the ways that government could innovatively adopt information technology and provide electronic public services.

One key international project that has received much attention is the G-7 Information Society Initiative whose mandate is to identify projects for international collaboration for the purpose of demonstrating the value of the information technology and promoting its deployment. To date, eleven projects have been selected, each to be led by one or more countries. The main objectives of the Initiative are: interoperability; intergovernmental collaboration; the creation of markets for new products and services; and to improve the quality of life.

Despite the enthusiasm with which these initiatives have been introduced, attention was drawn to the complex array of issues that governments and international bodies have to deal with before the full benefits of, and opportunities from, the adoption of information technology can be realised.

The G-7 government on-line initiative

Michael **Harrop** (Treasury Board of Canada Secretariat, Ottawa) outlined the objectives of the G-7 Government On-line project (GOL). The primary objective of this project is to examine how government may be restructured with the use of information technology, with an emphasis on the public administration 'going online.' Three streams of activity were identified to help accomplish this objective. They are:

- the development of online transaction processing for routine public services;

- the widespread provision of fully interactive online services for the citizen;

- the use of electronic mail to replace paper-based communication within government, between governments, and with the public.

The GOL was initially proposed by Canada with the support of the UK in April 1995. Since then, participation in the GOL project is impressive and includes all the G-7 countries, the European Commission plus several non-G-7 countries. The City of Rome is the first municipality to participate directly in the project. The project also co-operates with several international bodies, including the OECD, the Global Information Infrastructure Commission and the Commonwealth Network of IT for Development.

The GOL project faces several constraints. Organisational commitment to the project is not always supported by active participation; varying work methods of the participants; the need for more visibility and effective publicity for the project; and the lack of funding and resources (no new funds have been allocated to this project which is covered by existing programmes).

Despite the obstacles it faces, the GOL can boast a number of achievements. In addition to the large number of participants it has attracted, the project has successfully established management guidelines for the smooth operation of the project; facilitated the interoperability of incompatible electronic mail systems; completed a database of GOL-related activities and built a Web site; and has started on the development of directory services.

Recent developments in advanced use of information and telecommunications technology by the Government of Japan

Hiroshi **Nakagawa** (Management and Coordination Agency, Japan) presented an outline of the systematic measures undertaken by the Japanese Government for the implementation of information technology applications throughout its administration. Promoting the concept of the use of information technology as a 'new type of social capital stock,' the Japanese Cabinet adopted, in 1994, a ten-year policy of investment in the use of new technologies.

The main objectives of this policy are:

- the promotion of advanced use of information technology and electronic information services in public administration;

- the promotion of the innovative use of information technology and applications in each agency;

- establishment of guidelines for realising the Information Society.

Many of the objectives have been achieved. The Japanese Government is in the process of reviewing existing legal institutions and practices to ensure that electronic information can be securely transmitted; and that information can be verifiable and authenticated. Emphasis also has been placed on co-ordinated programmes for training and education.

The Japanese case shows that there is a strong relationship between clearly articulated policies and a systematic and co-ordinated approach to implementing them, and the success in achieving policy objectives.

Applications of information technology in the US federal government

Michael **Chinworth** (TASC, Washington DC) questioned the role of government in diffusing technology, despite its role as the single largest provider and consumer of information technology and its broad-based use of information technology. This doubt is based on the multiplicity of problems that the US Government has faced in the implementation of advanced applications.

The specific needs of government can make it difficult for government to take the lead in the diffusion of new applications. The stringent requirements, for instance, in defence procurement, implies that the application is limited to government utilisation.

The continuing policy disagreements over the use of encryption, privacy and system interoperability also cast doubt on the role of government as an advocate of new technologies and applications. While these policy variances may, in several cases, be legitimate, their impact on industry use and development may result in their slowdown.

Other issues that could impact on trends in government utilisation of information technology were discussed. These included pay for use for Federal government information, and the systematic adoption of information technology by local and regional jurisdictions, which by themselves are large potential markets.

Changes in the procurement process and their impacts

Georges **Ferné** (OECD, Paris) argued for the importance of government in the development and diffusion of new technologies. As the single largest buyer and user of information technology, government through its procurement procedures, in particular, can affect the adoption of advanced applications.

The impact of government on the diffusion of information technology can be felt in a number of ways. These include:

- stimulating competition and innovation among suppliers of equipment and services in providing the most effective applications;
- encouraging the development of interoperable systems;
- the establishment and adoption of standards;
- transparency and 'level playing field' for national and international firms.

In exercising its influential role, government should not overlook the central issues of competitive bidding and the effective co-ordination of its procurement strategies. Attention also needs to be given to the importance of 'being a smarter buyer' in which government adopts a long-term perspective instead of one based on short-term costs in order to avoid the possibility of making poor technological choices.

Discussants

Ilmari **Pietarinen** (Ministry of Finance, Finland) raised questions about whether the use of information technology will actually change government processes. In particular, he pointed out that while the use of electronic mail has decreased the use of the phone by 25 per cent in Finland, the large volume of paper-based transaction between government and the private sector has not shown any decrease. As a way of measuring the adoption of information technology by government vis-à-vis the private sector and other governments, the idea of a 'score card' was advanced.

Sang Young **Sonn** (KISDI, Korea) agreed with the overall importance of government as a catalyst for the development and diffusion of information technology. Significantly, he stressed that government has the additional role to intervene in the marketplace in the event of market failure. In pointing out that the implementation of information technology has resulted in unemployment and in many being worse off, Sonn suggested that government must undertake measures for effective allocation of resources to prevent these developments. Such developments question the theoretical implications of the new development economic theory which argues that no-one is worse off with the adoption of new technologies.

Stephen **Ward** (EDS, US) pointed to the high cost of telecommunication, the varying points of development of national telecommunication infrastructures and over-bureaucratisation as some of the major obstacles to the diffusion of information technology applications. He suggested the concept of 'co-sourcing' in which the supplier and client work closely together in order to achieve optimum results from the selection and implementation of advanced applications. This approach could also assist government with the best choice of information technology applications.

Discussion

A brief discussion followed during which Chinworth stressed the importance of reforming procurement as the most critical priority for government restructuring. Nakagawa and Harrop concurred that change in cultural mindset toward the use of information technology was instrumental for successful government reforms. Prerost pointed to the need for government to keep abreast of market trends and changes in order to improve its administrative performance and service delivery. Ferné emphasized the importance of government rewriting the commercial code in the light of new technologies and to adapt to these developments so as to derive maximum benefit from them.

Session 2: Restructuring government using new information infrastructure and services

This session was aimed at examining the various ways that governments are adopting new technologies and applications to improve their administrative and service performance. Speakers addressed the ways government restructuring was currently being undertaken and the inherent problems involved in the restructuring process.

Electronic delivery of services via the Internet

Fred **Wood** (National Institute of Health, US) highlighted seven key elements identified by the OTA study Making Government Work for a coherent strategy for successful electronic delivery. These are:

- grassroots involvement;
- community infrastructure development;

- encouraging innovation;
- creating directories;
- creating alternative futures;
- strategic partnering; and
- pre-operational testing.

The activities of the National Library of Medicine (NLM) were used as an example of the US government's attempt to restructure itself, and particularly to improve the delivery of its services. NLM identified the Internet as a major delivery channel to disseminate, among other information sources, its flagship database, MEDLINE, which is the world's largest biomedical database. The users of NLM's databases have grown impressively since its accessibility through the Internet: in 1992, one per cent of users were Internet users; in June 1996, this proportion had risen to 39 per cent.

The success of NLM's electronic delivery strategy is a result of the critical adherence to the seven key strategic elements. It was specifically noted that the role of grassroots and user involvement is fundamental to successful government reinvention, for without user participation the development and implementation of NLM's expanded service delivery could have been jeopardised.

The successful use of the Internet by NLM is also an indication to other governments that this medium is a viable means of service delivery. The registered growth of Internet connectivity by developing and less industrialised countries is another positive sign for the use of this network for public service delivery and government restructuring.

Implications of information technology for government institutions

Harry **Bouwman** (TNO and University of Utrecht, the Netherlands) discussed the concept of accessibility to government information, and the implications of accessibility for the democratic process, and for public services and administration.

Adopting a user perspective, Bouwman defined accessibility as attainability in terms of the ease with which the public can identify and receive information; comprehensibility in terms of content and format; timeliness of information and usability of the information to attain societal goals, or for better informed decision making by the public. Each of these aspects has implications for government restructuring and the democratic process.

A case study on electronic publishing by six government agencies in the Netherlands was presented to illustrate the barriers to accessibility. These were technological, organisational and financial barriers.

The case study suggested that the technological barriers could be largely overcome by a mix of delivery methods for effective dissemination of public information. It also proposed that the Internet could be used as both as a means of delivery as well as a platform for building, maintaining and updating databases.

Organisational barriers could be overcome by outsourcing information products to commercial publishers and not-for-profit organisations. The persistent effects of institutional practices, however, continue to hamper the organisational capability of government to produce and deliver a wide range of public information.

Pricing discrimination should be avoided. Instead, it should be product-based, with users being charged according to the kind of information requested, the delivery mechanism used, and the support facilities expected of the service provider.

Information technology usage and restructuring of government

Jostein **Haoy** (Ministry of Government Administration, Norway) emphasized the need to provide citizens with timely and useful information as a primary goal of government restructuring. To achieve this, it was necessary for government to develop and implement better information systems through the adoption of information and communication technologies.

These systems, described as 'change management systems' are for the purposes of monitoring the effects of policy changes, benchmarking the performance of government agencies and co-ordinating the adoption of advanced information technology applications among public bodies. The overriding goal of these systems is to provide citizens with better information services.

An explanation for the current measures to improve the management of the Norwegian central government budget and the budgets of the 435 municipalities and 18 counties was presented to show the preliminary effects of these change management systems on government restructuring. These included better identification of obstacles to policy achievements and the formation of performance indicators for ministries.

The major prerequisites for successful implementation of information systems were identified as:

- a bottom-up approach to the development of these systems but a top-down implementation of them;
- strong user involvement in the design and implementation of these systems;
- the publication of open voluntary standards for the benefit of suppliers and users;
- the active development of consensus within the public administration, and supporting organisations and personal networks.

Impact of the information society on government policy development process and on democracy

Robert **Gualtieri** (Consultant, Canada) argued that new technologies have had little impact on the information policy process and the quality of democracy. This conclusion was based on discussions with government officials in selected OECD countries on how new technologies are affecting the gathering and dissemination of public information. These governments, however, have used information technology to restructure themselves and to improve the efficiency of their service delivery.

There were several reasons for the lack of widespread adoption of new technologies by governments. Technological factors, as well as entrenched practices in the decision- and policy-making processes militate against the extensive use of innovative and advanced information technology applications. A paper culture still persists.

Ironically, the attempts by governments to use the Internet, through government web sites, as a gathering instrument resulted in many being shut down because of the overwhelming public response. This suggests that governments prefer to use new technologies more to disseminate their message than to gather information and bring the public closer to the heart of political activity. Government web sites have also been constructed for reasons of prestige, rather than for information dissemination. This explains why several of these web sites are not readily updated with current information.

Dissemination of public information and accessibility to it depend, to a large degree, on the political culture of the country. The use of new technologies to gather and disseminate information is also a question of political will and the commitment of government to enhance the democratic process.

Virtualising government structures and organisations

Lawrence **Loh** (National University of Singapore) explored the impact of information technologies on the virtualisation of state agencies. The exposition focused on the possibility of the transformation of state agencies in an increasingly digitally mediated environment.

A conceptual schema was used to describe the virtualisation process, illustrating how the dual forces of economic and social pressures affect the forms and functions of government structures. Four scenarios were provided to extrapolate the forms and functions of government organisations.

Describing Singapore in terms of a country that was well advanced in virtualising its state agencies, Loh noted that several challenges still had to be met by the country. These included widespread adoption of the Internet, the encouragement of the private sector to help develop the national information infrastructure, and a necessary change in institutional and organisational practices that will accept and adapt to change. The vital contribution of a state-led approach to virtualisation was especially stressed.

Discussants

Dora **Mozes** (Industry Canada) summarised the implications of the papers provided in the session and highlighted the common impression given by the papers that the use of information technology was not making government more open and transparent to the public. She also noted that it had not been clearly argued that the adoption of information technology would help in the downsizing of government, despite the widely received wisdom that it would. Mozes suggested that in order to make the information society a reality, government should actively ensure access to the information infrastructure. Innovation must also be encouraged for the development of new delivery methods and new services.

Nagaaki **Ohyama** (Tokyo Institute of Technology, Japan) pointed out that for successful restructuring, governments must identify the motivations for the restructuring and the associated problems. In illustrating the significance of these two points, he recalled the systematic approach adopted by the Japanese Government (and discussed by Nakagawa) to restructure its administrative and organisational practices. He described the intention of the Japanese Government to issue an electronic resident card which could take the form of a 'cyberspace passport' for personal identification. This would include personal data and the 'passport' would be used for the receipt of electronic public services.

Discussion

In discussion, Wood pointed out that the effects of the adoption of information technology on democracy depend on the country. For instance there was little fear in the US that the government could use these technologies to control the electorate because of their broad-based use. Bouwman suggested that accessibility to information could be enhanced with the co-ordination of databases, and offerings of various packages of information using different delivery mechanisms. Haoy noted that it was important to be mindful of the fact that technologies should be used to increase dialogue between the stakeholders and to restructure government, but that they should not be used to change the goals of government. This point was reiterated by Kim (Chair of the session). Mozes cautioned against over-emphasizing the Internet as a means of delivery, and recommended that governments should look at alternative means.

Session 3: Social values and safeguards in cyberspace: law enforcement and privacy; censorship and freedom

Much public concern has been expressed over the gradual erosion of individual privacy and consumer protection, the decrease of security and confidentiality of communication and data, the endangering of intellectual property protection, and the increasing difficulty for law enforcement in a digitally mediated environment. Speakers were invited to discuss these topics and highlight policy relevant issues.

OECD and cryptography policy guidelines

Hiroko **Kamata** (OECD, France) recounted the vital functions of cryptography and emphasized their importance for the evolving Global Information Infrastructure (GII) and the Global Information Society (GIS). These functions are:

- confidentiality of data and communication;
- authentication of data and communication;
- integrity of data and communication;
- non-repudiation of data and communication.

The multifaceted uses of cryptography in an electronic environment have stimulated the need for a judicious balance between private and public interests, for instance, between privacy and confidentiality, and law enforcement and national security. Many national governments have begun to address the use of cryptography.

Varying national policies on cryptography reflect the difficulties in building this balance. However, recent legislative reforms and new national policies on encryption indicate the active commitment by government to maintain the balance so that a propitious environment may be established for the coming information society.

Recognising that international policy co-ordination in cryptography is an integral component for the GII/GIS in which information is expected to flow more freely between jurisdictions, the OECD is taking the lead in drafting policy guidelines which will be used as a foundation for eventual international harmonization. These will be presented for official approval at the beginning of 1997.

International co-operation and regulation of the Internet

Pierre **Hudry** (Ministry of Post and Telecommunications, France) outlined a multi-tiered, multilateral approach to the regulation of the Internet. He argued that such an approach would be more amenable to international co-operation than one that was treaty-based because it emphasized collaboration. Using this procedure, international co-operation would be sought to help establish the groundwork for an international voluntary 'good conduct' code.

The approach involves a listing of principles by which signatory or participating members would abide. Members would include telecommunication operators, access providers, content publishers and host service providers. Guidelines aimed at consumer protection and the safeguarding of civil liberties and individual privacy would be the second component of this approach. Guidelines for law enforcement comprised the third element.

The scope of copyright liability of on-line service providers

Chan-Mo **Chung** (KISDI, Korea) outlined the copyright problems that result from the digitisation of information. The main problems are the fast, easy and voluminous reproduction of digital information, and the simultaneous transmission and distribution of such material to multiple points. National legislatures and international bodies involved in matters of intellectual property protection have begun to respond to the challenges that the digital environment has posed for copyright law.

The problem of copyright liability of on-line service providers for carrying unauthorised copyrighted material is a significant problem for lawmakers. This is largely because there is (1) a marked growth in the number of on-line service providers and (2) it is increasingly difficult and costly for these providers to monitor all the information that is being posted to their services.

Several reasons for imposing copyright liability of on-line service providers were advanced. These included making on-line service providers who have been informed of the presence of infringing material on their service liable if they did not act to remove it. Arguments against the imposition of liability were also offered, many of them based on the observation that the volume of material distributed through the network precluded the practical possibility of monitoring everything.

To combat the potentially high incidence of infringement, measures to protect the distribution of software through the Internet were suggested. These included encryption, education of on-line subscribers on intellectual property rights, and the right of service providers to screen files, if there was a suspicion that unauthorised material was being transmitted.

Citizen, consumer values and government in the global information society

Susan **Baldwin** (Department of Canadian Heritage, Canada) focused on the key issue of access and its importance for the realisation of the GIS. Making clear that access to the GIS did not only mean access to the Internet, Baldwin discussed this vital issue in terms of:

- physical and technical access to products and services;
- affordable access to information networks;
- requisite skills, aptitude and education.

The discussion on the 'catalytic' role of government in helping to realise the GII/GIS through widespread access included a responsibility on the part of the state to balance private, public and commercial interests, and to uphold democratic values. Government should also undertake measures to provide opportunities for its citizens, and to create an environment for the exploitation of these opportunities so that the gap between 'haves' and have-nots' may not continue to widen.

In order to ensure that government policies for the development of the information society can be evaluated, it was suggested that frameworks, as suggested in the GII/GIS Policy Statement, for the construction of statistical indicators be rigorously developed.

Discussants

Young-Cheol **Jeong** (Yoon & Partners, Korea) stressed the need for international co-ordination of cryptography policies and the balance between privacy and security. Concern was expressed over the possibility of countries using cryptography as a barrier to international trade, such as that posed by export control regulations. A policy on cryptography for international trade was therefore noted as a major issue for consideration. Similarly, the question of access to technologies and services was crucial, and this issue had to be extended to have-not countries. Difficulties over the regulation of the Internet was also expressed as it was observed that its growth far outpaced that of the law.

Peter **Kennedy** (George, Donaldson & Ford, US) noted that the Internet is different from any transmission or telecommunication network. It was therefore important for regulators to understand the characteristics and nature of the Internet before attempts to regulate it are undertaken. The concept of collaboration, as presented in Hudry's paper, was emphasized as a good starting point. In connection with Kamata's paper, Kennedy commented that the harmonization of cryptography policies is fraught with difficulties because countries must first note that it is difficult to distinguish between domestic and overseas policy. It was observed that the legal attempts to impose copyright liability on on-line service providers faced the danger of punishing the wrong parties.

Il-Soon **Shin** (KISDI, Korea) agreed that copyright law should be reformed but added, in connection with Chung's paper, that the cost of proving non-infringement should be imposed on the on-line service provider rather than the copyright holder. With regard to cryptography, he questioned if it was possible to devise an internationally agreed principle on the distribution of key escrow agents, and wondered if they would be distributed in the exporting or importing countries. He noted that in Korea, there was little regulation over private sector use of encryption, unlike that of the public sector.

Discussion

A major concern was expressed over the regulation of the Internet. In particular it was felt that regulating the network would change its character and its culture. Kamata noted that the OECD guidelines will not endorse any particular cryptography policy, for example, one which involved key escrow arrangements. She also explained that the OECD does not intervene in export control regulations although the Organisation does aim to promote fair and open trade. In response to the need for regulation of the Internet, Baldwin noted that the increasing use of the medium for commercial applications warranted some form of regulation.

Session 4: Commercial activities in cyberspace: electronic commerce and government

With the increase in the range of commercial transactions via the Internet, innovative methods of payment for goods and services are being developed and introduced to replace or complement the use of cash and credit. This session was concerned with the implications of electronic commerce for fiscal, monetary, commercial and security regulations.

Digital cash and internet payment system

Chris **Reed** (University of London, UK) examined the legal issues raised by the range of payment mechanisms now available for commercial transactions conducted through the Internet. They are often referred to as electronic money or currency, or digital cash. Several financial institutions now offer these forms of payments. The prognosis for the use of payment systems is that they will be increasingly used for commercial activities.

The legal issues regarding the issuance of electronic money raise the question whether this type of activity may only be offered by banks. Banking supervision laws generally apply to activities that involve accepting deposits, and as most digital cash systems do not undertake this type of activity, it was argued that these schemes are beyond the purview of banking laws. This suggests that there is free entry into the market so that non-financial and unregulated organisations can provide these services. Digital cash payment mechanisms thus confront current banking laws.

The implications of digital cash for other current laws and regulations are equally far-ranging as they affect national and international financial systems. Anonymous electronic payment methods increase the potential for tax evasion. Consumption taxes, such as VAT, also can be difficult to collect if these payment methods are adopted. These systems also might act as a channel for money laundering. Other challenges posed by digital cash payments to current laws and regulations involve the control of money supply, and the effects on exchange controls and exchange rates.

Cyber-economy, the new socio-economic system and policy issues

Yuji **Masuda** (University of Tokyo, Japan) discussed the characteristics of the emerging cyber-economy. This new phenomenon engages a whole range of electronically conducted activities which has, in its path, impacted upon existing social, commercial and economic rules and conventions.

To ease the transition of current economies to this new post-industrial, information-intensive socio-economic environment, Masuda emphasized the vital role of government. In particular, he suggested that governments must devise an information and industrial policy which concentrates on stimulating competitiveness, deregulating information and communication technology industries, and in creating new institutions that will help facilitate the passage to the cyber-economy.

Many other new policy issues for the cyber-economy were discussed. There was a need to consider several urgent issues, including the protection of digital intellectual property rights, security of commercial transactions, communication and data, cryptography, financial and taxation matters. It was emphasized that governments must realise the centrality of these matters and respond to them on a national and international level.

The consumer in the information society

Claire **Milne** (Consultant, UK) presented the results of a survey commissioned by the European Commission on consumer concerns in the emerging information society. The main objectives of the study were to assess future patterns of use of telecommunication services by consumers over the next decade, to identify emergent industrial patterns, to identify the implications for consumers of technological developments and areas of consumer protection, and to develop measures to achieve this protection.

With regard to consumer concerns, the survey identified seven distinct categories of risks. These were:

- consumer institutions -- inadequate complaints and redress systems, and inadequate consumer participation in policy making;
- consumer contracts -- unclear contracts and inadequate price indications;
- privacy and security -- misuse of personal data and insecure personal communications;
- access and affordability -- essential services not affordable, incomplete interoperability and the unavailability of essential new services;
- price -- overall too high and inequitable pricing for residential consumer;
- quality -- harmful content, poor telecommunication service quality; unwanted side effects of competition;
- choice -- barriers to choice of carriage and difficulty of finding content.

Of the seven categories, the prevailing concern was with the lack of effective complaints and redress systems. There was also uniformly deep concern with data protection legislation. Although content control was noted as a common worry, it did not appear to be an issue of much anxiety. There were, instead, expressions of fear of increased censorship.

The study recommended a two-pronged approach to help consumers derive the best possible protection in the emerging information society. The first aspect was to stimulate 'proactive consumer empowerment' to help consumers make their own choices; the second was to establish 'reactive consumer protection' through legislation so that fair treatment for all, regardless of the choices made, would be maintained and made available. This was to be done by close monitoring of market developments so that new areas of concern may be identified and new measures introduced.

Electronic cash and policy issues

Yongdo **Shin** (KISDI, Korea) examined the role of electronic cash in the payment system and discussed its impact on the financial system and monetary policies. The attributes of electronic cash were discussed to emphasize its unique characteristics.

The impact of electronic cash was discussed in terms of the possibility of creating instability in the financial market. This could happen because unregulated non-banks that issue this form of currency could go bankrupt, thereby affecting consumer trust in the electronic funds transfer system. Instability can also occur from the preference of a certain type of electronic cash and instigate unfair competition. To

prevent instability in the financial system, it was recommended that (1) clear qualifications and obligations of electronic cash issuers be established; and (2) the rights and risks of the payer, recipient and the intermediaries be defined.

Electronic cash can also affect the money supply. By using an equation of exchange in conjunction with the money multiplier, it was shown that widespread use of electronic cash could effect an increase in money supply (with the rise of the money multiplier) without any change in the stock of money. An increase in the use of electronic cash in foreign transactions can also affect domestic monetary policies because, in the absence of exchange rates for electronic cash, speculation for foreign electronic cash is inextricably linked to real exchange rates.

To mitigate the potential effects of electronic cash on monetary policies, it was recommended that (1) the monetary authority impose reserve requirements on entities issuing electronic cash; (2) the value of electronic cash issued should be included in the narrow money aggregate; and (3) the time lag in the adjustment of the money stock be reduced.

System operator liability and cyberlaw

Edward **Cavazos** (Andrews & Kurth, US) explored the risks of increased liability faced by system operators in the US. System operators were defined as those who manage on-line services, bulletin board systems, computer conferencing systems or World Wide Web servers. Liability was discussed in terms of defamation, copyright infringement and privacy violations.

Cases for each of the areas were reviewed and it was pointed out that judicial opinions from these cases will affect the future development of 'cyberlaw.' To protect system operators from liability as a 'publisher' of defamatory and harmful material, Congress passed a 'Good Samaritan' provision in which system operators were not to be treated as publishers or speakers of any information provided by another information content provider. No judicial guidance as to the application of this provision exists yet, and there are concerns that system operators may still be held liable as 'a publisher.'

The large file collections maintained by system operators for the purpose of allowing users to upload and download expose them to the risk of potential copyright infringement. The size of these collections also makes it impractical for these operators to verify the legitimacy of every uploaded file to their system. System operators face the possibility of charges of direct infringement, contributory infringement or vicarious infringement. The susceptibility to these charges is dependent on the nature of each case.

System operators also face the tricky task of maintaining the privacy of their users, particularly that of electronic mail privacy. Despite the passage of the Electronic Communications Privacy Act of 1986 by Congress to protect the privacy interests of those conducting electronic communication, there is still a large degree of ambiguity over the statutory interpretation of this Act. This uncertainty increases the vulnerability of system operators to liability charges. It was feared that this uncertainty may have deleterious effects on the growth of this important sector of the information-based economy.

Discussants

Michael **D'Ascenzo** (Australian Tax Office, Australia) stressed the concern that governments have over the effects of electronic cash on taxation. He pointed out that despite the fledgling use of electronic currency, the threat of money laundering and tax evasion is real and governments are devising means to tackle these problems. For instance, tax authorities are beginning to use domain names as permanent legitimate residences for the purposes of taxation.

Hong-Ryul **Kang** (KISDI, Korea) noted that in analysing the cyber-economy, consideration should be given to the market structure, types of digital cash issued and the role of intermediaries, such as system operators. He noted that while the growth of the use of electronic cash appears apparent, innovative legal and institutional measures will determine the widespread acceptance of its use.

Eric **Brousseau** (University of Nancy II, France) emphasized the vital role of selective government intervention in the evolving cyber-economy. In particular, he noted that security and privacy issues were the province of government. As for the regulation of electronic commerce, Brousseau suggested that private actors were better positioned to create institutional mechanisms for electronic commerce, such as payment mechanisms. The task facing policy makers in the new economy is how to divide rule making between public and private organisations.

Discussion

In discussion, Masuda commented that it was necessary to consider where the new forms of competition would emerge with the growth of electronic commercial activities. Wood wondered if the US model of liability of system operators would be applicable to the rest of the world. Cavazos responded that it was difficult to apply the model as it was still evolving; and different laws were applied in each country. Nonetheless, general principles could be applicable.

Session 5: Panel discussion

This session was chaired by Pasi Rutanen (Dean of the OECD Council, Permanent Representative of Finland to the OECD) and included the summary comments of invited panellists and the Rapporteur's summary.

Risaburo **Nezu** (Director, DSTI, OECD) stressed the importance of information technology in facilitating the development of advanced service industries which is an integral reason for economic growth. In a comparison between countries that had advanced service industries (the US, the UK, Australia and Canada -- Group 1), and those that had concentrated less in developing these industries (Japan, Germany and France -- Group 2) for the period 1992-95, he showed that the former group of countries had economically outperformed those of the latter, although Group 2 had done better than Group 1 for the period 1990-92. Using the same groups of countries, he also noted that deregulation had a positive impact on the economies of Group 1, whereas deregulation had yet to gain a strong foothold in Group 2.

Nezu also warned about the over-emphasis placed by several speakers on the Internet as the best communication system. Its lack of reliability, security and the cost of using it were aspects that were insufficiently observed.

Caution was also expressed over the bias exhibited by speakers toward a technology push argument rather than one based on demand pull. The success of the GII/GIS is greatly reliant on users and consumers.

John **Dryden** (ICCP/OECD) presented an agenda for action which emphasized that the realisation of the GII/GIS will best be achieved from concerted international collaboration. He noted that the cyber-economy will place many demands on governments and international organisations, and this will further contribute to the importance of international bodies in advising governments of rapidly developing international changes.

The need to develop statistical indicators and analytical techniques for more rigorous mapping and measuring of the information economy was reiterated as a priority undertaking. This issue was discussed in length at the Helsinki workshop.

He announced that the OECD will be staging a conference on Consumer Protection and the Internet in March 97 which is expected to yield valuable policy insights into this important issue. Similarly, the present workshop had clearly indicated the important policy issues that require prompt attention by national governments and international bodies.

Chang-Bun **Yoon** (KISDI, Korea) highlighted the role of government in a rapidly informatising world. In particular, he noted that governments should play a mediating role and institute regulatory frameworks to help facilitate the smooth economic transition of their countries to the cyber-economy.

Governments also had a responsibility to increase their efficiency, and in this, they needed to be committed to the use of information technology. He also stressed the obligation of governments to increase the range of public services so that the quality of life may be enhanced.

In the passage to the information society and cyber-economy, there was a threat that the gap between have and have-not countries would increase. Consideration should be given to prevent this eventuality, in the same way that the social and cultural impact of information technology needed to be deliberated in order that prudent policies and actions may be taken. OECD workshops would be appropriate fora for the discussion of these matters.

Alain **Brun** (European Commission, DGXV) noted that it was possible to define the GII/GIS in clear terms so that the average citizen will be able to understand them and appreciate their importance. He suggested that the GII could be defined in terms of being a new way of communication, in the way that the Internet is a new mode.

There are two aspects of the Internet. One is the positive role which entails giving the individual citizen access to the GII. The other is the reactive role which involves possible risks of the erosion of privacy, the potential increase of infringement of intellectual property, and the violation of consumer interests. These dangers demand that governments respond to them as expeditiously as possible. Brun feared that unless consumers could be assured that the use of the Internet did not entail too many risks, take-up of electronic communication could decrease.

The workshop discussions reflected a shared perception regarding these risks. Solutions to them, however, differed. The combination of the competences of the OECD and the European Commission was suggested as a way to build global consensus for the solutions to these problems.

Hal **Varian** (UC Berkeley, US) observed that the interactive and decentralised nature of the Internet provided the possibility for flexible regulation. Governments should explore the characteristics of the Internet before attempting to regulate it, and then exploit its novel capabilities to formulate policies regarding its regulation.

A central characteristic of the Internet is its ability to allow for mass customisation of products. This implies that it is possible to devise mass customisation of regulation. Two examples were advanced to show this possibility. (1) Platform for Internet Content allowed users to evaluate content at various sites as well as rate the sites so that unsuitable material may be filtered out for children. (2) Privacy on the Internet can be achieved through contract or negotiation. By selling one's right to privacy for a certain fee, for instance, one's name for a mailing list, one can determine if his/her privacy is worth protecting. The current system for including one's name on a mailing list is confined to 'checking the box.'

Scepticism was expressed regarding the rush by many governments to regulate the Internet. This has resulted in some inappropriate laws and regulations. It was strongly urged that governments should utilise the interactive features of the Internet to regulate it, as the two examples have illustrated this possibility.

Pasi **Rutanen** (Dean of the OECD Council, Permanent Representative of Finland to the OECD) concluded the session by highlighting the need for governments to deliberate carefully the issues of access, efficiency and effectiveness of public services as well as the others highlighted in the workshop. He stressed the enhanced importance of international organisations in helping to pave the way to the coming GII/GIS.

SPEECH SUMMARIES BY SPEAKERS

(Session 3)

SOCIAL VALUES AND SAFEGUARDS IN CYBERSPACE

CITIZEN AND CONUMER VALUES: GOVERNMENT IN THE GLOBAL INFORMATION SOCIETY

**Susan Baldwin, Director General, Broadcasting Policy Branch,
Department of Canadian Heritage, Government of Canada**

Information and communications technologies (ICT) are transforming national societies and integrating economies -- creating a linked and interdependent Global Information Society. The GIS is all about linkages -- the linking of networks, content, and people through a variety of technologies, and in a variety of new ways. Indeed, the importance of geographical location and distance can disappear with the use of advanced technologies and the emergence of a GIS which will see:

- Electrons and light pulses washing across the globe and through space transporting tetra bytes of digital information by the second.

- All the current and accumulated knowledge of mankind at hand; available for instant access and review on display panels built into desks and mirrors and walls.

- Voice activated information retrieval. Information systems will be exploited for us by roving intelligent agents bringing us what we want in the form we want it.

- The all-embracing digitisation of cultural products and content. Virtually anything that amuses, entertains, or educates will be available to each of us to experience in our own cyberspace.

- Politics transformed by the advent of electronic plebiscites. People will truly think globally and act locally.

- People experiencing the incredible mix and diversity of the world's peoples with a corresponding reassertion of indigenous culture and identity.

- The developed world in a new "rapprochement" with the developing countries. The character, empowerment, and sheer reach of information technology will allow for some real closure of the development gap.

However, other less inspiring scenarios are also quite possible. Computer systems and information technology could polarise the peoples of the world in ways that would make the current gaps between the developed societies and the developing countries appear minor in comparison.

Change, as they say, is a constant. All governments, to one extent or another, must continually reshape public policy and law to reflect and adapt to the times in which we live. New technologies are pushing us to move more quickly. We must not lose sight of a key reason why public policy exists -- the recognition and protection of the rights and responsibilities of citizens of a country, both collectively and as individuals.

It is time to go beyond technology and think more broadly in terms of the impact on people. This has been a consistent Canadian message for several years now, and, while it is getting more attention, it is not necessarily getting easier. As Marshall McLuhan once said:

> *"All media work us over completely. They are so persuasive in their personal, political, economic, aesthetic, psychological, moral, ethical and social consequences that they leave no part of us untouched, unaffected, unaltered".*

Most of us are feeling that way about the intrusion of the information highway in our lives. For some people, the new technologies offer unprecedented opportunities and greater knowledge about the world around us. But for others, it can be overwhelming. Bruce Phillips, Canada's Privacy Commissioner put it well in his Annual Report:

> *"It is not enough that new technology satisfy material needs. It must also play its part in affirming human dignity and human potential. Otherwise, we are conducting a technical exercise in a moral vacuum -- molding our lives to fit technology, not making technology fit our lives."*

If left entirely to consumer-based market forces, the new tools and technologies of the Global Information Society might be familiar and useful, but only for a select few of us. We must maximise the opportunities for everyone to participate in a way which protects us as much as it frees us.

If we accept that government must assume responsibility for ensuring full and meaningful participation of citizens in the GIS, access is key. But -- access to what? What kinds of information and services should be available to everyone? Access by whom? Who pays for these new services? How do we ensure that individuals, companies and institutions -- in short all citizens -- will have access?

1. The access trilogy

Successful and meaningful participation in the GIS, for both individuals and countries, is founded upon the key factor of access. Without the full participation of a broad cross-section of individuals, companies, institutions, business and governments the full potential benefits of the GIS will not be recognised. There are three basic aspects of access of interest to policy makers which we might label the "access trilogy". These are :

- physical and technical access to products and services;
- affordable access to information networks and indigenous content;
- education, skills and aptitudes appropriate for citizens' access.

The current gaps in levels of access between elites and ordinary citizens within counties, and between the developed and developing countries are cause for concern. One of the roles of government is to balance fundamental social and democratic values and principles with economic and commercial interests: private gain with public interest: commercial development with citizen participation.

On the one hand, policy makers and regulators must encourage the development and dissemination of new technologies and support their wide adoption to assist economic growth and ultimate job creation. On the other, they must support basic social and democratic values and principles, and facilitate broad levels of citizen participation through multi point access to the GII. This would ensure that all those who wish to seek the benefits of the GIS, are able.

1.1 Physical and technical access to products and services

The penetration of information and communications technologies (ICT) in Canada is among the highest in the world and reflects our tradition of excellence in, and universal access to, communications productions and services. A study released in the Spring of 1996 found that, based on 1995 data:

- 98.5 per cent of households had telephone service;
- 99 per cent of households had at least one radio and at least one television
- 73 per cent of households had computers (a 12 per cent increase from 1986), and 71 per cent of those households subscribed to at least one pay or speciality service, 87 per cent extended basic (high penetration, low-cost discretionary tier).

The exposure people have to computers and networks at home and work also yields some interesting statistics:

- 29 per cent of households had computers (almost 3 times the number in 1986), and of those, 42 per cent also had modems;
- one in five Canadians has access to the Internet from home, school, or work; and 54 per cent gained their access from school or work;
- 84 per cent of Canadian small businesses use computers;
- 56 per cent of Canadians reported being able to use a computer in 1994;
- 48 per cent had access to a computer at work.

This looks very reassuring. However, a deeper analysis of the penetration data from several studies reveals the following profile of participation:

- High income produces much greater participation levels
  - -- Cable penetration varies from 64 per cent in the lowest income quartile to 82 per cent in the highest.
  - -- Computers are in the homes of only 12 per cent of households in the lowest income quartile, and 50 per cent in the highest.
- Urban residence ensures better access
  - -- 30 per cent of households in urban areas have computers, 22 per cent in rural areas.

-- 44 per cent of urban area households with computers have modems, versus 29 per cent in rural areas.

- Advanced education strongly affects participation

  -- Computers are present in 9 per cent of Canadian households with less than nine years of education, 26 per cent among high school graduates, and 56 per cent of those with a university degree.

  -- The gap is widening. Over the past decade, among households with university education, computer ownership increased 36 per cent, compared to 5 per cent increase among those with less than nine years of education.

- Being older affects participation

  -- Traditional technologies -- *telephone and cable television* -- have significant penetration in households over 65.

  -- Cable television penetration *is highest in households over 65* in all income quartiles.

  -- New technologies -- *computers and modems* -- have significantly lower penetration. Computers are present in only 11 per cent of households aged 65 and over, compared to 38 per cent in households aged 35-54. Modems among computer owners are highest in households with heads aged less than 35.

Canada's "wired" are mostly young, and very affluent persons, with lots of education, living in big cities, and strong believers in the benefits of applied technology.

- Youth and the education system together also impact computer penetration. Computer penetration in households with children under 18 was 40 per cent versus 28 per cent for single family households without children.

1.2 Affordable access to information networks and indigenous content

The profile outlined above leaves certain Canadians. Access is much more limited for members of smaller communities and rural areas, particularly remote northern communities, and for specific groups including francophones and minority communities. This underlines the importance of affordable access to information networks and indigenous content. Other factors currently limiting physical and technological access include financial resources, geographic location, and skills and knowledge. This second element of the trilogy is particularly critical if we consider people not just as consumers, but as citizens.

Interestingly, the rate of Internet access and participation in Canada has increased over the past year. This suggests that Canadians are finding ways to participate in this new way of communicating, if not from home, then through their jobs, public institutions, or multimedia kiosks in private or public locations.

Consumers want choice and quality in products and services at an affordable price. But market forces alone cannot guarantee this, at least not in Canada. It is particularly difficult for our remote Northern communities, francophone population, and minority communities. Regulatory and policy safeguards should be considered to ensure that our citizens can afford to get basic service. Successful and meaningful participation depends upon it. Indeed, there are a number of regulatory public proceedings

underway in Canada to address these and related issues (http://www.crtc.gc.ca). Canada also has a number of initiatives to facilitate access to the Internet, such as SchoolNet (http://www.schoolnet.ca) and its Community Access Program (http://cnet.unb.ca/), to mention but a few.

1.3 Educational skills and aptitudes appropriate for citizens access

Do people have the know-how to work constructively with the Bitstream? If our objective is to uphold only consumer values, the market will probably solve the issue of making specific technologies simple enough for on-line shopping and ordering movies. However, if we want to uphold the values of citizenship, which include voice and participation, rights, opportunities and access -- and freedom from access -- then mechanisms and frameworks to ensure equity must be developed.

In order for citizens to participate in the GIS, much more than rudimentary "computer skills" are required. It is necessary to possess the skills and abilities to create, distribute, and use digital technologies and their content. More fundamentally, this also includes literacy and lifelong learning required to live in the information age. We refer to this bundle of survival skills as "digital literacy skills".

Citizen participation in market society includes economic participation -- with the ability to enter and compete in the labour market in order to draw on its benefits. Different levels of access to information technology and to the benefits of the information society are already creating "haves and have nots". Without countervailing measures these differences will further stratify society.

2. Issues to be addressed for the GIS

2.1 What are the responsibilities of the individual?

Another means of facilitating participation is to ensure that citizens see themselves and their social values reflected in the content (products and services) available through the infrastructure. With rights come responsibilities and the individual too has certain obligations. While it is important to become technologically literate, this must be done using appropriate codes of behaviour which can be thought of in terms of a "user's code of ethics" that informs how we treat our "neighbours" on the information highway. Respect for a person's right to privacy is fundamental to the democratic notion of autonomy and self-determination. As Canada's Privacy Commissioner has noted: "The limits of our personal privacy determine in large parts the limits of our freedom".

Only if we have some measure of control over what the world knows about us can we hope to preserve private life in the information age. For the sake of privacy protection, one can only hope that there will be "do not enter" signs on the information highway.

Cultural and linguistic diversity of content is, as suggested in the GII-GIS Statement of Policy Recommendations, a vehicle for education and information which will facilitate and accelerate the broad adoption of new technologies. Diversity of content is also essential to the creation of demand which will also stimulate investment and open vast market opportunities.

2.2 What should be the role of government?

In the OECD Statement of Policy Recommendations, endorsed by the May 1996 OECD Ministerial Meeting, the OECD suggested that the role of government should be "catalytic". Government should be a strategic force acting in partnership, and with a long-term vision to promote investment, R&D, training, and international co-operation to ensure that a vital and healthy industry is encouraged.

However the idea of government activities as “catalyst” should also extend to its role in promoting and preserving cultural and social values. Government has a unique role to play in the GIS -- and it is not an easy one.

Government must use the range of measures at its disposal -- policy, regulation, support -- to facilitate the creation of a self-sustained, dynamically competitive market for the provision of products and services, and the development of indigenous content. Government must ensure that the GIS will enhance quality of life, permit full participation, and reflect our diverse cultures and identities.

The GIS is emerging incrementally around the world -- no where is it arriving fully developed and ready to “plug in”. All countries, as was demonstrated through the Information Society and Development Conference (ISAD), are in some phase of transition. It is the role of government to provide the leadership and take responsibility for ensuring that economic, cultural, and social values, and rights are upheld and promoted. Market forces alone are unlikely to address issues of universal access, inappropriate content, diversity, and lifelong learning, among others.

Fortunately, this dual role of government in addressing both citizen and consumer values is not entirely inconsistent. While access may appear to be a social issue -- if examined from an economic perspective -- it is also an economic trigger to support and create demand for both technology and content.

The Canadian government issued its action plan for the Information Society in May 1996, entitled: “Building the Information Society: Moving Canada into the 21st Century”. The action plan has four major thrusts:

- Building Canada’s Information Highway -- creating competitive, consumer- driven policy and regulatory environment in accord with public interest and conductive to innovation and investment;

- Growing Canadian Content -- to strengthen our national cultural dialogue and create economic growth and jobs;

- Realising the Economics and Social Benefits for all Canadians -- through maximising access and full participation;

- Getting Government Right -- ensuring better services, and more affordable, accessible, and responsible government, and making government an model user and catalyst.

2.3 How are the G-7 Principles to be implemented?

It is the actions of governments, individually and mutlilaterally, which have created and defined the discussion of the GIS. Through the creation of the G-7 Principles adopted first in Brussels in 1995, and later endorsed in spirit by APEC and ISAD, and the commissioned work of the OECD on the GII-GIS, that discussion has moved beyond the infrastructure alone towards consideration of the full range of social, cultural, and economic impacts of technology. It is also with leadership of governments in creating a facilitating environment that these principles will be realised.

In Canada, work is currently underway to address the realisation of the G-7 principles. Initiatives include the development by 1997 of a National Access Strategy by the Minister of Industry involving policy, regulatory, and other measures to ensure affordable access by all Canadians to essential communications services. Over the same period a comprehensive Canadian Cultural Content Strategy will be elaborated to encourage innovation, jobs, growth, and accessibility to the wide range of content.

2.4. How can performance indicators for the GII-GIS be developed?

It is broadly agreed upon by experts from Drucker to Negraponte, that we are experiencing an information revolution which will fundamentally alter the factors and forces of production. Technological convergence is altering traditional value chains, creating a new economy of bits (the Information Economy) to replace our economy of atoms. The impact of convergence and the dissemination of ICT throughout the entire economy and society must be captured and measured in order to be understood and supported appropriately. Frameworks must be put in place, as is suggested in the GII-GIS Policy Statement, which will provide policy makers with a meaningful and internationally comparable assessment (e.g. through indicators such as supply, demand, trade, R&D, employment) of the development and performance of the Information Society in order for a truly Global Information Society to emerge. Canada was pleased to table with the OECD in May a suggested approach in our report "Measuring the Global Information Infrastructure for a Global Information Society" and hopes that it will provide a basis which to develop a common framework.

2.5 Next steps -- putting the framework in place

Access, in our view, is the essential foundation for a successful GIS -- the need for further study of what this will mean has been recognised in Canada and by the OECD. Global approaches are needed to identify and quantify the interest we have in promoting citizen values for the evolving GIS.

The OECD and its Member countries are well placed to conduct the research and analysis necessary to examine and monitor the implementation of the G-7 Principles of the GIS. Indeed, the OECD workshops held over the past year, the Statement of Policy Recommendations, the creation of a Statistical Panel, and the ongoing study on the GII-GIS are important steps in advancing our knowledge and international co-operation. It is critical that efforts begin today to identify and analyse the longer-term issues -- and to provide collective policy advice.

Affordable access, privacy, control of violent and offensive content are issues central to the notion of protecting the individual in the information age. Effective citizenship depends upon the extent to which all citizens can create and have access to the content they need to participate in their communities, both local and global. Our concept of the information society must rely, not simply upon technology, but on a human model that recognises individuals' rights and responsibilities as citizens.

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(Session 2)

AN INFORMATION TREASURE: SOME IMPLICATIONS OF INFORMATION AND COMMUNICATION TECHNOLOGIES FOR GOVERNMENT INSTITUTIONS

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The Dutch government policy with regard to the Electronic Highway and the implications for the public sector are the main topic of this paper. The focus will be on the wealth of information that is at the disposal of the government and government institutions. Accessibility of this information is a central issue and has far reaching implications for democratic control and for the performance and efficiency of public services. There are high expectations because people expect that information and communication technologies will improve the accessibility of government information. Most issues with regard to accessibility of government information however are not new. In essence, this issue will not change due to the emerging new technologies such as Internet, call centres, electronic locator systems and so on. However, there is a general feeling that these new technologies might offer new possibilities that are worthwhile to pursue and have consequences that are worthwhile to investigate. The concept of Electronic Highways defines the agenda of many governments. Not only because it is expected that it will stimulate economic development at national level, but also because it might have implications for democratic and administrative processes.

In this paper I will therefore deal with the following questions:

- How can accessibility of government information be conceptualised?
- What are the implications of accessibility of electronic government information for the democratic process?
- What are the implications of accessibility of electronic government information for public services?

Apart from a clear conceptualisation of accessibility of government information, it is essential to make a distinction between the role of information in political and democratic processes and in service processes. The implications for both are rather different and their impacts on the emerging Electronic Highway differ. Not only because information in policy-making process and decision making is of a different nature than the information that is essential in the service process.

The discussion of these implications will be based on the results of a research project commissioned by the Rathenau Institute, the Dutch Technology Assessment Office. This research project, together with a study that deals with legislative issues of the accessibility of government information and three expert workshops, served as input for advice to the Dutch parliament.

The concept of accessibility

The concept of accessibility is approached from a user perspective. Dimensions of accessibility are:

- Attainability. Attainability relates to technological and financial aspects of accessibility.
- Comprehensibility. This concept deals with both the content and the format in which the information is presented.
- Timeliness of information. The time dimension refers to the moment at which the information is made available in order that the information may serve the goals of the citizen.
- Usability. Information is important for attaining certain goals or for certain groups within society.

In general all these aspects deal with the match of the supply and demand of information. Information and communication technologies strongly change the traditional value chain of information provision if this information is made electronically available by government. The citizen can no longer be considered as passive and dependent on information provided by government. The citizen now has the opportunity to actively consult government databases looking for information that fits his (or her) needs. The user decides what kind of information is important to him. The control of the process of information provision shifts from the supplier to the user of information.

The consequences of this changing perspective will be discussed from the perspective of (electronic) publishing of government information in general, and for democratic processes, and for public services in more detail. Our research shows that the most interesting changes will take place within the last domain: public administration. This changes may have more impact for the public at large than changes in the other domain (democratic processes).

With regard to the electronic publishing of government information, parties both within and outside government are capable of dealing with this issues as long as clear demand for government information exists. Problems that exist are mainly organisational in nature and have to do with the governments' role in commercial markets.

At this moment experiments with information and communication technologies in democratic processes shows that a new cyber-elite dominates discussions and that neither government administration nor political parties are equipped to deal with this modern fora. Although potentially there might be possibilities to integrate electronic hearings in the policy- and decision-making process, there is no democratic or juridical basis for it yet.

The accessibility of electronic government information is more problematic in the area of public service. Citizens are looking for information that is directly related to their own situation. By improving the service level of government by means of information and communication technologies, for instance in the field of taxation, the use of these technologies by citizens will be stimulated. Dilemmas and topics such as information and control, product or process innovation redesign of processes within government, outsourcing and empowerment have to be dealt with as the Electronic Superhighway comes closer.

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(Session 4)

SYSTEM OPERATOR LIABILITY

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Owners and operators of networked computer systems connected to the Internet currently face a wide variety of potential legal liabilities. These risks arise not only in relation to the system operator's acts and omissions, but also from the acts and ommission of third parties who use the system to harm or damage others. This paper reviews the current state of system operator liability issues under US law, including updates on defamation, copyright infringement, privacy violations and liability for sexually oriented material. Particular emphasis is placed on recent judicial opinions which are beginning to carve out the parameters of this evolving area of the law, as well as on an exploration of the impact that liability doctrines have on the economic models of cyberspace.

APPLICATIONS OF INFORMATION TECHNOLOGIES (IT) IN THE US FEDERAL GOVERNMENT: ISSUES AND TRENDS

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Abstract

National governments, including the United States Federal Government, have long held important roles in fostering and implementing new technologies. The importance of these roles has varied over time and from one technological innovation to the next, but includes such areas as research, support for development, and government policies aimed at the diffusion of a new technology. As government has grown in importance, its role as an end-user of new technologies has taken on added importance as well. This has manifested itself in such ways as the impact on technological advances through the power of government purchases (such as the growth of the semiconductor industry through Department of Defence purchases) and the development and initial use of new technologies (such as innovative ways of distributing information through Internet).

The latter examples underscore the fact that government has been as important in many ways for information technologies (IT) as it has been for "traditional" technological development and diffusion. This is evident today in numerous respects, such as standards setting and the stimulative effects of government purchases.

When it comes to applications of information technologies, however, government's position must be examined in additional respects. This includes the government's position as a buyer and user of new technologies, not as a promoter of technological development or diffusion.

The US government's position as an end-user must be addressed not only because of the impact of its purchasing power, but also because of its particular needs, customers, and implementation problems. Needs include (1) consistency and compatibility -- in both the sense of technological compatibility and jurisdictional compatibility; (2) the ability to serve a diverse customer base, ranging from small businesses and the disadvantaged to large corporations and the affluent; and (3) the capability to meet individual government agencies' missions, while assuring effective transition to next-generation technologies that will enable enhanced service to those constituencies. These conditions affect the ability of the Federal government to implement new information technologies.

Conditions peculiar to the Federal government may result, in fact, in a situation in which it trails the private sector considerably in the effective implementation of new information technologies. It is ironic that many steps taken by the Federal government have enabled private industry to utilise new information technologies to further economic growth and technological development. In the application of these same information technologies, however, government may well lag far behind industry due to a number of factors, including budgetary battles, inexperience and/or technical limitations of government managers, and practices/policies that impeded rapid and effective implementation of new technologies. This could have a significant impact not only in policy terms, but in the ability of government to deliver high quality, responsive services to the public.

(Session 3)

THE SCOPE OF COPYRIGHT LIABILITY OF ON-LINE SERVICE PROVIDERS: KOREAN AND INTERNATIONAL DEVELOPMENTS

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The advancement of the information society accompanies digitisation of copyright works. 'Digitisation' causes many problems for the existing copyright scheme, which has the concept of 'fixation' as its basis. Works created on-line, including PC communications and Internet, are made up of bits which are, in some sense, fluid. This change has not only blurred traditional concepts of copyright but also weakened people's obedience to copyright in the digital environment.

Digitised materials may be reproduced in multitudes and with the same quality as the original. The most highlighted problem these days is the unauthorised copying and distribution of commercial software through on-line networks.

Fighting against the growing number of incidents of flagrant copyright infringement in the digital environment, states and international bodies are hastening to prepare counter-measures. The Korean Government amended its Computer Program Protection Act last year to include a provision prohibiting the distribution and transmission of software programs over on-line networks [Article 23(3)].

Commercial operators are well aware of the fact that the present legal system prohibits them from copying on-line works. However, children and young students are unaware of the consequences of the reproduction and transmission of copyrighted works. Moreover, they don't have financial ability to compensate possible losses caused to the copyright owner. Social consensus is beguning to form that on-line service providers should take some responsibility for the unlawful acts committed by subscribers using their on-line networks.

This paper first overviews recent Korean and international developments relating to the liability of on-line service providers for copyright infringements committed by a third party using their on-line networks. It then proposes certain criteria for rights and duties of on-line service providers to suppress copyright infringement on networks.

(Session 1)

CHANGES IN THE PROCUREMENT PROCESS AND THEIR IMPACTS: "GOVERNMENTS AS SMART BUYERS IN THE GIS"

Georges Ferné, Principal Administrator, OECD

The governments of OECD countries devote increasing attention to the emergence of the Global Information Society (GIS) as a result of the rapid dissemination of Information and Communications Technology (ICT) tools throughout society. Economic consequences due to impacts in the private sector on management, transactions and design of goods and products are in particular expected to have far-ranging implications. Many public agencies have already adopted new procedures based on electronic formats and adjusted their internal operations and relations with their constituencies. Many more, however, still lag behind.

Computerisation of governments is necessary for four reasons:

- It is unthinkable that public bodies should continue to deal with the public using procedures far removed from practices that will become commonplace in the current business environment.

- Computerisation provides a strategy to begin to address the dilemma all cost-conscious governments face to-day of reducing public expenditures while safeguarding high-quality standards in public services.

- It is an effective policy instrument for promoting diffusion and adoption of ICT throughout the economy and society and thus achieving competitive gains at national level.

- It provides new tools to provide more accessible or better information and services to citizens -- indeed in some cases to develop services that could not otherwise be delivered.

ICT will, however, have a tremendous impact on the management, processing, and accessibility of information (e.g. land use registries, public pensions, etc.). Various applications will make administration more interactive and allow services to be tailored to individual needs and capabilities. Special attention needs to be devoted to key sectors involving delivery of services of complex and diverse forms of interaction with the public, such as education, health care and local government, which, in view of their rising costs and the prospective benefits of ICT applications, are obvious candidates for serious computerisation efforts.

New challenges for public procurements

One goal of government use of ICT applications is gains in effectiveness and efficiency of operations and services. Governments, however, cannot ignore the fact that computerisation of public services is likely to influence the adoption of the new technologies throughout society: they rank among the largest users of ICT in any country, to the extent that their technological choices have a large impact

on the market and affect decisions throughout the economy. Procurement procedures that favour low-priced solutions at the expense of more advanced technologies or that ignore the need for interconnectivity can be harmful for national competitiveness.

Public procurement will in particular affect competition among suppliers of equipment and services so that public agencies should be encouraged to define their needs in consultation with private sector users. One important new goal needs to be to encourage creativity and technological diversity rather than act as a cost-cutting mechanism for government agencies. The day-to-day operation of procurement policies should also express the high priority attached to interconnectivity and interoperability in the development of the information infrastructure and thus uphold international standards.

The computerisation of government services (customs, fiscal operations, social security, land-use management, city planning, etc.) will normally lead to the establishment of telecommunications networks with various public and private partners. The longer-term trend should be towards the establishment of a paperless environment. In some Member countries, this has been the case in customs, for example, where large productivity gains have been achieved while coping efficiently with expanding trade activities.

More generally, the computerisation of government services can provide the impetus for computerisation in private firms, for which adoption will be less costly and the perceived risks of adoption significantly lower in light of public agencies' commitments to specific technological solutions. Governments can initiate major changes for the delivery of services by promoting the use of ICT applications and networks for storing, processing and transmitting many types of data in many sectors, ranging from customs and taxes to the medical sector.

Government computerisation, on the other hand, should not lead to inappropriate purchasing to favour specific firms and distort competition.

Another issue of growing importance relates to the scope of procurement activities: what should be developed within government and what should be outsourced ? Decisions made in this respect may have significant influence on the development of an industry (such as segments of the software industry) within a given country.

As a rule, government agencies should outsource ICT applications and software. In-house development should only be chosen when other sources are not available and should then be subject to the same requirements (advanced technologies and internationally recognised interoperability standards) as procurement. Government agencies should avoid competing with private firms by offering ICT software and applications for sale on a commercial basis.

Towards new frameworks for procurements

The major implications of procurement activities in the electronic age thus raise difficult issues that will affect the traditional concepts and implementation modes in this area. Taking account of the potential impacts of their decisions, governments need to become "smart buyers" in a new context, to acquire the advanced technologies they need, to benefit from -- and even contribute to strenghtening -- market-driven competition, and foster innovative approaches. In this light:

- Investment decisions relating to ICT by public agencies should always be preceded by “make or buy” assessments.

- Procurement activities should be largely based on competitive bidding by suppliers in order not to distort market operations and favour innovative approaches.

- Procurement activities will often need to become less sensitive to short-term costs and take account of the longer-term benefits of some technological choices, in particular when migration to new solutions better tuned to market developments imply sizeable investment.

- They must be more closely co-ordinated horizontally throughout the government administration to promote interconnectivity and interoperability.

- For the same reasons, the private sector will need to be more directly involved in the definition of strategic objectives.

Balanced and creative involvement of government agencies in the international standardization process. As users of the technology, public procurement agencies will need to co-ordinate more systematically.

(Session 2)

IMPACT OF THE EMERGING INFORMATION SOCIETY ON THE MANAGEMENT OF INFORMATION BY GOVERNMENTS IN THE POLICY DEVELOPMENT PROCESS AND ON THE QUALITY OF DEMOCRACY

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The objective of this paper is to describe how selected OECD governments are changing their information management policies in the light of the emergence of "an information society"(IS), to identify the impact of these changes on the policy-making process, and to discuss some of the issues these changes raise for the conduct of democratic government.

The "new technologies" considered are:

- faxes;
- mobile phones;
- the Internet (including e-mail, web pages, policy user groups, and "Intranets" [internal or local area networks]);
- touchstone data entry;
- interactive voice response;
- video conferencing;
- CD-ROM's.

Impact of IS on the policy process

It is useful to look at government management of information in the policy process through the optic of the changes in behaviour induced by the new technologies in the various players involved in that process. This approach sheds light not only on how governments manage information in relation to each player but also on how the players are adapting their strategies and tactics with the advent of the IS and the new technologies.

There are many players involved in a government's policy process. The paper examines the media, interest groups, lobbyists, legislators, the general public, and public servants. First, the role each currently plays, the technologies now used, and how this role is affected by the IS is examined.

Then consideration is given to how the government (the political executive) manages information in the policy process, how this is affected by the IS, with particular focus on how the IS is affecting information management and relations with the various players.

Throughout there is focus on the two broad dimensions of information policy -- the gathering and dissemination of information for policy purposes.

Also examined briefly is the role of Freedom of Information legislation in policy and democratic development.

Impact of the new technologies on governance: the relationship between citizens and their government

Governments are focusing first and foremost on the competitive/commercial benefits of the new technologies, and within their own areas of responsibility, on the efficiency of delivery of governmental programmes and services. Any democratic benefits are a third and significantly lower priority.

There are two broad views of the impact of the new technologies on the quality of democracy. First there are the technology optimists who see the new technologies not only as easier and faster methods of communication, but qualitatively better -- holding out new ways of existing, working, and communicating.

The other view is less optimistic, maintaining that changing behaviour patterns is a slow and problematic process.

. To try to come to at least a preliminary judgement on this question, some of the major touchstones of democracy are examined. These include participation in the policy process, accountability, the credibility of the government, freedom of association, and the treatment of minorities.

Conclusion

We are in a period of transition where the IS and the new technologies on which it is based are feeling their way into the paper-based and oral worlds of policy and governance.

The new technologies have many strengths:

- speed;
- informality;
- relative ease of access;
- targetability;
- relatively inexpensive.

At the same time, a number of powerful factors militate against their significantly changing the *status quo*.

To date the new technologies and the emerging Information Society have had little impact on either the policy process or the quality of democratic governance. In effect governments are running parallel paper and electronic systems simultaneously. However, there is evidence that several major players in the policy and democratic process are being influenced to a greater degree and changing their *modus operandi*.

It remains to be seen whether governments will adapt of their own volition or perhaps be forced to change.

(Session 2)

ICT USAGE AND RESTRUCTURING OF THE GOVERNMENT

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It is necessary to re-engineer internal administrative processes and procedures to ensure the transition of raw information into an information product that fulfils the needs of the citizens. The re-engineered process should ensure a more timely valued product and at less cost."[4]

> *Who are the most important stakeholders in these information products? Who are the direct and indirect users of the knowledge produced? How can we use the new knowledge in both political and public management to manage and understand change and the effects of the restructuring process and ensure that political objectives are met?*
>
> *How to create acceptance and confidence in that better managed policies do not mean more control of citizens, but rather improved transparency and better democratic control of resources and "real time" information on the effects of political priorities and decisions?*

I will discuss these questions by presenting two cases related to financial management which are under development and implementation in Norway and discuss differences, similarities, approaches and critical factors. Hence I will not specifically discuss all the changes taking place due to ICT, but rather discuss the general need for information, knowledge and political management when restructuring and re-engineering of government is taking place. I will try to show how the management conditions may be improved through better information systems. We may call those systems "change management systems" to monitor effects and side effects of change in policies, create an environment for "benchmarking" governmental bodies and find new ways of sharing innovations in public management. Such "change management systems" are essential both today and especially when we transform our society by increased usage of ICT.

Introduction

Although financial management related to political objectives and decisions is a key issue in the two cases I discuss, there are some important basic differences:

- The first case is related to management of the central government budget decided by our parliament and managed by the 14 ministries and their subsidiaries and as such a part of the central government "line organisation".

- The second case is related to management of budget of the 435 local municipalities and the 19 regional municipalities ("fylkeskommuner") and reporting of results and use of resources to central government on tasks delegated to this level: public services such as education, health and social services, child care, regional planning. As such it may be regarded partly as a subset of the first case, but as information systems they are totally independent. Another important difference is that all the municipalities are both politically and organisationally independent from the central government and are democratically governed locally. This

means that differences between municipalities may be the result of different political priorities and different organisation of service production.

In the first case the main stakeholders are all the members of our parliament, the ministries, departments and all their agencies. The public will not be a direct stakeholder, but media is expected to be an interested party. In the second case there are additional stakeholders. First all local and regional politicians have an interest in how they perform. In addition, since most of the public services are produced and delivered at the municipal level, all citizens are affected and may be interested as engaged members of our democratic society.

My study is concentrated on these two cases and not (yet) directly related to relevant theoretical work. A development of the study should be made to put the case study into a wider framework.

Conclusions

The restructuring of government should be brought about as a response to needs in society, and not as a response to technological needs. ICT is a major tool which gives the means to transform the society at all levels. Utilising ICT on a broad scale will bring about changes in: mode of operation; structures and information flow; administrative processes and how services are produced.

The two cases I have discussed contribute to one of the most critical political questions of today: how to manage the transition from a traditional to an information economy, from an industrial society to an information and knowledge society, and during the transition how to maintain and develop further the welfare society for all in the information and knowledge age?

These systems may monitor change and reflect how political decisions are carried out and give important information on whether the expected results are obtained or not. The cases are examples of efforts to build complex systems for political and administrative management. Users at all levels -- from politicians to deputy directors to accountants -- should experience advantages. Common use of information creates user communities, where each member has a role to reach own, common and others' objectives.

It is important to identify critical success factors when major systems are being implemented. Both the approach, the use of support functions and the role of standardization may be critical. Some factors in the cases I studied:

- The approach has not been top-down, but bottom-up, through formulating common general functional requirements based on user needs, requirements which are refined and used as a basis for design and implementation for many different local configurations.

- Strong user involvement in design and implementation is a key factor when building systems involving a large and heterogeneous group of users, and pilot implementations are necessary to find the best solution.

- The requirements will be published as open governmental voluntary standards and give guidance to system vendors, purchasers and users when developing, buying or implementing the systems. This way users and their organisations could rather be regarded as a market for the system rather than users which are left with a single solution.

- It would probably have been impossible to build such complex systems for independent bodies at different political and administrative levels without the combination of consensus building, new common rules, common requirements and support functions for implementation.

Through strategic and common use of more up-to-date management information, politicians and government will hopefully have a better background for decision of making and be able to react faster and more adequately in different policy areas in changing conditions -- conditions which may change faster than ever. Change management in politics will probably be the big challenge of the next century.

(Session 1)

THE G-7 GOVERNMENT ON-LINE INITIATIVE: A REVIEW OF PROGRESS AND PROJECT STATUS

Michael Harrop, Treasury Board of Canada Secretariat, Canada

Introduction

The Government On-Line Project is one of eleven collaborative Pilot Projects launched by ministers from the G-7 countries under the Information Society Theme in February 1995. In this paper we present some background information on the G-7 initiatives in general and the Government On-line project in particular, provide an assessment of progress to date and problems encountered, and discuss the possible involvement of the OECD.

Background to G-7 Information Society projects

At the Naples Summit in July 1994, G-7 leaders agreed to "encourage and promote innovation and the spread of new technologies including the development of an open, competitive and integrated world-wide information infrastructure." A follow-up ministerial conference in February 1995 identified 11 information society pilot project themes which are intended to demonstrate the potential of the information society and stimulate its deployment. The Government On-line (GOL) project is one of these projects.

Objectives of the Government On-line project

Many administrations around the world have embarked upon renewal initiatives, a major part of which involves trying to reduce the cost of government while improving the level of service (or at least without reducing the level of service). Although initiatives may have begun independently, there are many common themes. The primary objective of the GOL project is to investigate the scope for a significant increase in the use of on-line technology to transform government so that, by the turn of the century, most administrative business will be conducted electronically. In particular, the project is examining three main themes:

- the development of on-line transaction processing for the support and delivery of routine services;
- the provision of fully interactive, on-line services to allow the public both to obtain and provide information from a variety of locations including the home; and
- the replacement of paper-based mail by electronic mail, not only within government itself but also with the public.

In developing these themes the project will focus on making appropriate government information widely available, improving service to the public, facilitating information exchange between governments, and reducing the number of paper transactions involved in government operations, all of which will help to achieve a reduction in the resources required for these activities, thereby reducing the burden on the taxpayer.

With the GOL initiative we have the opportunity to collaborate to try to achieve the objectives of the individual administrations, to reduce duplication of effort and cost of implementation and to speed up the entire development and implementation process.

Participation

The G-7 GOL project has attracted the participation of administrations from all G-7 countries, the European Commission plus a significant number of non-G-7 countries. Total participation now extends to 20 administrations.

Progress and achievements of the project to date

In July 1996, to mark the 15-month point of the project, the co-chairs compiled a report to provide a review of the current state of the project in terms of both the progress made and the factors that could inhibit progress in the future. While the project has clearly achieved some significant results, there are a number of obstacles to be overcome if the project is to achieve its full potential. The major problem at this point is lack of resources.

Opportunities for G-7 GOL/OECD Collaboration

There are a number of issues in the key objectives of the G-7 Information Society projects that clearly fall within the sphere of interest of the OECD. We in the Government On-line project believe that collaboration between the OECD and the GOL project would be beneficial to both sides. From a GOL standpoint, there appear to be a number of possible areas in which OECD participation could make a significant difference. Direct OECD participation in some of the individual sub-projects would certainly help alleviate some of the commitment and resource problems. It could also be beneficial to the OECD to help us communicate/deliver some of the results of the GOL sub-projects to the developing countries. From an OECD standpoint it could well be useful to pursue some of the economic issues that are outside the remit of the G-7 Information Society projects. These could include evaluation of the pilot project from an economic standpoint, for example, examination of the project to assess the opportunities for associated commercial services and quantification of the economic and social impacts of services covered by sub-projects.

Summary

The G-7 Government On-line initiative offers the opportunity for significant and highly beneficial collaboration between administrations in implementing IT renewal initiatives to improve service to the citizen and lower overall administrative costs. We invite the OECD to participate with us in helping to bring this about.

(Session 3)

OECD WORK ON CRYPTOGRAPHY POLICY GUIDELINES

Hiroko Kamata, DSTI/ICCP, OECD

Needs for cryptography and issues

1. Functions of cryptography

Cryptography is a powerful tool for protecting information, which uses a mathematical algorithm to scramble digital information. Cryptography provides the following functions for transmitted or stored data:

- confidentiality for data and communications ("encryption"): scrambling data so that no-one can read it, thus providing "privacy", and secrecy for confidential data;
- authentication of data and communications: proof of identity of sender or author;
- integrity of data and communications: proof that no-one has modified the data;
- non-repudiation of data and communications: mechanism for preventing the sender or recipient from denying the transmission or the receipt of the message or its contents.

Because of these functions, cryptography is an essential component of tomorrow's Global Information Infrastructure (GII) and Global Information Society (GIS).

2. The importance of cryptography in the development of the GII/GIS

The GII comprises, in essence, facilities that provide communication and information "on demand" in any form. For example, in ten years' time you may have a multimedia terminal which will merge telephone communications with cable television broadcasting and computer information exchange; all of which will be digital. Orders, purchases, payments, and money transfers will be made electronically using such systems.

However, there will be risks in these processes. On the GII, operations will be at a distance with no physical clues that permit identification, making impersonation easy. Perfect copying and undetectable alteration of information is also possible. Cryptography will be a critical tool that helps people and society to address these concerns.

An example of the use of cryptography in the GII/GIS is electronic commerce. Sellers want an enforceable electronic contract, and buyers want to pay for their purchases electronically: the cryptographic techniques can accomplish both of these ends. Digital signature can provide authentication in an electronic environment, where visual or physical identification is not possible; it can also ensure that a contract has not been altered. Cryptography can also be used for electronic payment mechanisms.

In order to ensure that authors continue to contribute high-quality information content to the GII/GIS, there must be mechanisms in place to protect their work: cryptography can also be used in this way. Digital signature can give authors some control over their speech, because digital signature on an electronic document ties the document to the issuer and ensures that the document is not modified.

3. Importance of encryption to protect privacy in the GII/GIS

Effective cryptography is also an essential tool for protecting personal privacy and confidential data in the GII/GIS. Privacy is at risk in the GII/GIS because neither the Internet nor many types of internal office networks were designed with communications confidentiality in mind. The use of encryption can ensure that data remains confidential.

Another privacy concern centres on the increasing amount of personal data which is stored electronically for a variety of administrative purposes, including information held by banks, insurance companies, employers, hospitals and governments. Governments may require that this data is stored in encrypted form to protect its confidentiality.

4. Needs for access to encrypted information

However, there is a public interest in third party access to encrypted information. Encryption can be used by criminals and terrorists to hide evidence of their activities. In most, if not all, countries, a law enforcement agency can seize evidence of crimes, including stored electronic evidence. As more and more documents will be created and transmitted electronically with development of the GII, law enforcement agencies could effectively lose the ability to conduct most searches and seizures, greatly hampering law enforcement. Also, in those countries that permit interceptions of communications with a legal authorisation, law enforcement agencies will lose the ability to wiretap.

The need for third party access is not limited to governments. Private parties, such as heirs, may need access to encrypted information, in case someone dies leaving encrypted information but no key to decrypt it. Therefore, appropriate mechanisms for lawful access to encrypted information should be considered.

5. Needs for balancing legitimate various interests

Privacy protection and public interests like public safety and national security are all important and legitimate interests. Governments and societies will have to address how these interests must be balanced in the GII/GIS -- should electronic privacy be absolute, and if not, how should other public interests be accommodated?

II. International policy co-ordination on cryptography and the role of the OECD

1. Urgent need for international policy co-ordination

It is important to address questions relating to the use of cryptography in the GII on an international basis. The GII is, by its name and nature, global, and jurisdictional boundaries are difficult to enforce. Efforts by a single national government to regulate the use of cryptography may be ineffective, counterproductive and impair international trade. Therefore, cryptography policy should be approached in an internationally co-ordinated way.

The OECD is well positioned to play a central role in developing instruments to facilitate internationally harmonized cryptography policy making. OECD membership encompasses North America, the Pacific region, and Europe. The citizens of OECD Member countries are the primary developers of the GII/GIS.

2. Experience in developing OECD Guidelines

The OECD has experience in developing guidelines in the area of information policy. Two important OECD Council Recommendations have been enthusiastically received by Member governments and the private sector: the 1980 Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, and the 1992 Guidelines on Security of Information Systems, both of which relate to the uses of cryptography.

The OECD has carried out, under the auspices of the Committee of Information, Computer and Communications Policy (ICCP), work on cryptography technologies and policies since 1989, including organising the Ad hoc Meeting of Experts on Cryptography Policy, and the Business and Government Forum on Global Cryptography Policy, both in December 1995.

3. Drafting Cryptography Policy Guidelines

As the critical element of cryptography in enabling the GII/GII gained public prominence, the ICCP Committee created a group to draft the Guidelines on Cryptography Policy, which could serve to assist decision makers in developing and implementing coherent national and international policies for the effective use of cryptography.

The Group held meetings in May, June and September 1996. The members also exchanged comments, by electronic mail and fax, between meetings, to revise the draft Guidelines.

The discussion in the Group involves government representatives, including the representatives from ministries of industry, telecommunications, justice, police, national security, foreign affairs; business representatives, including information technology developers, multinational corporations, financial institutions; and privacy advocates and data protection commissioners.

While the nature of the discussion is confidential at this time and it is too early to discuss specifics, some of the areas at issue in the negotiations include international policy and national sovereignty, privacy protection, lawful access to data that has been encrypted, and how to balance the variety of interests, such as those of privacy and public safety.

The process of discussion has been very useful. The exchange of views and ideas among countries, business, and privacy interests has been instructive for all concerned.

4. Future schedule

The next meeting of Group may be in December 1996 (depending upon decisions to be made at the September meeting). The OECD plans to complete the process of drafting the Guidelines by February 1997.

III. Conclusion

I believe the OECD process has been and will continue to be useful to those who have participated, and I believe it will advance the development of the GII/GIS.

(Session 2)

VIRTUALISING GOVERNMENT STRUCTURES AND ORGANISATIONS: INSIGHTS AND FORESIGHT IN THE NEW ELECTRONIC ERA

Dr Lawrence Loh, Faculty of Business Administration, National University of Singapore

All across the world, the new electronic revolution is beginning to herald fundamental changes in the conduct of government processes and services. As all boundaries become more fuzzy and as organisations and individuals become more intimately interlinked through the emerging global and national information infrastructures, the scope of state agencies may be significantly transformed.

This paper provides a descriptive and prescriptive exposition of the impact of information technology (IT), particularly the Internet, on the government sector. It draws from some most current developments in IT and explores how these have redefined the nature of state agencies. Specific examples may be drawn from countries which have been intensively engaged in the frontiers of IT strategies. In particular, the experiences of Singapore within the broad context of its national IT planning (e.g. IT2000 vision) will be highlighted.

This paper will be centred on a "3F" framework covering: (1) forces; (2) forms; and (3) functions. First, there are two key forces most crucial in the electronic era, namely, economic and social. In such an era, an emerging digital dimension of the economy will be created that radically moves beyond the conventional physical flow of goods and services. Accordingly, information and money are circulated in the so-called "cyberspace". In addition, society has also been transformed by the increasingly networked structure of social relations. In fact, the rules of interpersonal exchanges will be modified to embody new modes of social behaviour in the information society.

Second, with the twin influences of economic and social forces propelled by IT, the forms of government structures are subject to reforms. For instance, with the newly-fostered "cyber-interface" between state agencies and the citizens, these structures may have to change to be more open and transparent. As the boundary between service providers and recipients becomes blurred, especially with the interaction of information production and consumption, state agencies may have to forge efficient and effective structures to facilitate IT-enabled service provision.

Third, the forces will have a major impact on the functions to be performed by the government sector. As information become more easily stored, accessed, processed and disseminated, the scope of state agencies becomes enlarged. The state thus may have to think beyond the traditional roles in responding to changing expectations and needs. In this electronic era, government organisations now interact with the people through a "service-space" that is virtual, instantaneous and can be accessed anywhere and anytime.

(Session 4)

CYBER-ECONOMY: THE NEW REALITY OF SOCIO-ECONOMIC SYSTEM AND POLICY ISSUES

Yuji Masuda, Professor, University of Tokyo

Emergence of cyberspace in the information economy

Nowadays the cyberspace is emerging in the information economy globally. Today's economy is somehow different from industrial economies. Industrial economies built barriers to new entrants. Those barriers were present in all markets, whether local, regional, national or global, and for virtually all goods and services.

But the cyberspace is a place where we meet, communicate and make business. The metaphor of a place become real. Information is no longer data, but landscape. Cyberspace is closer to a data sphere or space of information. It is not a common medium, but a kind of public good. Cyberspace is a new realm, and also a sphere of permanent human gathering and activity.

The cyber-economy is built on the cyberspace, with the Internet as its initial manifestation, using digital technology. In the information economy or cyberconomy we have now entered, information to a large extent replaces land, capital, and machines. And, since digital technology is separating information from the physical world, the cyber-economy is bringing a fundamental shift in the purposes and methods of rules in our current socio-economic system.

Structures of cyber-economy

Electronic Commerce and Digital Money on the Internet as Transaction Platform are the key elements of the cyber-economy.

1) The communities of commerce : electronic commerce (EC)

The communities of commerce, a world-wide community which we call the marketplace. The new marketplace is moving to a new place, cyberspace. It is moving there because digital technologies make transaction costs so small that we can eventually eliminate them. Knowledge and information destroy economies of scale. Technological innovation creates new means of serving old markets, turning one-time monopolies into competitive battlegrounds. Such dynamic competition is accompanied by creative destruction. It is the nature of the cyber-economy.

2) Cyber platform : network and computers

EC activities will be built on the existing and emerging information technology infrastructure, a myriad of communication networks, computers and software. Information and communication technologies (ICT) will form a cyberplatform as information infrastructure. The cyberplatform consists of

various layers of ICT, such as the Information Superhighway Infrastructure. They are multimedia content and network infrastructure, the messaging and information distribution environments and common business services infrastructure.

3) Digital money

Commerce on the Internet has been shattered by the lack of secure transactions. Digital money offers vital capabilities in the cyber-economy. It will play a crucial role not only in EC, but also in the global economy. There are strategic considerations of a variety of approaches to secure transactions including privacy, encryption and digital signatures from the global perspective.

The role of government

Current national administrations should have identified the right goal for the cyber-economy. To accomplish this, 'an industrial and information policy for the cyber-economy' must be established. It should focus on not only removing barriers to competitive environments and deregulating the fast-growing ICT industries, but also creating new knowledge and institutions to accomplish its central functions effectively and efficiently. The advanced information economies will attain cyberspace democracy:

1) To promote dynamic competition;

2) To redefine and assign digital property rights: redefining property rights in the cyber-economy is perhaps one of the most urgent and important tasks for industrial information policy;

3) To create new tax and accounting rules for the cyber-economy. We should create a whole set of new ways of accounting for EC, both at the level of the enterprises and the whole cyber-economy.

(Session 4)

THE CONSUMER IN THE INFORMATION SOCIETY

Claire Milne, consultant to National Consumer Council, United Kingdom

Introduction

The talk will report on the results of research as part of a study on the above topic ordered by the European Commission (DGXXIV) from Ovum Ltd and carried out between November 1995 and June 1996. The main study report is available as part of the workshop documentation. The report cannot, however, be regarded as necessarily representing the views of the European Commission.

The author thanks DGXXIV and Ovum Ltd for permission to use this material, and the National Consumer Council for the opportunity to attend this workshop. Any views expressed are entirely the author's responsibility and do not commit DGXXIV, Ovum or the NCC in any way.

Research method

The field research for this study consisted of a survey of the views of interested parties throughout Europe on the risks to consumers of forthcoming Information Society developments. The survey took the form of a discussion paper identifying potential risks. Respondents' views were invited on the importance of these risks, their likelihood of materialising, and any action thought appropriate to reduce them.

Over 200 copies of the discussion paper were sent out to consumer bodies, regulators, telephone companies, service and content providers, and others with a known interest in the topic. All member states of the European Union were included, as were several other countries (mainly OECD Members).

We received 46 responses, some very substantial and worthy of individual study. They were balanced as follows:

- 19 from consumer organisations and 27 from others;
- 38 from EU countries, of which 21 were not from the UK.

The discussion paper

The discussion paper aimed to outline a broad spread of potential risks. It identified 24 specific risks under seven distinct headings, as follows:

1) Consumer institutions

Inadequate consumer involvement in policymaking;

Inadequate complaints and redress systems.

2) ***Consumer contracts***

Unclear contracts;

Rushed purchase decision;

Inadequate price indications;

Unclear bills.

3) ***Privacy and security***

Misuse of personal data;

Unwanted calls;

Insecure personal billing accounts;

Insecure personal communications.

4) ***Access and affordability***

Essential services not affordable;

New services not available;

Advanced equipment not affordable;

Incomplete interoperability;

Essential new services not on offer.

5) ***Price***

User telecoms prices overall too high;

Residential consumer telecoms prices inequitable.

6) ***Quality***

Service content harmful or illegal;

Service content not as expected;

Worse telecoms service quality;

Unwanted side-effects of competition.

7) ***Choice***

Barriers to choice of carriage;

Artificially limited choice of content;

Difficulty finding content.

How best to structure these issues is itself a question of some importance which will be touched on in the talk.

The response

Overall, the most striking feature of the response was the warm reception that consumer organisations gave to the study taking place at all. It was evidently very timely. Some organisations had already done significant work on the issues and were able to feed us existing papers; others welcomed the discussion paper as a spur to thought on what they recognised as an important new area.

The size of the response is inadequate to generalise on sectional views. However, it is clear that consumer bodies generally felt that most of the risks identified were real and important ones and that new measures were necessary to counter them; whereas others were more likely to believe that enough was already being done.

An overview of the response under each heading follows:

- There was strong and widespread concern about inadequate **complaints and redress** systems, with consumers' difficulty in producing evidence of their case, and the consequent need for suppliers to shoulder the burden of proof, being particularly important themes.

- There was lesser but still significant concern about inadequate **consumer representation** in policy making.

- The **regulatory institutions** within which actions are needed to meet these concerns are themselves often a subject for concern, but of course the details vary widely between countries.

- **Consumer contracts** are widely thought to need clarification, with special concerns being firm identification of the parties to a transaction and the charging method (e.g. per call or per minute).

- Despite considerable activity in **data protection** legislation, deep unease remains about personal privacy and unwanted calls (in the US and Japan these concerns dominate all others).

- On **access and affordability**, a split emerges. A group of respondents think these issues have by now been satisfactorily dealt with, apart from the provision of public access points to new network services. Another group think that despite recent actions these remain the most important issues, since they are linked with wider social deprivation and affect those who are already worst off. There is however wide agreement that affordability of advanced equipment is relatively low priority. Several respondents spontaneously mentioned the importance of being able to block access to unwanted services such as premium rate.

- **Price** as such attracted relatively little comment, with most respondents who mentioned it being concerned rather with affordability of essential services or with users' awareness of price.

- **Content control** was mentioned often, but usually not as a matter of deep concern, and sometimes the reverse ("we don't need more censorship"). A link was often brought out with the need to improve complaints and redress mechanisms when content has proved disappointing. Enabling consumers to recognise promotional material was also mentioned.

- The risks described under the heading **choice** were not understood by some respondents, but were supported as very important by others -- including telephone companies.

Study conclusions

The research just described was one of several important inputs to the study. Our conclusions were strongly influenced by the high level of uncertainty which characterises developments in this area, and the desire to offer consumers the best possible protection without limiting their freedom or stopping what may be very beneficial new services.

We recommended a two-pronged approach: proactive consumer empowerment to help consumers to make their own choices, and reactive consumer protection to maintain fair treatment for all regardless of what choices they make.

If time permits the study recommendations will be covered in more detail; they can be found in the study report.

(Session 4)

DIGITAL CASH AND INTERNET PAYMENT SYSTEMS

Chris Reed, IT Law Unit, University of London, UK

Summary

This paper examines the legal issues raised by a range of payment mechanisms which are available for Internet commerce. The payment mechanisms selected for analysis all have the common characteristic that they are intended to achieve an immediate credit of funds to the seller (though access to those funds may be delayed in some circumstances) and an immediate debit of funds from the buyer. These payment mechanisms have often been described as electronic money, or digital cash, although the paper suggests a distinction between "true" digital cash systems and other mechanisms for Internet payment.

The first legal issue that arises is whether payment mechanisms of this type may only be offered by banks, or whether there is free entry into the market so that unregulated organisations can offer these services. The conclusion is that the normal test for whether banking supervision laws apply to an undertaking is whether that undertaking accepts deposits. Most digital cash schemes are structured so that the "money" is under the control of the buyer, not the issuer, thus taking them outside banking supervision laws. The same conclusion is reached for the other candidates for regulation, the most obvious of which are credit licensing laws. For these reasons the author concludes that the provision of digital cash services is largely unregulated by current laws.

The paper goes on to examine the legal structures by which Internet payment can be made. These fall into three broad classes:

- systems where the Internet Payment Operator (IPO) acts as the buyer's agent to discharge the buyer's debt to the seller;
- systems where the IPO operates a running account on the seller's behalf, debiting some regulated form of payment (such as the buyer's credit card account) and crediting the seller's account with the IPO;
- "true" digital cash systems, where the IPO does no more than provide the buyer with electronic tokens in return for payment in some other form, and the buyer makes payment to the seller by transferring to him those tokens.

Once the legal structures of Internet payment have been elucidated, the next issue for analysis in the paper is the way in which digital cash works as a method of transferring value. This raises two separate issues:

- what rights does the holder of digital cash have to convert it into some other form of value, i.e. goods and services or "traditional" forms of value such as bank deposits?

- where digital cash is accepted as payment by a seller, how and when (if at all) does that payment discharge the buyer's debt to the seller?

The conclusion in both cases is that the answer comes from a series of implied contractual obligations, entered into by buyer and seller when the tender of digital cash as the payment method for the sale is accepted. The result of these contractual obligations is that payment by digital cash and the other Internet payment methods examined acts as an immediate discharge of the payer's liability.

The paper concludes with two examples of the potential problems for national and international financial systems which are posed by anonymous electronic payment methods. The first of these is the threat to tax systems, which derives from the ability offered to information vendors and knowledge workers to take large parts of their activities "offshore". The second is the potential of these payment methods as an effective vehicle for money laundering. Other examples of problem areas, such as control of money supply and effects on exchange rate pressures and exchange controls, will be addressed in the oral presentation.

(Session 2)

MAKING GOVERNMENT WORK: ELECTRONIC DELIVERY OF SERVICES VIA THE INTERNET

Dr. Fred B. Wood[5]

Just three years ago, the concept of reinventing government agencies through the use of information technology was in its infancy. In 1993, two landmark reports were published on this topic: *Making Government Work: Electronic Delivery of Federal Services*, prepared by the Office of Technology Assessment, US Congress,[6] and *Creating A Government That Works Better & Costs Less: Report of the National Performance Review*, prepared under the direction of the Office of the Vice President of the United States.[7] The potential role of information technology was a major theme in both reports, although *Making Government Work* addressed this topic in considerably greater depth. This report concluded that:

> *Powerful forces...are accelerating the movement toward electronic delivery of government services. While information technology offers considerable potential to improve...service delivery, there is no assurance that its use will improve access for citizens or result in creative, cost-effective applications unless other factors are considered and dealt with.*[8]

Since that time, government reinvention activities using information technology have proliferated in the US and abroad. This paper will review the major findings of *Making Government Work* with emphasis on the use of the Internet for electronic delivery of government services and drawing on recent experience of the National Library of Medicine (NLM), which is the world's largest biomedical library.[9] The paper will consider the validity and applicability of the seven key strategic elements of successful electronic delivery identified in *Making Government Work*: grassroots involvement; community infrastructure development; encouraging innovation; creating directories; creating alternative futures; strategic partnering; and pre-operational testing. Discussion of each of these strategic elements will include examples of relevant NLM activities, projects, and reports.

The paper will conclude with general observations on the implications of Internet-based delivery of government services for: assuring equity of access to electronic services; improving the cost-effectiveness of service delivery; reinvigorating information resources management in government; updating relevant government information policies; and enhancing government use of the telecommunications infrastructure.

DISCUSSION COMMENTS BY DISCUSSANTS

(Session 4)

TAXES -- BUILDING A BETTER AUSTRALIA

Michael D'Ascenzo, Australian Tax Office

Executive summary

Cyberspace raises a number of complex issues for tax law and its administration. The pressures which electronic commerce will impose on the practical application of long established principles of taxation law such as residency and source is a matter for urgent concern. In addition, the use of permanent establishment rules under the Double Tax Agreements, the characterisation of business profits and royalty income, and the attribution of the former as well as deductions to a particular permanent establishment or source become more problematic under electronic commerce.

These pressures, and increased opportunities for tax evasion, will significantly impact on tax systems and tax administrations sooner rather than later. For example, the World Wide Web has gone from obscurity to exponential growth in the last three years. These technological changes will require corresponding changes in tax systems and tax policy makers and administration must be prepared to act with similar speed. I also suggest that actions in concert at an international level are more likely to deliver durable solutions than a unilateral response.

A basic taxation framework

In order for a country to impose income tax, a number of pre-conditions must be met:

- the country must have legal and practical jurisdiction over the taxpayer or the income subject to taxation, or both; and
- the taxpayer must be an identifiable legal entity.

In addition, tax law usually requires taxpayers to keep appropriate records and gives Revenue authorities powers to obtain access to those records and other relevant information.

Cyberspace presents challenges in each of the above areas of the taxation framework. Further, Revenue authorities make use of other laws, such as those applying to banking, corporations and contracts and to the degree that these other laws are also under pressure in cyberspace, that pressure also flows through to the tax system.[10]

Jurisdiction in taxation matters

Generally, countries impose tax on :

- the world-wide income of *residents* of the country; and
- the income of non-residents which is *sourced* in the country imposing the tax.

Obviously the concepts of source and residency are central to taxation jurisdiction.

Most of the principle jurisdictional concepts in taxation law were developed in an era with different technology. They are primarily based on geographic presence, and at the time of their development, they were perfectly suitable concepts. For example, the effort required to change residence, to move country, was time consuming and was not undertaken lightly or frequently, particularly if a taxpayer moved to Australia!

However, the absence of geographic "place" in cyberspace challenges the jurisdictional rules of source and residency as they are currently formulated and applied. As one writer has put it "the trouble with cyberspace ... is that there's no there".[11]

Even if the two jurisdictional concepts of source and residency can be adapted to cyberspace, they tend to overlap, potentially giving rise to problems of double taxation. Taxpayers of one country that earn income in another country will be subject to double taxation; as a resident of one country and with income sourced in another.

Double Taxation Agreements (DTAs) are the most comprehensive mechanism to overcome the problems of double taxation.

DTAs generally resolve jurisdictional issues by distinguishing types of income and assigning taxing rights over a particular type of income to one jurisdiction or another or between jurisdictions in some agreed fashion.

One of the distinctions used is to broadly define income as being derived from either goods or services. Once again, this conceptual distinction was more workable when goods and services could not be readily interchanged, bundled or disaggregated to change the character of the income.

If we compare the sale of a music compact disc to a customer in another country with that customer having access to the digital audio signal of music which can be downloaded via the Internet and saved onto a CD, the consumer may be indifferent to the methods by which she or he obtains a CD full of music. However the taxation treatment is quite different with the sale of a CD usually attracting sales tax[12] while the transmission of signals would probably lead to a withholding tax. The changed character of the income changes the basis on which that income is taxed and the jurisdiction in which it is taxed.

Further, it is now easier to separate the source of a service and the location where it is provided. For example, taxation advice is being provided over the Internet where the tax adviser is in one country and the client in another.[13]

Another jurisdictional element that is included in DTAs is the concept of a permanent establishment (PE). Generally a country gives up many of it's source taxation rights under a DTA. However it is recognised that there will be residents of one country which operate in another and rely upon the economic infrastructure of the host country for the viability. Accordingly countries reserve the right to tax the income attributable to a PE from sources in their host country.

The concept of PE is one which is particularly unclear in cyberspace. Article 5 of the OECD Model Income Tax Convention on Income and Capital defines a PE as "...a fixed place of business through which the business of an enterprise is wholly or partly carried on." A certain degree of permanence, a "...fixed place of business..." is implied in the definition of a PE and the mere presence of

an enterprise in a country should not give rise to a PE. However the commentary in paragraph 10 to Article 5(4) states that a PE may exist if the business"... is carried on mainly through automatic equipment."

The debate about whether an Internet site on a computer represents a PE in the country where the computer is physically located is still very open and yet it's resolution is fundamental to the operation of a world-wide network of DTAs.

Without adequate jurisdiction there is no basis on which to legally impose tax. Accordingly issues of source and residency need to be resolved for cyberspace. Further, without resolution of jurisdiction concepts such as PE, DTAs will have limited use in cyberspace.

Identity

In order to effectively impose taxation, a Revenue authority must be able to adequately identify the taxpayer so that the taxpayer is only taxed upon their own income and so, in case of non-payment, there is an identifiable party on which to serve legal notices or against which to take other action. In the extreme, this other action could include bankruptcy proceedings or prosecution, both of which obviously imply correct identification of a legal entity.

A cyberspace entity, such as an Internet business site, does not necessarily identify a tax payer, particularly where the Internet business uses a trading name.

In the physical world, trading names are regulated and registered to taxable entities, the identity trail can be followed and proof of identity arrangements reduces the risk of false identities. No such mechanisms exist for cyberspace entities and so identification presents a problem.

Another issue of identity revolves around the authentication of signatures in cyberspace. This issue has implications which are wider than taxation, but the recently released Australian Standard on a Public Key Authentication Framework and similar international initiatives are a step forward in resolving authentication issues where the parties to a transaction wish to have their identity established. However, in many cases, parties to a transaction which gives rise to taxable income do not wish to have their identity revealed.

Without adequate identification, there is no taxpayer on which tax may be levied.[14.]

Record keeping and access

The tax laws of most countries include some requirement for the taxpayer, or other parties to a transaction, to keep records of the transaction to allow the taxable income to be calculated.

Generally, this requirement stipulates certain characteristics of the records, such as being kept in, or convertible to, a particular language, location or form.

The cyberspace environment provides both opportunities and challenges for proper record keeping.

It is arguable that business conducted in cyberspace will necessarily require computing power, will tend to have their books of account and other records computerised, making use of commercial software which largely meets the record keeping requirements of taxation law.

However, commercial transactions in cyberspace will, realistically, be encrypted or secured in some fashion.

Encryption has been described as a "very strong envelope" and is analogous to physically locking information in a safe. Historically, Revenue authorities have been faced with taxpayers locking records in safes and hiding the combination. The courts have upheld the right of the ATO to use *reasonable* force to open a safe, and there have been cases of the ATO using locksmiths. However, with encryption, Revenue authorities do not have recourse to electronic locksmiths and so, practically, a tax payer will be able to deny access to encrypted material.

To the degree that a taxpayer will not unencrypt records, Revenue authorities will not have access to information they require to ensure compliance with taxation law.

Another practical challenge to tax law raised by cyberspace is that it is possible to store records in another jurisdiction. Obviously access powers provided under the domestic law of one country have no force in another country, barring the operation of treaties, or other mechanisms.[15]

Multinational corporations that choose to avoid tax have always been able to make use of their international reach to engage in transfer pricing, or to use tax havens or to store records in another jurisdiction. Cyberspace lowers the capital costs required to engage in multinational behaviour and the experience of Revenue authorities is that markets with large numbers of sellers and low capital requirements, such as may eventuate in cyberspace, are typically less compliant with taxation laws. This is one of the most significant concerns for Revenue authorities.

Remedies

Revenue authorities around the world are examining the issues raised by cyberspace. The United States, Canada and Australia jointly prepared a paper for the Committee of Fiscal Affairs (CFA) which was delivered in June 1996. Currently the DTA and tax evasion working groups, amongst others of the CFA, are examining the issues in more detail. Other international tax forums are also discussing the issues raised by cyberspace and the terms of reference of an Australian Taxation Office inquiry are available at our Internet home page: http://www.webaustralia.com.au/ato/atohp.htm.

While there are no clear remedies, it is evident that internationally consistent approaches are urgently required to ensure the effectiveness of taxation law because, due to the extreme mobility of business in cyberspace, unilateral action by any one country will see a flight of business from that country which will be detrimental to that country's revenue base. However, inaction by all countries will potentially create a tax-free cyberspace which is to the detriment of the revenue base of all countries.

Without adequate revenue, governments are not able to meet social welfare objectives or provide public goods.

As noted above, many of the issues raised by cyberspace are practical difficulties which defeat the application of the existing law.

Domain names, particularly the trailing country identifier offer a potential mechanism for determining physical location and providing a remedy for jurisdictional issues. In the (fictitious) Internet address of *www.aussisales.com.au*, the .au suffix indicates a link to Australia. However, domain names as they are currently regulated do not reliably indicate geographic presence: a*ussisales@ www.aussisales.com.au* could just as easily be hosted on a computer in France.

To remedy issues of jurisdiction, one approach might be to obtain international agreement on domain name registrations and regulation so that domain names become a reliable indicator as to residence or source.

Following from this, the regulation of domain names by international agreement may include more reliable proof of identity processes so that, if required, the identity of a particular cyberspace entity can be linked to an existing, physical, taxable entity.

Encryption is one issue which is far more difficult to resolve and it may be one area where each country has to review its own domestic arrangements. The existence of strong, freely available public key encryption technology means that it is unlikely that regulation of this technology is possible. However, it might be possible to make use of the underlying network protocols to at least determine the sender and the destination of a particular encrypted package of information and hence to better construct an assessment of tax if the taxpayer will not reveal the details of an encrypted transaction.

In the broader perspective it needs to be added that the challenges facing tax administrations will often be similar to those shaped by other regulatory bodies. I am less sanguine than Dr. Shin about the ease in which it will be possible to control issues associated with electronic commerce (e.g. its effect on monetary policy and on exchange rate pressures and exchange controls). I tend to agree with Chris Reed's conclusion that the provision of digital cash services is largely unregulated by current laws. However I do agree with Dr. Shin that "it is absolutely necessary for the monetary authority (and other policy makers and regulators) to make an effort to reduce the time lag in policy actions."

(Session 2)

HOW SHOULD GOVERNMENT RESTRUCTURE ITSELF TO BEST BENEFIT FROM THE OPPORTUNITIES OFFERED BY THE NEW ICTS ?

Dora Mozes, Industry Canada, Government of Canada

Introduction

I would like to start by providing you with the questions that were posed for Session 2. This includes the key question for this session which is:

> *"How should government restructure itself to best benefit from the opportunities offered by the new ICTs?"*

I will then provide, for discussion, possible answers to these questions based on highlights of the five papers.

Other questions posed:

Other questions posed for Session 2 are:

1. Can ICTs improve the efficiency and effectiveness of government services ?

Answer: I believe the main response by the presenters is YES, if other factors are taken into account.

To me this seems to highlight that the question should be broadened to ask:

> *"Can information on the Global Information Infrastructure (GII), including the Internet, improve the effectiveness of government services ?"*

2. Can the improvement of performance of the public sector be measured ?

Answer: The answer to this question is YES, but to date there is little empirical evidence. Rather most of the information is qualitative. The good news is that progress is being made in how to measure the improvements.

3. Does the impact of ICTs trigger structural change of government and to what extent ?

Answer: The answer to this question is YES, but it is being done gradually and Norway is well placed in developing a model to measure to what extent the change is occurring.

4. What would be the characteristics of government institutions and structures in the Information Society ?

Answer: The answer seems to be that the policy role of legislation would not be affected in any appreciable way. However, there are other areas of government where change is inevitable.

5. Is "downsizing government" achievable ?

Answer: Here the verdict is not out yet. It is an area that requires further analysis. However, the work by Harry Bouwman is an interesting starting point.

In summary to this question I would venture to say that recent developments in many countries indicate that several factors are at play, each of which need to be considered before drawing a conclusion.

6. Is "electronic democracy" a realistic concept ?

Answer: The answer to this question is YES if other factors are considered and implemented, including juridical aspects and involvement by the electorate and the elected.

7. How would existing government bodies change as society changes ?

Answer: There is no clear answer to this question yet.

There seems to be a contradiction here in that while some propose that ICTs could reduce the size of government, others imply that the size may actually need to be increased. However, this is based in part on the broadened definition of "information" in the next century.

8. What are the trends for government's interface with the public ?

Answer: Because of the rapid changes occurring in this area, there seems to be different views on the "speed" at which one is going towards a Global Information Society (GIS). However, most would agree that the trend is towards building a GIS. The question is how informed are citizens on the impact of this change ?

9. By employing ICTs, is the government becoming more "open" and "transparent" ?

Answer: The answer to this question is NO.

10. Will public access to government data be easier ?

Answer: Again the answer seems to be NO, but this may change as the Global Information Infrastructure (GII) evolves.

Main question of Session 2:

Regarding a response to the main question posed for session 2:

How should government restructure itself to best benefit from the opportunities offered by the new ICTs ?

The following can be considered:

Answer: There seems to be a consensus that governments should increasingly focus on the information needs of end-users and that a key role for governments is to ensure access to the information infrastructure.

Conclusion

Finally, to end, I would suggest that: “Participation Encourages Innovation”.

More specifically: there is a need to encourage innovation by government employees, clients and other participants to “rethink how government services are delivered” and in trying new ways of delivering government services electronically.

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Fred Wood, "National Institutes of Health, US, "Making Government Work: Electronic Delivery of Services via the Internet."

Harry Bouwman, University of Utrecht, the Netherlands, "A Wealth of Information: Some Implications of Information and Communication Technologies for Government Institution."

Jostein Haoy, Ministry of Government Administration, Norway, "ICT Usage and the Restructuring of the Government."

Roberto Gualtieri, Consultant, Canada, "Impact of the Emerging Information Society on the Management of Information by Governments in the Policy Development Process and on the Quality of Democracy."

Lawrence Loh, National University of Singapore, Singapore, "Virtualizing Government Structure and Organisations: Insights and foresights in the New Electronic Era."

NOTES

[1] Extracts from the Rapporteurs' Report, MM. Hae-Rin Eum and Hae-Won Lee.

[2] Dr. Puay Tang, Research Fellow, Science Policy Research Unit, University of Sussex, UK.

[3] Session rapporteurs.

[4] Recommendation from ICAs 5th Annual Information Technology Manager's Meeting, 20-22 March 1996.

[5] Dr. Wood currently serves as Special Expert, Office of Health Information Programs Development, National Library of Medicine, National Institutes of Health, US Department of Health and Human Services where he works on a variety of topics including technology transfer, technology assessment, user outreach, and trends in Internet/Intranet development in the United States and globally. Dr. Wood previously served as Senior Associate and Project Director at the Office of Technology Assessment, US Congress, where he directed studies on government use of information technology and related national information policy issues. Earlier in his career, Dr. Wood served as Research Scientist at The George Washington University Program of Policy Studies in Science and Technology, Editor of *The HarBus News* at Harvard Business School, and Public Affairs Researcher at IBM Corporate Headquarters. He holds the Doctor of Business Administration degree from The George Washington University, Master of Business Administration degree from Harvard University, and Bachelor of Science in Electrical Engineering degree from Oregon State University.

[6] Washington, D.C.: US Government Printing Office, November 1993.

[7] Washington, D.C.: US Government Printing Office, Sept. 7, 1993.

[8] *Making Government Work*, op.cit., p. 2.

[9] The National Library of Medicine is one of several institutes of the National Institutes of Health within the Public Health Service of the US Department of Health and Human Services.

[10] For example, Professor Yuji Masuda, of the University of Tokyo, "Cyber-economy: The New Reality of Socio-Economic System and Policy Issues" OECD Workshop No 5 on the Cyberspace, Economics of the Information Society, "Government Responses to the Emerging Information Society", Seoul, 22/23 October 1996, argues that "Redidining property rights in the cyber-economy is perhaps one of the most urgent and important tasks for the information industrial policy". Similarly, Edward A. Cavazos, "System Operator Liability", OECD Workshop No 5, Op. cit., looks at the impact that liability doctrines have on the economic models of cyberspace.

[11] Resnick R., C*ybertort: The New Era*, National Law Journal, July 18, 1994, p.A1. However, Professor Masuda gives us another way of looking at cyberspace. He argues that "the cyberspace is a place", on which is built the cyber-economy. He sees a pressing need to create new tax and accounting rules for the cyber-economy.

[12] Customs duties will also probably be charged on the importation of a physical good but not for download of a computer file. This example also ignores the very real practical problem of identifying the payments and collecting the tax where direct importation is involved.

[13] Claire Milne, "The Consumer in the Information Society", OECD Workshop No.5, Op.cit., warns that "Digital cash presents potentially disastrous challenges to public finance laws. Even consumption taxes such as VAT should become much harder to collect, especially taxes on the supply of services via telecommunications". As John Perry Barlow, Co-founder of the Electronic Frontrier foundation, said at a conference in January 1994 (World EDI and Law Conference, New York 1994), "Taxes will become optional".

[14] Dr. Yondo Shin of KISDI, "Electronic Cash and Policy Issues", OECD Workshop No.5, Op.Cit., 1996, makes the point that in relation to electronic cash if anonymity is completely guaranteed electronic cash can easily be used in illegal activities such as money laundering and tax evasion. Similarly Chris Reed of the University of London, "Digital Cash and Internet Payment Systems', OECD Workshop No.5, Op.Cit., 1996, also highlights the potential problems for national and international financial systems which are posed by anonymous electronic payment methods. In particular is "the threat to tax systems which derives from the ability offered to information vendors and knowledge workers to take large parts of their activities "offshore". See also Claire Milne, Op.cit. 1996.

[15] Claire Milne, Op.cit., comments: "Digital cash disperses (third party records) geographically ... or, in the case of "true" digital cash, removes them entirely. This anonymity for payees, whether relative or absolute, will make activities such as tax evasion and money laundering much easier, and will also open up ways of avoiding tax legitimately... Digital cash is likely to greatly reduce the ability of the tax authorities to check the information provided by taxpayers."

BIOGRAPHIES

Mr D'Ascenzo is Chief Tax Counsel for the Australian Taxation Office. As such he is responsible for interpretative decisions made by the ATO including its Public Rulings Program. Prior to this appointment as Chief Tax Counsel, Mr D'Ascenzo held various senior positions within the ATO, including national responsibility for its Audit and International Operations, implementation of ATO's compliance enforcement strategy and leadership of the 1992 changes to Australia's self assessment system of taxation. Mr D'Ascenzo has a Bachelor of Law degree, and a Bachelor of Economics degree from the Australian National University, and is admitted as a barrister and solicitor in the Supreme Court of the ACT. He is also a graduate of Harvard Business School's Program for Management Development.

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Georges Ferné is French. His training was in Law and Political Science. He has been with OECD since the late 1960s, working on a number of science and technology related questions, including Information Technology Development Policies, University/Industry Research Policies, Social Sciences Policy, etc. Duties involve in particular the preparation and subsequent publication of numerous studies on national science and technology policies. His most recent work has addressed policy issues relating to the economics of information and communications technologies, including issues related to standardization, studies on the impacts of these technologies on employment and trade and, more generally, implications of the emerging global information society.

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He is now a private entrepreneur and consultant with a continuing interest in public policy, tourism development, and the wine trade.

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Supported by his professional knowledge and experience, he is now working for the Japanese Prime Minister as a member of the congress of intellectual persons to give advice to policy maker towards a new society supported by information and communi-cation technologies. He is also a member of the task force to investigate utilisation of information systems for document storage and message transfer by electronic means in order to reflect deregulation policy. He is leading many Japanese National Projects such as in the medical field, electric commerce and security fields, that are supported by MITI, MPT, MHW, MFA, etc. In G-7 projects related to GII, he represents Japan in the Global health care project -- health card application.

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