

Regulatory implications of Broadband

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## CHAIR'S REPORT

1. At the invitation of the Secretary-General of the International Telecommunication Union (ITU), a workshop was held in Geneva from 2-4 May 2001, to discuss the economic and regulatory implications of broadband and its likely impact on ITU Member States and Sector Members. The Workshop was organized by the Strategy and Policy Unit (SPU), under the Secretary-General's "New Initiatives" programme. Some 27 experts participated in the meeting, representing a range of regulatory and policy-making agencies, Public Telecommunication Operators, academic institutes and others. Those present at the meeting participated in an individual capacity. Prof. Deborah Hurley, Director of the Harvard Information Infrastructure Project, Harvard University, chaired the meeting.

2. A background issues document, including a suggested list of questions for discussion, had been prepared in advance of the Workshop by the secretariat of the ITU. In addition, a number of country case studies had been commissioned, covering Australia, Italy, Malaysia and South Africa.<sup>1</sup> These were presented, along with the experiences of other countries and regions, notably Canada, India, the Republic of Korea and the European Union. This was the first ITU meeting on this emerging topic and it was agreed that the information provided and the discussion generated were extremely useful, especially to those currently involved in drafting national policies.

3. The meeting commenced with a brief discussion of the **definition** of broadband. There was consensus that the focus should be squarely on the services to be provided via broadband. Although governments have been under some pressure to define broadband in terms of speed or with reference to a particular technology or technologies, there was agreement that broadband policy might, more usefully, be arrived at by identifying the applications, such as entertainment, health care, education, government services, or commercial applications, to be provided. After the relevant services are identified, the technological and economic options available to provide those services could then be investigated. Ultimately, 'broadband is what broadband does', and what it does is (finally) facilitate convergence.

4. As anticipated, at present the **dominant technologies** employed to provide broadband services are ADSL (asymmetric digital subscriber line) and cable modems. Although cable modems are widely used in Canada and the United States, this is not replicated in other parts of the world, largely for the reason that cable TV penetration in most countries is very low. Generally, therefore, broadband is available throughout the world via ADSL today. Clear recognition that ADSL is the current dominant technology for broadband will help with planning, commercialization, and policy-making. At the same time, it is widely acknowledged that ADSL and cable, while currently available, both present technological challenges, and function as transitional technologies on the road to other broadband technological options, such as fibre optics, wireless, and satellite. Interesting information was presented in the workshop participants agreed that, given the benefit of these rapidly evolving dynamic and flexible technologies, it might be most useful to think of this wealth of technological options as forming a mosaic from which countries and companies can choose to provide the desired services in the most effective manner.

5. There was a wide-ranging discussion of the **economic and market issues** connected with broadband. There was a strong emphasis on market-based solutions, especially in Australia and the EU. Experts from developing countries spoke eloquently, however, on the insufficiency of sole reliance on

<sup>&</sup>lt;sup>1</sup> All of the meeting documents are available on the ITU website at: <<u>http://www.itu.int/broadband</u>>.

market-based solutions for their nations. Competitive market structures may not yet be sufficiently robust to carry the task alone. Government will continue to have significant roles to play in providing broadband services, articulating national visions, and stimulating consumer demand. For all regions, developed and developing, there is still uncertainty about elaborating appropriate business models for delivering broadband services.

6. One key regulatory issue raised was that of **demand side stimulation**. The rate of uptake is sometimes much less than the level predicted on the basis of availability. In Denmark, for example, the government is developing a policy, for release in June 2001, with the objective of stimulating uptake through government use of broadband applications in delivering its own services (e.g., e-government, health care, etc.). This is intended to demonstrate the uses and possibilities of broadband. The variety of programmes to stimulate demand upon which governments have embarked is wide-ranging and imaginative. Examples of cost-effective demand stimulation strategies include:

- A federal government competition in Canada to designate 12 "smart communities", which had prompted widespread interest for a relatively modest financial outlay;
- A star-grading scheme for certification of "smart buildings" in Korea;
- In Malaysia, buses fitted-out for instruction in the use of the Internet bring experience to remote and under-privileged areas. A fleet of boats to ply the coast and major rivers is soon to be launched.
- 7. Where demand has taken off, it appears that the main **applications** are:
  - Education e.g., in Korea, where expenditure on broadband access for the Internet is considered an important family investment.
  - Entertainment applications, such as games and interactive TV, are often an early driver of residential demand.
  - Voice over DSL (VoDSL) again, this is becoming particularly popular in Korea.
  - MP3 music file swapping and other peer-to-peer applications.

These applications suggest that the age profile of broadband users is likely to be younger on average than for other communications applications.

8. In many countries, **flat-rate subscriber charges** have proved to be one of the main drivers of demand. In Korea, for instance, broadband is cost effective relative to dial-up for subscribers making three or more hours of use per day. Elsewhere, high prices for access are suppressing demand. There is a concern on the part of incumbent telecommunication operators that flat-rate broadband may limit the scope for increasing revenue from subscribers. In many developing countries, where the impact of falling revenue from international calls is undermining the business plans of national operators, raising domestic call revenue is an urgent requirement.

9. All governments must grapple with making the best use of limited funds available for communications services, particularly in **developing countries**. In many countries, such as China, for instance, the Government is currently concentrating on providing basic telephony access. In South Africa, the definition of universal access is being changed to reflect progress in extending service availability, but still means the availability of a telephone within a 15-minute walking distance from home. The market in many developing countries is hampered by the lack of consumer spending due to poverty. While, this does not imply that there is a necessary sequence of first narrowband and then broadband, it was pointed out that although broadband presents an efficient option at the national level it might not be affordable at the individual level. Therefore, China is promoting the development of both broadband and narrowband access. In India, for instance, cybercafés are proving immensely popular, accounting for perhaps 30 per cent of Internet use. The aggregation of demand is creating a need for a broadband backbone network.

- 10. The issue of **content** was repeatedly raised in discussion, the main issues being:
  - The desire among many countries to maintain their cultural and linguistic heritage,
  - Constraints on access to content, for instance where existing media companies own exclusive rights to compelling content such as sport and movies.
  - A more general lack of content geared towards local markets raises concerns about appropriate business models.

11. A number of different **national strategies** for rollout of broadband were discussed. Three main types were recognised:

- "Light touch regulation", where the principal role of government is to create the right environment for market development.
- "Extended access" strategies, where governments have identified specific geographical areas, or parts of the community, which may not be among the first to be served by the free market and are pushing a strategy of outreach or subsidised access. For instance, the Canadian Yukon territory probably has the highest level of broadband subsidy per capita of anywhere in the world.
- "Comprehensive national plans" where governments are elaborating a master plan for broadband rollout. This involves bringing together many different actors, such as ministries, infrastructure providers, service providers and user groups.

A number of examples of the latter strategy were examined during the workshop, including the Republic of Korea and Malaysia. In other countries, such as Denmark and Canada, national strategies are currently under development. Because of rapidly changing technologies and market conditions, national strategies and regulation would need to be flexible and frequently reviewed.

12. At the sub-national level, **city governments** have sometimes taken a lead in promoting broadband rollout to their communities. Examples cited included Stokab in Stockholm, and the Multimedia Super Corridor in Malaysia. City and local governments often have considerable assets that are potentially very valuable, such as pipe and ductwork, sewer systems and high sites, as well as an understanding of the local community. In India, a number of states had made available rights of way alongside roads in order to promote infrastructure deployment.

13. A major focus of discussion was on **regulatory implications**. It is useful to distinguish between regulatory issues associated with controlling access to the market and those associated with controlling market behaviour. The latter include interconnection, cross-subsidisation and unbundling of the local loop. On this latter point, diverse views were presented. Some felt that it was essential in order to gain maximum values from existing (copper) networks. Others felt that it might have a deterrent effect on investment. Korea, for instance, which has the highest ADSL penetration rate in the world, has not yet unbundled the local loop.

14. The trend towards **convergence** raises additional questions of how markets are defined, lines of business restrictions and joint-ownership issues. Some countries, notably Malaysia, have moved towards converged regulatory structures as a way of handling these policy issues. Some countries remain unsure of what regulatory and institutional structure to develop. Development of broadband markets may also raise concern about the creation of new bottlenecks, for instance for set-top boxes. Some participants identified a resurgence of policy interest in the separation between content and carriage as a way of overcoming the effects of a tendency towards natural monopoly in broadband. Examples such as Stokab show that it is possible to separate the provision of wholesale infrastructure ('dark fibre') from the provision of services over those networks. This approach is sometimes referred to as creating a "Loop Co". At the same time it was recognised that it may become increasingly difficult to make a distinction between content and carriage.

15. The principle of **technology-neutral regulation** underlies much current policy development. However, it remains unclear just what technological neutrality implies. It may be defined as regulation that neither imposes nor discriminates in favour of the use of a particular type of technology, though not all were comfortable with this definition. Some participants argued that while the European Commission is unbundling the local loop of telecommunication operators, it is not requiring open access to cable networks. Technology-neutral regulation could be seen as a step on the path towards full deregulation, in which sector-specific regulation is substituted by competition law. Some felt that the IT industry has flourished in a largely unregulated environment and this benefit should be extended to all convergent markets rather than continuing with artificial distinctions. Others however saw a continuing and crucial role of government; particularly in countries where the market economy is still relatively fragile and where equity concerns need to be addressed.

16. In **communications policy-making**, the assumption has long been held that communications services tend to be provided first in urban centers or developed countries and then, gradually over time, migrate to rural, remote, and less developed areas. Workshop participants were encouraged to reverse this notion of migration from privileged centers to the edges and to imagine, instead, a world with no edges, a *mobius strip* of advanced communications capability. Arguably, there are rural, remote, and less-developed regions that have a greater need for broadband capacity than developed urban hubs to obtain, for example, medical and educational services. The points were made that the population of Rankin Inlet in northern Canada need telemedicine and tele-education, while residents in Toronto have easy access to hospitals and educational institutions. Similarly, it is difficult to provide sufficient medical services in the interior of Australia, due to a shortage of doctors in that area. Broadband services to these areas may provide larger incremental benefits, reduce the digital divide, distribute social benefits more equitably, and encourage civic participation.

17. It was agreed that the development of broadband presents new regulatory challenges for ITU Member States. A possible **role of the ITU** was discussed. The main area for ongoing ITU work relevant to broadband is likely to be on standards development, especially in areas like multimedia services, quality of service, coordinating telephone numbering and email addressing (ENUM) and billing. ITU stewardship of scarce resources, such as spectrum or numbering plans is also highly relevant in this respect. In the Development Sector, advice to regulators on development of appropriate structures and the identification of future regulatory issues is likely to prove valuable. A number of participants raised concerns over Internet domain name governance, suggesting that the ITU could help developing countries to play a more active role in ICANN. The ITU can also play a valuable role in information sharing, especially among regulatory agencies. If we take the main impact of broadband to be convergence, then there may be a need to undertake in-depth analysis of the various forms and market implications of convergence in order to further light the regulatory implications of broadband.