

**QUESTION 10-1/1**

*Impact of the convergence  
of telecommunication,  
broadcasting and information  
technologies*



**ITU-D**

STUDY GROUP I

3rd STUDY PERIOD (2002-2006)

*Report on the impact  
of the convergence  
of telecommunication,  
broadcasting and  
information technologies*

## THE STUDY GROUPS OF ITU-D

The ITU-D Study Groups were set up in accordance with Resolutions 2 of the World Telecommunication Development Conference (WTDC) held in Buenos Aires, Argentina, in 1994. For the period 2002-2006, Study Group 1 is entrusted with the study of seven Questions in the field of telecommunication development strategies and policies. Study Group 2 is entrusted with the study of eleven Questions in the field of development and management of telecommunication services and networks. For this period, in order to respond as quickly as possible to the concerns of developing countries, instead of being approved during the WTDC, the output of each Question is published as and when it is ready.

### **For further information**

*Please contact:*

Ms Alessandra PILERI  
Telecommunication Development Bureau (BDT)  
ITU  
Place des Nations  
CH-1211 GENEVA 20  
Switzerland  
Telephone: +41 22 730 6698  
Fax: +41 22 730 5484  
E-mail: [alessandra.pileri@itu.int](mailto:alessandra.pileri@itu.int)

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*Impact of the convergence  
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STUDY GROUP 1

3rd STUDY PERIOD (2002-2006)

***Report on the impact  
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**Report on the impact of the convergence of telecommunication,  
broadcasting and information technologies**

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## **1 Statement of problem or situation**

Convergence has become one of more heavily used words in ICT industry. The word is used to describe almost any trend representing the ever closer contact between the IT, broadcasting and telecommunications sectors. Regulations in these three sectors face new challenges. Technological convergence, or the development of network interoperability, constitutes a major challenge to those responsible for legislating and regulating the different sectors.

The question posed is whether or not it is relevant to maintain different regulatory systems according to the level of convergence between the three sectors.

## **2 Questions and issues proposed for study**

Rather than making a choice between tearing up current regulatory structures or sticking to the status quo, an evolutionary path should be followed. If the problems cannot be solved within the current legislative framework, it may be necessary to amend the legislation on a case by case basis in advance of possible wider changes. When a reform in institutional design becomes necessary, its objective should be strong but flexible and unified regulation of networks with enlarged skills in competition law.

The study group has studied the following questions:

- 2.1 Is there general agreement to this evolutionary approach in the short term?
- 2.2 What else can be done to make current structures work better?
- 2.3 What will be the key regulatory issues in the digital future?
- 2.4 What regulatory approaches are likely to be appropriate?
- 2.5 How soon, and under what circumstances, will it be necessary to make fundamental changes to regulatory method and framework?
- 2.6 What are the implications for the regulatory framework?
- 2.7 How to manage the transition period?
- 2.8 What regulatory framework is most likely to be generally appropriate once services become substantially converged?
- 2.9 How to evaluate the performance of regulatory structures?

## **3 General framework**

Convergence has multiple dimensions: technological, but also economic, social and political. One of the most important dimensions of convergence is content – carrier convergence, which has resulted in the blurring of the traditional distinctions between telecommunications and broadcasting and between content and carriage. The result is that distinctions between different transmission infrastructures are artificial and will create disincentives for investment.

On the regulatory side, one of the first applications of convergence has been its use as a tool to foster competition, allowing new operators to offer a bundle of “traditional” telecommunications services and broadcasting services on the same network. This possibility was generally denied to the incumbent to further stimulate the creation of alternative networks bypassing the bottleneck originated by the lack of competition on the local loop.

The dramatic growth of the Internet and the almost unlimited possibilities it offers has radically changed this approach and led to the creation of a different regulatory scenario. The European experience in this area is very recent and deserves to be carefully evaluated.

A new regulatory framework has been adopted by the EU, in order to respond to the convergence trend (i.e. the trend for similar services to be delivered over different types of network) by covering all electronic communications networks and services within its scope.

The central feature of the new system is that a coherent regulatory framework will apply to all transmission infrastructures, irrespective of the types of services carried over them (a "horizontal" approach). The new framework therefore covers all electronic communications networks (including those used to carry broadcasting content such as cable television networks, terrestrial broadcasting networks, and satellite broadcasting networks), associated facilities and electronic communications services.

It should be noted that content services (e.g. broadcast content, e-commerce services) are not covered by the framework. Thus the regulation of content broadcast over electronic communications networks (e.g. radio and television programmes or TV bouquets) remains outside the scope of the framework.

The new framework establishes a more flexible set of rules at EU level, and gives national regulatory authorities (NRAs) a large degree of flexibility to choose the tools most appropriate to deal with regulatory concerns as they arise.

Currently, there are three main areas having serious impact on convergence:

- 1) diffusion of broadband services on fixed networks through xDSL systems;
- 2) start up of new generation mobile services: UMTS – IMT 2000; and
- 3) introduction of broadband wireless services mainly through Wi-Fi.

**a) xDSL:** Following large investments during the first part of the 1990s in fibre installation almost everywhere in the most industrialized countries, it now seems evident that the development of such networks is quite risky. It is difficult to evaluate the return on the investments, as nobody knows yet the true appeal of the available content. Furthermore, there are quite often problems with competition law, as the development of new network infrastructures by the incumbent operators may be considered a reinforcement of existing dominant positions.

With the crisis of the sector, new cheaper instruments were needed. xDSL developed as the most interesting technology with broadband always on connection to the Internet, providing at the same time availability of voice telephony. However, crucial to the development of competitive xDSL is the unbundling of the local loop to be set in national legislations.

Broadband through fixed network implies availability of content customers ready to pay for. The two problems related to this issue are the availability of content and copyright issues (music, movies, etc.)

**b) New generation mobile services:** these services are starting just now and their development is conditioned by the cost of the licenses and the prices paid by the operators for the frequencies. The development of WAP and the GPRS services seems to have reduced the appeal for 3G but more time is needed to be able to make a serious evaluation.



c) **Wi-Fi** allows wireless broadband access to the Internet in so-called hotspots through mobile personal computers. The system can also have other uses: indoor coverage for corporate use, residential home coverage and universal access in remote areas. Wi-Fi operates in the bandwidth 2.4 Ghz, and 5 Ghz on a shared basis. The frequency bands are mainly unlicensed and unprotected and so very economic for operators and users, but subject to interference and with no guaranteed quality levels.

Digital television is now becoming a reality; this constitutes a further step forward in the “converging” communications world. On the technology side there is a strong need for open and interoperable platforms, with a central role for international standardization activities.

Digital television can also effectively contribute in bridging the Digital Divide: the average TV penetration, in particular in developing countries, is higher than PC penetration and generally a TV set is considered as more user friendly than a PC. Furthermore, receiving digital television will probably be cheaper than owning a PC. Public interest applications such as e-government, e-learning and remote health delivery will be more easily widespread.

There is a serious opportunity for proactive regulatory intervention to foster development: the challenge will be to achieve the right balance between attractive business models for the industry, effective protection for rightholders and users’ rights to have access at fair and reasonable conditions to the new services.

## 4 Convergence trends

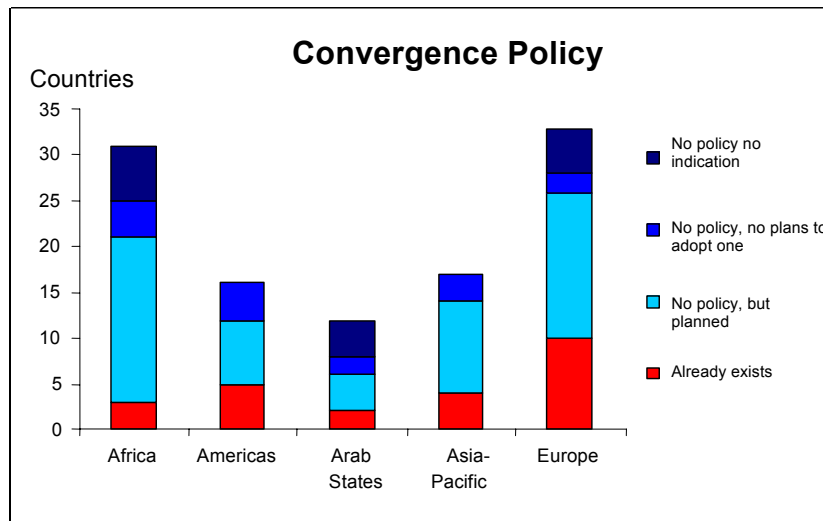
Based on results from the annual ITU telecommunication regulatory survey 2003, various regulatory aspects of convergence are highlighted in the figures below. These figures are based on the number of countries who responded to convergence-related questions. These figures are indicative as the situation in some countries may have changed since they responded to the survey, and therefore some figures were adapted.

### 4.1 At the policy level

22% of countries worldwide have adopted a new policy to address the convergence of telecommunications, IT and broadcasting, 50% of the countries that haven’t adopted such a policy are planning to do so in the future.

*Breakdown by region:* In Africa, 10% of the countries indicated that a convergence policy was already adopted, in the Americas: 31%; in the Arab States: 17%, in Asia-Pacific 24% and in Europe: 30%.

**Status of convergence policies by region (2003)**



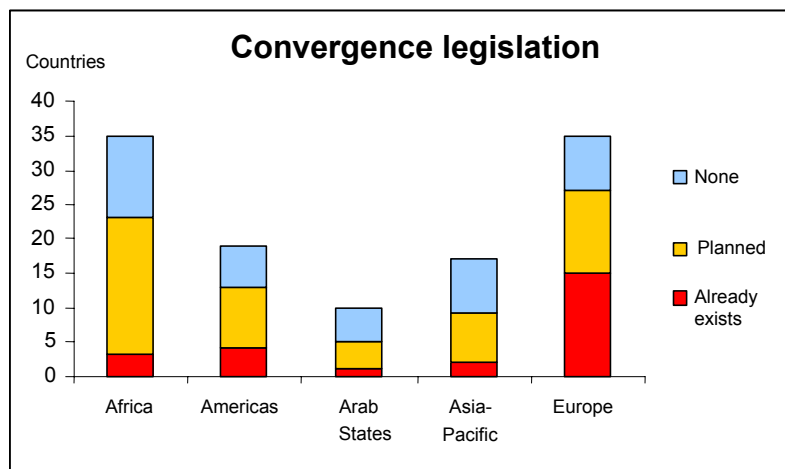
Source: ITU World Telecommunication Regulatory Database.

**4.2 At the legislative level**

22% of countries worldwide have adopted a legislation that addresses convergence, 45% are planning to create such new legislation and 34% have no plans to do so.

*Breakdown* by region: in Africa: 9% of the countries have adopted a convergence legislation (57% are planning to do so), in the Americas: 21% have done so, 47% are planning it; in the Arab States: 10% have a convergence legislation, 40% are planning one; in Asia-Pacific: 12% have one and 41% are planning it; in Europe: 43% have adopted one and 34% are planning to do so.

**Convergence legislation by region (2003)**



Source: ITU World Telecommunication Regulatory Database.

### 4.3 At the Regulatory authority's level

It appears that among the regulatory authorities that responded (not all of them answered), 26% of the regulators are responsible for broadcasting (i.e., radio and television transmission); 18% of them are responsible for information technology (IT); and 8% of the regulators are responsible for broadcasting and Internet content.

In addition,

Five regulators from around the world (one from Africa, two from the Americas, one from Asia-Pacific and one Arab States) indicated that they are responsible for both broadcasting (transmission) and IT.

In three countries (Malaysia, Sudan, Switzerland), the regulator is responsible for broadcasting, IT, and broadcasting and Internet content.

The newly created OFCOM, in the United Kingdom, is responsible for broadcasting and broadcasting content.

*Source:* ITU World Telecommunication Regulatory Database.

## 5 Conclusion and recommendations

### Question 2.1 (*Is there general agreement to this evolutionary approach in the short term?*)

The best solution seems to be adapting the legislation to new services and moving gradually towards a completely new regulatory framework. The European Union with its five directives took this solution.

### Question 2.2 (*What else can be done to make current structures work better?*)

It is not so clear what is the current structure mentioned in this question. If we connect this question to item 2.9, we are talking about structure, organization of the regulator, converged or separated sector specific regulators. The general orientation on this matter is to move towards one converged regulator such as in the United Kingdom with the creation of OFCOM. There are particular cases in federal states, where specific regulation competences are given to cantons or regional administrations, but it is recommended to keep a coherent national regulatory policy.

### Question 2.3 (*What will be the key regulatory issues in the digital future?*)

The main trend is to move from sector specific *ex-ante* law towards *ex-post* application of competition law. It should be considered that convergence is leading to a new market, new to everyone. All competing operators should be allowed to operate under the same rules and so current asymmetries in regulation (i.e. specific obligations for operators with significant market power) should be gradually withdrawn, possibly with the introduction of "sunset clauses".

### Question 2.4 (*What regulatory approaches are likely to be appropriate?*)

The evolutionary approach appears as the best regulatory solution, in relation to what emerges from the ongoing different national experiences.

**Question 2.5 (*How soon, and under what circumstances, will it be necessary to make fundamental changes to regulatory method and framework?*)**

The convergence between traditional telecommunications, multimedia services and elements of information technology is already in place in almost all developed countries. The new regulatory model should be timely defined in order to be efficient. Even if converging services are not yet a reality in developing countries the recommended way of action is to proceed with a forward-looking approach to regulatory reforms.

**Question 2.6 (*What are the implications for the regulatory framework?*)**

The privatization of incumbent, state owned operators is a political choice but if public ownership is maintained, a high level of transparency is required in the marketplace to be credible and become appealing for investors and competitors. Furthermore, transparency and credibility reduce the level of possible conflicts.

**Question 2.7 (*How to manage the transition period?*)**

The transition period, defined as the time in which to implement regulatory reforms, is shortening. It is recommended to proceed to a technologically neutral regulation and to include regulation of convergence in current politics and development plans.

**Question 2.8 (*What regulatory framework is most likely to be generally appropriate once services become substantially converged?*)**

The recommended target is light regulation with limited regulatory intervention. In the transition period strict control by the regulator may be needed in conjunction with the consultation with competition authorities.

**Question 2.9 (*How to evaluate the performance of regulatory structures?*)**

Regulation should be cost effective; so, the costs of regulation should not exceed the expected economic results and benefits to the competitive market. It is recommended to begin to study and establish mechanisms for the analysis and evaluation of the economic impact of regulation and of the consumers' degree of satisfaction of the regulatory measures.

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