

**COMMITTEE FOR INFORMATION, COMPUTERS AND COMMUNICATIONS POLICY**

**GLOBAL INFORMATION INFRASTRUCTURE--GLOBAL INFORMATION SOCIETY (GII-GIS)  
POLICY RECOMMENDATIONS FOR ACTION**

**ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

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## **FOREWORD**

The Meeting of the OECD Council at Ministerial level in 1995 requested the OECD's Committee on Information, Computer and Communications Policy (ICCP) to develop recommendations for policies that fully exploit the contributions of advances in technology in the context of Global Information Infrastructures -- Global Information Society (GII-GIS). This report contains the recommendations from the Background Report, *Global Information Infrastructures-Global Information Society (GII-GIS): Policy Requirements*. The report, while addressed to OECD governments, recognises that all social partners need to play an important role in the transformation of existing economic and social structures, and places importance on allowing the private sector to take the lead in the economic and commercial development and implementation of the GII-GIS. The report also recognises that the development of a global information society can help government contribute to further enhancement of public goals.

The Background Report and this report were approved by the ICCP Committee at its meeting on 27-28 February, 1997 and subsequently Ministers endorsed the recommendations at the meeting of the Council at Ministerial Level on 26-27 May 1997 and recommended that the reports be derestricted. The reports were drafted by Dimitri Ypsilanti of the Directorate of Science, Technology and Industry and Louisa Gosling (European University Institute, Florence).

## INTRODUCTION

The Meeting of the OECD Council at Ministerial level in 1995 requested the Committee for Information, Computer and Communications Policy (ICCP) to develop recommendations for policies that fully exploit the contributions of advances in technology in the context of Global Information Infrastructures -- Global Information Society (GII-GIS). This report contains the recommendations (provided as italic text in boxes below) from the Background Report, *Global Information Infrastructures-Global Information Society (GII-GIS): Policy Requirements*. The report, while addressed to OECD governments, recognises that all social partners need to play an important role in the transformation of existing economic and social structures, and places importance on allowing the private sector to take the lead in the economic and commercial development and implementation of the GII-GIS. The development of a global information society can help governments contribute to further enhancement of public goals, while retaining responsibility to ensure public safety and national security, the protection of citizens and the promotion of cultural diversity.

The concept of global information infrastructures-global information society (GII-GIS) encompasses the development and integration of high speed communication networks, and a set of services and applications in digital form, into global integrated networks capable of seamless delivery. Such networks provide fully interactive access, to network-based services within countries and across national borders. The physical infrastructure of GII-GIS is not limited to any one technology; on the contrary implicit in the GII-GIS concept is the interconnection and interoperability of a range of competing and complementary infrastructures, applications and services made possible by digitalisation. A harbinger of GII-GIS is the explosive growth of the Internet.

The development of GII-GIS is expected to transform existing economic markets to a marketplace where communication networks, bundling together transport, access and market transactions, will play a major role. The driving force behind economic growth and development in such a networked economy will be based on information.

The development of a network-based information economy requires:

- the availability and diffusion of high speed interactive infrastructures;
- non-discriminatory access to and use of infrastructures for both customers and service providers;
- the interconnection and interoperability of infrastructures and services;
- growth and development of on-line services, especially digital applications across all sectors including multimedia services;
- safeguards which provide for universal service, and ensure privacy, confidentiality of information, and security of payments, and protection of intellectual property.

Governments need to take a pro-active response to GII-GIS developments and applications. They also need to take action now as new services and applications emerge and are being formulated. At the same time it is important to understand that the dynamics of change are largely technology and private sector driven. Government response needs to focus on ensuring that opportunities are opened up and are available to firms, and that existing market structures, particularly where there are bottlenecks in supply, do not restrict growth and competition. At the same time governments need to play a role in stimulating and encouraging demand for new services which the GII-GIS is making available.

Building on the main policy principles adopted by the G-7, and in particular the need to promote market and product competition, the background paper outlines the new agendas for policy which governments should face in the emerging GII-GIS. It also elaborates a set of immediate priorities for policy reform which are provided below. Given the global nature of new communication technologies and activities it is important to have in place international principles and frameworks to ensure the harmonious development of global information infrastructures. Three main policy areas need to be addressed:

- *those directly related to the development and diffusion of information infrastructures, nationally and on a global scale;*
- *those related to the access and use of these infrastructures; and, linked to this,*
- *those related to the existing and new services and applications, including multimedia applications and electronic commerce, using infrastructures.*

The sea of change taking place in information and communication markets and the development of interactive applications is fundamentally based on three factors: convergence, globalisation and universal network access. The changes taking place are rapid. The shape of the Information Economy of the 21st century, and the Information Society which accompanies it, relies upon review and, where necessary revision, of policies and policy frameworks now. The implications will be significant, not only as concerns stimulation of economic growth and job creation, but also because of the potential as regards social benefits and public services.

## **1. ACCESS TO THE GII-GIS**

### ***Dynamics of changing infrastructures and convergence***

The possibilities opened up by recent developments, particularly in digital technology, mean that the segmentation of infrastructures by technologies or by service typology for policy purposes is becoming less and less valid. On the other hand a regulatory distinction between content service provision and provision of transmission facilities is becoming more relevant. The multiplicity of services also implies a need to attain direct customer access, which focuses attention on essential facilities and the constraints they may impose on access in the market.

Convergence of the telecommunications, broadcasting and computing industries is putting increasing pressure on the associated regulatory paradigms. By not adapting legislative frameworks, policy goals and institutions there is a risk of creating regulatory obstacles and retarding growth in the GII-GIS.

*A progressive review of the traditional separation, as regards regulatory frameworks including licence conditions, between telecommunication infrastructures, broadcasting facilities and cable television networks is recommended. The development of new regulatory distinctions between the issues concerned with pure carriage services from the policy issues concerned with content services might be considered in this context.*

*Whilst taking into account the specific nature of certain types of networks, it is recommended to examine the conditions and timing to extend the general principles of market and product competition to all communication infrastructure markets.*

### **Access to the information society**

While different regulatory and institutional solutions will suit different OECD countries depending upon varying legal and political traditions, the globalisation of information infrastructures and services is creating pressures for international co-operation and co-ordination of essential safeguard and access principles. The inclusion of basic telecommunications services and networks in the framework of the WTO has already resulted in the development of a set of common regulatory principles on access rules which would be accompanied by relevant market access commitments. Furthermore, new services such as digital satellite and Internet defy territorial boundaries so that purely national solutions likely will become increasingly inadequate.

The general access principle for the success of the GII-GIS is that those having bottleneck positions, or controlling gateways to customers, should not be able to charge a monopoly price for their service nor give preferential treatment to their own affiliated or favoured service providers in the dependent market.

*Governments should review whether the extension or adaptation of access principles, already being developed in many OECD countries as regards telecommunications networks is appropriate for other parts of the GII.*

*A key general principle recommended for the success of the GII-GIS is that essential communication facilities should charge cost-oriented prices for access services and should provide non-discriminatory treatment to service providers.*

### **Access Scenarios: Telecommunications, Digital TV and On-line Services**

#### ***The local loop***

Competition in the provision of communication access and service through the local loop is crucial in the success of the GII-GIS. Significant efforts must be made by regulators to stimulate competition especially through alternate technologies, regulatory measures, and where necessary, structural solutions.

*Significant efforts must be made by regulators to stimulate competition at the local loop especially through alternate technologies, regulatory measures, accounting separation and, where necessary, structural solutions. Where access bottlenecks remain, obligations should be placed on access providers to ensure non-discrimination, transparency, cost-oriented pricing and, as far as possible, unbundled access to services and facilities.*

*Where cable infrastructure is underdeveloped, governments need to first take into account the requirements and incentives for independent investment and establishment of alternate platforms for customer access, before going on to encourage the potential for convergence which can be realised once a competitive environment has been established. Where cable systems are established but controlled by the incumbent telecommunication operator, competition policy concerns may motivate governments to consider structural separation or divestiture of the cable business in the interests of establishing competition in multimedia networks.*

#### *Conditional access systems*

Access between digital broadcasting services and the customer for new digital broadcasting services, terrestrial or satellite, may involve conditional access systems as the final link, including the related applications programmes and subscriber management services. In order to access services, customers may need to purchase digital decoders in the form of 'set-top boxes'. Competition is important to ensure that customers reap the benefits of this technology.

*Competition in the provision of conditional access systems is important so that viewers can access a wide range of digital services and programmes regardless of the method of delivery to the TV screen and without the expense and inconvenience of multiple set-top boxes. Under certain market conditions, governments may need to consider taking appropriate steps to ensure open access and ensure that the broadest possible range of suppliers can reach their prospective audiences.*

#### *Software operating systems*

The final access point between information services and end customers is increasingly via browsing software and servers; and this is set to become increasingly integrated within the overall PC operating system. This can apply to the Internet, to electronic commerce applications, etc. The move towards greater vertical integration and concentration in the Internet industry by major operators may indeed be the result of market forces and pro-competitive strategies based on real, sustainable competitive advantages and synergies, but it may also raise concern for open access between services and customers. It is important therefore to ensure that competition for new products and new technologies remains sustainable.

*In such a new and dynamic market as the Internet it is recommended that Government measures, when necessary, facilitate the development of the market while preventing anti-competitive practices on the part of dominant players regarding access.*

### ***Competitive safeguards and access***

The areas and situations involving access to the GII include, *inter alia*, consumer equipment elements, software operating systems as well as various transmission networks. Furthermore, the structure and characteristics of these markets are particularly dynamic and fluid. The safeguards which are being developed for liberalising telecommunication markets will, as broadband communication infrastructures develop and as infrastructure convergence takes place, continue to be necessary, but will in many cases require review and possible extension to take into account new developments. Key areas include interconnection, numbering, licensing and interoperability.

### ***Interconnection***

Underlying the notion of information infrastructures is the concept of a number of interconnected networks which are both competitive and complementary. The success of a competitive market structure for information infrastructures hinges on an effective framework being in place for interconnection and non-discriminatory access to both networks and scarce resources. Different infrastructures will need to interconnect and the provision of different services on infrastructures will change concepts of cost allocation and determination of fair interconnect prices and conditions. It is also important to allow other content providers access.

*It is recommended that Governments give due priority to implementing effective, and flexible competitive safeguards to facilitate entry by market participants in a timely fashion and provide the framework for the private sector to overcome access problems. Governments need to put into place as rapidly as possible interconnection frameworks with emphasis on non-discrimination, transparency and an effective arbitration process. Co-ordination is needed at the international level. In this context governments should support the additional regulatory principles they each incorporated in their commitments on basic telecommunication services in the WTO.*

*Governments also need to take account of the fact that convergence and global alliances are creating new challenges as regards interconnection issues and requirements.*

*Particular consideration must be given to the problem of fair allocation of scarce resources, such as spectrum or rights of way, for new entrants to the market.*

### ***Numbering and addressing policy***

The development of information infrastructures, new services, and competition will require the implementation of a framework for management of numbering resources and number portability. Number portability which enables customers to keep their existing numbers when they change from one carrier to another fosters competition especially at the local loop. The process of convergence is widening the 'numbering' debate to include different addressing and identification systems. In the case of the Internet, because it is an international medium, addressing is a global issue since only one unique global domain name is provided at present. Present structures for management of Internet addressing are of concern in that there appears to be no proper administrative oversight at the national or international level. In the

context of electronic commerce, addressing issues are raised in terms of name assignment and management service for names. Such name assignment is closely linked with use of names and certification of authenticity, and thus encryption issues. This issue needs close international co-operation in that electronic commerce will be transnational.

*Governments should ensure, preferably through a consultative body including suppliers and users of number resources, that an effective non-discriminatory numbering framework is established. The management of numbering resources, number portability, operator selection and preselection, should be implemented as soon as possible.*

*Consideration needs to be given to frameworks based on private sector co-operation for the co-ordination and management of Internet domain names and the identification systems for Internet sites.*

*Together with appropriate private sector bodies, governments should begin examining international solutions for electronic commerce addressing in terms of name assignment and management services for names.*

### ***Licensing***

As information infrastructures develop it becomes increasingly important to lower market entry restrictions with a more open and efficient authorisation procedure so as to lower the barriers to the development of a global communications economy.

*Existing national licensing regimes for infrastructures should be reviewed in order to ensure coherent and consistent policies which support multimedia development and diffusion, providing licences in a transparent and timely fashion. The separation of licensing of infrastructures and transport services, from those providing authorisation for the provision of services, should be examined in countries where such licensing is bundled. Wherever feasible, Governments should give consideration to introducing a system of general authorisation or class licenses.*

*Limitations on the number of licences should be avoided except where justified for reasons of limited resources. The allocation conditions of scarce resources such as spectrum, and the way these resources are used can, nevertheless, be affected by the type of services diffused.*

### ***Interoperability and standards***

The goal of seamless and efficient networking creates increasing demands for interoperability and common standards between an ever wider variety of operators and service providers. The merging of the information and communication sectors and the rapid development of new technologies is also requiring new paradigms in the process of attaining consensus, particularly as regards networking the computing industry. Industry supports both developing common open standards and the protection of intellectual property rights for proprietary standards.

*The primary role of governments with respect to interoperability should be to provide encouragement towards consensus on appropriate standards, and in particular to encourage international initiatives in this area. Private sector initiatives should be encouraged, and actively supported by public procurement, while ensuring that these procurements are open to all market participants on a non-discriminatory basis.*

*The development of open standards by governments and the private sector, with appropriate emphasis on fair compensation, is important. Governments may need to maintain an oversight role to ensure conditions of non-discriminatory access.*

### **Universal service and public access in the information society**

As the information society develops and more elements of the economy, education, information and entertainment are linked to networks it is increasingly important that the less advantaged and vulnerable members of society are not excluded or left behind by being “unconnected”. The concept of universal service needs to be reviewed and possibly developed and adapted to reflect the shift from service specific networks to that of multiple alternative networks, each capable of delivering an ever broader range of services. The difficulty in expanding definitions is that it is not simple to provide service specific definitions because of the wide and expanding range of services. Linked to the notion of a widened definition of universal service is the concept of “public access” to new services. The scope of such “public access” may well include a variety of resources, components and services which extend far beyond that which is commonly described as telecommunications.

*As regards the scope of universal service it is recommended that existing concepts be reviewed to consider what new services may be necessary for people as citizens and consumers in the information society. Particular attention must be paid to ensure that all segments of society, and geographic locations within a country, have the opportunity to access advanced information services at a reasonable price.*

*Consideration should be given to setting up public access points in areas such as educational establishments, libraries, community centres and museums, providing new, open gateways to the information society: these would provide access to computer terminal, software, applications and broadband links to the Internet and other on-line services.*

*In definitions of universal service, the identification of particular services with a particular network technology or infrastructure should be avoided. Subsidies for universal service provision, if necessary, should be transparent. Consideration should also be given to mechanisms of competitive bidding so as to guarantee the best and most innovative operators and service providers are awarded associated subsidies and funding where appropriate.*

*Governments are encouraged to promote information society financing frameworks drawing on initiatives and support from various bodies concerned with, for example, education, health, the arts, information technology and computing.*

*As far as advanced telecommunications access is concerned the industry should be encouraged to meet the requirements of public institutions and associated public access points commercially. In this context safeguards concerning open and competitive tendering and transparent contracts may be relevant.*

### **Pricing**

Pricing structures and pricing policies may be one of the most important policy areas with regard to national and global information infrastructures. Network based applications will only develop if the correct pricing signals are provided to service providers and users. The only practical way of identifying efficient cost-oriented prices in an economy characterised by shared network resources is through competition. Non-competitive markets suffer from a lack of responsiveness to new demands and do not encourage innovative pricing packages. Pricing structures need to take into account the fact that usage patterns of communication networks are changing drastically, especially as regards significant increases in levels of use and decreased predictability in connect and peak times.

Inefficient international pricing structures have negative implications for the development and diffusion of new network based applications and market development. In particular this concerns the system through which operators compensate each other for the termination of international calls.

*Market opening should take place in conjunction with price rebalancing but should not be unnecessarily delayed by such requirements. Since efficient pricing structures will be best achieved through competitive markets, governments should aim, primarily, to accelerate the process of competition. There may be reasons to maintain oversight on pricing issues until competitive markets have emerged.*

*New and flexible pricing structures need to be adopted to reflect the fundamental change occurring in network usage patterns, especially as regards time based pricing.*

*Special efforts must be made to attain cost-oriented international accounting rates and pricing principles for international access, although adjustment periods may vary according to differences in the development of the countries concerned. It should also be recognised that alternative international interconnection arrangements will become increasingly significant. The rapid introduction of competition in the international facilities market would provide the best means to meet the urgent need to restructure international telecommunication pricing practices.*

### **Institutional and regulatory structures**

In order to be effective and coherent, regulatory structures need to mirror the market structures which they regulate. Radical transformation implied by GII-GIS includes both new relations between networks and services and the brand new technologies and applications which do not 'fit' into most existing policy categorisations. Since it will become increasingly difficult to maintain technical or practical separation between broadcasting and telecommunication markets, and given the dynamics of convergence of infrastructures and services, governments may need to reconsider new relationships between existing legislative and regulatory frameworks.

*A review of the institutional and regulatory frameworks governing licensing, access and use of infrastructures and provision of service may be required. Such a review would need, in particular, to take a fresh and forward looking perspective on the implications of the changing relationship between the service of carriage or transmission of communications, and those services which are essentially concerned with the provision of the content of such communications for public consumption.*

*Given the phenomenon of convergence, governments should review, if necessary, their existing regulatory structures in order to streamline them and ensure that they are adapted, where necessary, to continue to achieve in the most effective way, the given policy goals.*

### **Developing economies**

Access to the GII-GIS is a global issue which must encompass all communities and in particular the developing economies. Otherwise there is a risk that the development gap will increase. The concept of GII must be seen as a mechanism to enhance world-wide co-operation in developing infrastructures and applications.

*As part of the GII-GIS policy framework, OECD Governments must explore ways to enhance co-operation with governments and social partners in developing economies as a matter of some urgency. This needs to involve the co-operation of both local and foreign commercial interests.*

*OECD governments should provide regulatory training to developing economies, either bilaterally or through regional organisations. This must include exchange of information, know-how and experience as well as practical training.*

## **2. APPLICATIONS AND SERVICES IN THE GII-GIS**

### **Multimedia content and intellectual property rights**

The legal framework within which intellectual content is produced, shared and traded will be even more vital in an information economy characterised by network based production and consumption, and digital manipulation and reproduction. The practical complexity of managing the large number of copyrights in multimedia products is sometimes cited as a problem facing the development of new services. However, the problem of rights clearance for multimedia products has also been successfully surmounted in a number of cases by creators of multimedia products. The challenge for Internet-based products is that multimedia services incorporate content covered by different degrees and kinds of copyright. This is a particularly difficult question in regard to international trade in services, as rights for different contents differ between countries; greater harmonisation of IPR regimes among countries would facilitate this process.

*Governments should adapt intellectual property law as appropriate to reflect the changes which digitalisation of works has brought about. In this context Governments should bear in mind the interests of creators and of rightsholders in content for an effective copyright regime, as well as taking into account the interests of distributors and users.*

*In adapting intellectual property laws, Governments should also recognise and encourage new technological solutions becoming available to meet the challenges brought about by increasing digitalisation and network diffusion of content. Such adaptation should take account of the globalisation of networked digital content and the extent to which it can ignore physical territorial boundaries.*

*In this regard Governments should take note of the recent WIPO Conference on Certain Copyright and Neighbouring Rights Questions whereby, in December 1996, two new Treaties were adopted: the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. The new WIPO framework provides a response to the new challenges raised by GII-GIS.*

## **Electronic commerce**

The rapid development and diffusion of electronic commerce applications depends on ensuring the availability of the infrastructure and of access to and use of infrastructures for applications and services. There is also the need for system security, authentication software, processes to ensure confidentiality, message delivery reports, etc., which are not subject to repudiation. The concept of electronic commerce, although it includes payment issues, is a much wider concept encompassing a range of transactions which are embedded in modern society.

*Without prejudicing existing frameworks for commercial transactions, mechanisms and legal frameworks, particularly concerning the requirements for trust and integrity, will need to be adapted for new network based transactions and for the storage and manipulation of commercial data in digital electronic form.*

*The fast rate of technological change and innovative development of applications implies that policy frameworks regarding electronic commerce must remain flexible. There needs to be a continuous dialogue between government and the private sector on developments which impact on security and integrity of networks and commercial services.*

*Furthermore, given the global nature of electronic commerce and the difficulty of determining national jurisdiction in the event of legal disputes, dispute settlement mechanisms will be necessary at the international level. OECD governments need to encourage present international commercial bodies to formulate effective dispute resolution procedures for electronic commerce.*

## **Transaction safeguards**

Commercial transactions have different requirements: for example, some require anonymity, while for others it is important that they are well documented. Some require complex documentation, acknowledgement and registration, and others more simple processes. Thus the whole range of safeguards which already exist to protect buyers in the market, as well as those required by government to ensure

proper record keeping, etc., need to be adapted for on-line transactions. Governments, as well as the private sector, have an important role to ensure security on networks both from the perspective of curtailing criminal and illegal activity, and to ensure confidence in economic structures and activities.

*Companies should be encouraged to continue exchanging information with governments as appropriate on security and security solutions.*

#### *Security of services: Cryptography*

Cryptography provides a powerful tool to meet many of the requirements of electronic commerce and where properly implemented can allow for information to remain confidential, help maintain integrity of information, and provide a means for authentication. It is recognised that it is necessary to balance legitimate commercial needs for encryption against the requirements of law enforcement. Cryptography will be important to the provision of security, privacy and intellectual property protection in the GII and the growth of many applications, such as electronic commerce.

*Market forces should serve to build trust in reliable systems, and government regulation, licensing and use of cryptographic methods may also encourage user trust.*

*Markets need to develop solutions for data security. However, in order to protect the public interest, such as the protection of personal data or electronic commerce, governments may need to implement policies requiring cryptographic methods to achieve a sufficient level of protection, while responding to the needs of law enforcement authorities. Nevertheless, it is important even in those circumstances to allow users and market forces to determine the appropriate safeguards, while respecting existing legislation.*

*It may be necessary for governments to play a role in determining with the private sector the appropriate technical structure to support global, interoperable digital signatures and time-stamps. OECD governments need to encourage relevant bodies to consider how to facilitate dispute resolution.*

*OECD countries should take note of the OECD Guidelines on Cryptography Policy in order to encourage the development of internationally compatible frameworks as soon as possible, and to facilitate the growth of electronic commerce and open global markets, taking into account the need for governments to maintain their existing responsibilities.*

#### *Protection of privacy and personal data*

Privacy requirements in the development of electronic commerce are important because the development of new applications and services on global information infrastructures will increase the amount of personal and business-related information gathered, stored and transmitted electronically by governments, public institutions and businesses. Development of GII is making it even easier to collect, analyse, distribute data, and forward them across national boundaries, resell or reuse them, or integrate them with other databases collected for unrelated purposes. Thus, open networks, such as the Internet, may, without adequate safeguards, pose serious privacy problems.

*Taking note of the complexity of dealing with privacy questions in the context of the GII, Governments need to respond to increasing new concerns about privacy. At a minimum, Governments need to ensure broad national guidelines or modifications of existing national guidelines on privacy in accordance with the 1980 OECD Privacy Guidelines. Guidelines should be based on the principle of protecting individual privacy without imposing unnecessary burdens on business and community. In particular: (i) transparency must be ensured as to the use of personal data; (ii) limitations, where required, should be imposed on the secondary use of personal data and (iii) rights to access and to correct one's own personal data must be clarified, and requirements to ensure accuracy of data must be set forth.*

*In order to allow for open transborder transmission of legitimate and useful personal databases and to address the issue of restrictions on the export of data in general, consensus is urgently needed at the international level on whether the OECD Privacy Guidelines are up to the challenge which lies ahead on the GII and/or whether further international principles on the protection of the individual are required. This could constitute a first step towards development of more detailed, international agreements and could encourage development of national and international business codes of privacy and other self-regulatory initiatives.*

### ***Illegal and harmful content***

The development of the GII-GIS can significantly contribute towards the positive promotion of diverse social identities and values. But the ease in distributing content, copying it and accessing it has also raised concerns about the diffusion of material viewed as offending social norms. It is clear that the traditional means by which governments have attempted to regulate illegal and harmful content are being challenged by digital means of production and distribution. Experience has shown that, while necessary to implement policy responses to the use of networks in disseminating harmful and/or illegal content, these policies need to be proportionate to the problem and should ensure that the benefits that can derive from the development of new services are not jeopardised and are in fact encouraged in order to outweigh any negative aspects. Proposals have also been put forward for the OECD to provide an overview of national initiatives and examine the necessity and eventual possibilities for increased international co-ordination.

*The issue of illegal and harmful content over global electronic networks needs to be addressed in a manner which is proportional to the problem and which recognises the importance of the principle of free speech. The identification and implementation of appropriate and effective global solutions requires international co-operation.*

*Although unfortunately open to certain forms of abuse in this context, it needs to be emphasised that the Internet is still in an early formative stage. It is a fragile and highly dynamic medium whose growth and development, together with its promise of enhancing economic productivity and social well being, could be severely stifled by excessive and/or premature regulations. Governments need to bear this risk in mind in carefully considering which regulatory tools are appropriate or relevant to the Internet.*

*On the other hand, positive developments which should be considered by OECD governments include self regulation initiatives by Internet service provider associations together with software based classification systems which allow users to control access and impose their own restrictions. Furthermore, increasingly sophisticated technological means are available to track the “electronic trails” by which illegal activity in this medium can be identified. Serious consideration should be given to technical tools to filter out content that users might find offensive or that should not be accessed by minors.*

*Consideration should be given to the concept that information on the Internet should be allowed the same free flow as paper based information and any restrictions should respect fundamental rights such as free speech and privacy.*

*Responsibility for dealing with illegal activity over the Internet should remain with the existing competent authorities such as the police and courts. These may be significantly aided by international co-operation and new technologies applicable to solving electronic crime.*

### **Cultural and linguistic diversity**

Media ownership restrictions in OECD countries have traditionally involved, not only the goal of ensuring a degree of pluralism within the national boundary, but also, of protecting national and regional culture. Such ownership restrictions may be expected to come under pressure vis-à-vis their effectiveness in a global information society. Open competitive markets must not be viewed as antagonistic to concepts of cultural and linguistic diversity. On the contrary, in these markets where there is vibrant competition, low prices and rapid service diffusion, domestic industries have an incentive to produce content at a much more rapid rate, and of higher quality, than in closed markets which tend to be limited in size.

*Dynamic competition could be one of the important means to promote cultural and linguistic diversity and rapid development of new, networked multimedia services through enlarging the market base and through price effects. Cultural and linguistic diversity is important in the development of global electronic commerce.*

*Maintaining and enhancing cultural and linguistic diversity will also continue to be an important policy goal for governments. Current mechanisms may need to be progressively adapted for the GII-GIS environment. Initiatives and projects which provide positive inducements and support for content production in the context of dynamic competition are recommended. In a competitive environment the preservation and diversification of cultural and linguistic diversity may require use of different means amongst which it will be necessary to find an appropriate balance.*

### **Pluralism, culture and cross-media ownership Rules**

Pluralism is normally perceived to be an essential element of society in OECD societies allowing for a level of diversity of opinions, ideas and information available to the public to enable them to make relatively informed choices. In nearly all cases policies for pluralism also include elements of competition goals and economic efficiency, especially in so far as these are often complementary to the pluralism goal.

Pluralism concerns are often closely linked to limits on foreign ownership participation in national broadcast markets.

*The review and, if necessary, the reform of cross-ownership rules is called for. This needs both to reflect and encourage the development of new multimedia markets. This does not necessarily imply simply lifting restrictions (although in many cases this may be appropriate) but rather a refocusing of instruments, particularly as regards the measurement of control and influence.*

*Over time, as convergence progresses, assumed distinctions between markets based on the technical nature of the transmission media could require revision. The implications of the distinction between broadcast and narrow or monocast service may need to be re-considered.*

### **Government as a catalyst**

The government's role in providing the optimal conditions for the development and deployment of infrastructures, applications and services is not limited to the establishment of the appropriate regulatory framework and safeguards. The Government also has an important role to play as a catalyst for enhanced use and development of the information society. As a large potential user of information and communications services the public sector itself has an important role to play in stimulating the development of and investment in new network-based services and information infrastructures through providing the critical mass for new applications.

*Governments should play an important role as catalysts in promoting and encouraging investment by the private sector and in stimulating new demand. Governments should promote strategic research and development programmes, launch user-oriented pilot projects and promotional activities, provide test-beds for experimentation and promote international co-operation in these areas.*

*Governments are encouraged to use new electronic delivery systems and software to provide the means to significantly enhance the internal efficiency and productivity of public administrations. These should also be used externally to enhance public awareness of Government programmes and facilitate filing and submission for citizens of government documents and applications.*

*Governments are also encouraged to use new electronic media to the greatest possible extent for the delivery of their core public services. In particular this would concern public information and cultural resources, databases for health services, web sites at local, regional and national levels and public libraries and databases.*

*Governments have a role in stimulating public demand for on-line services and encouraging social adaptation to the new electronic environment via public information and training programmes on the increasing range of services and public access points available. This is central to the policy goal of promoting lifelong learning and improving health services and standards of living for all citizens and relates to the previous recommendations concerning universal access to public gateways and resources of the information society at public access points.*

## **Stimulating new demand**

Alongside considerations of supply side policy reforms for the development of the GII-GIS, demand side initiatives and concerns also need to be addressed. On the one hand Governments must adapt, both structurally and substantively, a broad range of policy areas and regulations in order to create the right conditions for the market to meet the already existing and growing demand for new consumer services and new ways of doing business. Governments may also find they have a role to play in stimulating and encouraging demand for the new services which the GII-GIS is making available.

*Governments need to examine the issues which relate to conditions which may encourage or retard growth in the demand for GII-GIS applications and services, as a means of further accelerating the creation of wealth and employment in the information society. Since data in this area are limited at present, this implies the need for a greater priority to be put on further research and analysis in this area.*

*In this respect governments should strengthen the economic, regulatory and statistical analysis as regards demand. In addressing these issues the OECD can play a vital role. In this context the OECD has already established a new Working Party on the Information Economy and a statistical panel which is also focused on these issues.*

## **A need for fundamental policy review**

The economic and social benefits of information infrastructures and of multimedia services and content are dependent on the development of a market structure being in place which supports diffusion of new services, supports convergence of industries and services, supports efficient pricing structures, and supports employment creation and productivity growth. Governments need to take a pro-active response to GII-GIS developments and applications. The challenge in the development of global information infrastructures and global information society is that nearly all areas of the economy are being impacted.

*Given that it is and will be primarily the private sector providing the stimulus and investment in the GII-GIS, it is important for governments to devise and maintain policies in each applications sector which will continue to promote robust business investment and development, and to progressively open all information society sectors more widely to all private investment.*

*It is, in general, recommended that governments begin a fundamental review of how developments in GII-GIS can be harnessed in a number of different areas and industry sectors, and what policy changes may be required to facilitate change and use technological changes to optimally enhance economic welfare.*

## Conclusion

There is recognition by governments that Market competition must form the basis of GII-GIS. Inefficient markets, high prices, and insufficient competition will all slow down the development and diffusion of new applications and, in turn, significantly dilute the benefits of GII-GIS. Present communication market structures and policy frameworks in many OECD countries are not yet conducive to support the rapid and efficient development of information infrastructures and multimedia applications or the development of electronic commerce. The development of a network-based information economy requires:

- the availability and diffusion of high speed interactive infrastructures;
- fair access to and use of infrastructures for both customers and service providers;
- the interconnection and interoperability of infrastructures and services;
- growth and development of multimedia services;
- transaction and information safeguards which ensure privacy, confidentiality of information, and security of payments, and protection of intellectual property.

Government action is important since the developments taking place in the information economy can be harnessed to better meet some of the key challenges they face such as the need to stimulate sustainable economic growth, the need for greater social cohesion and issues arising from an ageing population. Above all, there is a need, in a large number of policy areas, to examine issues within the context of the development of global markets and thus in the context of international co-operation. The OECD, in its work "Technology, Productivity and Job Creation", argued that by facilitating the transition to a new growth model, OECD countries could stimulate long term productivity growth and employment. It is this vision which can become reality by taking concrete and rapid changes to make appropriate reforms for implementing global information infrastructures and global information society.