

**QUESTION 10/1**

Regulatory impact of the phenomenon of convergence within the telecommunications, broadcasting, information technology and content sectors



**ITU-D** STUDY GROUP I 2nd STUDY PERIOD (1998-2002)

# *Final Report*

Telecommunication Development Bureau (BDT)

International Telecommunication Union



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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 1998-2002, Study Group 1 is entrusted with the study of eleven Questions in the field of telecommunication development strategies and policies. Study Group 2 is entrusted with the study of seven 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.

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## FINAL REPORT

### Summary

In the last few years “convergence” has become one of the most recurrent words in the ICT industry lexicon.

The phenomenon of convergence is visible in many merger and acquisitions, as well as in the continuous new initiatives undertaken by several companies, aiming at developing and offering new services in areas outside their traditional core business, with the purpose of extending their activities to new business sectors.

It has to be clear that convergence is not a “plug in” concept, nor it is going to happen overnight, and the expected benefits could take years to occur. It is certainly difficult to predict what impact the introduction of a new technology will have: the ultimate arbiter should, and will be the market. At the moment, it is already clear that users seem to be much more interested in the type of services offered, friendliness, security, costs, and, most of all, in the tangible benefits they can gain from, rather than in the technology or in the technical means used for the provision. In any case, Telecom industry (and particularly Telecom Operators) are, in this phase, very active in restructuring their strategies to adapt themselves to the new convergent context.

Given the difficulty of predicting the type and pace of development of new technologies and services we should be very careful in assessing regulatory conditions, technology potential, economic services, market forces. Likewise, any possible action to review *ex-ante* the regulatory framework – and possibly imposing new conditions – may risk to originate undesirable restrictions, which may have a negative impact on the market expansion, and consequently on the growth of new businesses.

As concerns the technology, the present tight association between a specific service and its relevant infrastructure will gradually vanish and the offering of any kind of services on whatever supporting infrastructure is certainly the target scenario for the years to come. The time duration to achieve this target is certainly unpredictable and the mastering of the transition period is the real key issue in order that the convergence may result in a market success.

In the ongoing process of convergence, and very likely during the transition phase, peculiarities will continue to exist in the different sectors of broadcasting, ICT and telecommunications and each of them might need a specific strategy. In this context the regulatory framework should not hinder or stop the evolving process, but should rather adapt and evolve, in accordance with the technology developments and the corresponding market responses.

### 1 The drivers of convergence

“Convergence” has become one of the more heavily used words in the ICT industry. The word is used to describe almost any trend representing the ever closer contact between the telecommunications, computer and media industry.

Many of these trends are enabled by digitisation. Digital technology has made it possible to convert sound, text, graphics and moving images into coded digital messages which can be manipulated and quickly transmitted over wired and wireless networks without loss of quality.

The convergence shows itself in different forms in ICT and media worlds, for instance: Fixed-Mobile convergence (at the commercial, service or network levels); Internet and TV convergence (technologies,

services); convergence between Internet and Voice telephony (e.g. Voice over IP); Mobile services and Internet convergence; Digital technologies that are just beginning to show up their potential.

Concerning the digital technologies the role of ATM may need to be reconsidered with respect to the views of the early '90; the relationships between ATM and IP should also be deeply analysed to develop new and clear employment strategies; XDSL technologies are beginning to be used for commercial offerings; the options for offering digital TV services are currently in development and their market potential is currently under evaluation. The integration of TV and Internet services, although it seems have a high potential, has only had some market tests and business conclusions cannot be drawn yet.

However it is generally agreed that the process of convergence, as a major driver for the development of the Information Society, could give rise to a wealth of opportunities in the growth of employment and SMES and in a strong take-off of the industry of content.

There are three key drivers that will influence convergence, its pace and the extent to which it will go: technology, market and regulation.

The subject of this report is the identification of the right and best regulatory framework for approaching the convergence in the global village, to avoid the monopolisation of the market in terms of models, services and technologies.

Deregulation allows new competitors to exploit new, converged technologies in order to compete in previously difficult-to-enter markets. Regulatory policy can drive convergence in access to local loop infrastructure (traditional and alternative), interconnection rate levels and arbitrage opportunities (for example Internet based services vs. accounting rates).

However, looking at what is happening in the developed economies, large discrepancies still exist within Europe and in the world as far PC concentration per household is concerned and with respect to similar figures referred to the US. So, convergence is not going to reach the same level everywhere at the same time. Moreover, not all citizens – also in the most advanced economies – are going to benefit from it since the beginning.

The definition of a new regulatory framework needs therefore to take into account the possible socio-economic effects on the different regions. It should also be considered that convergence implies an evolution and a possible reduction of traditional jobs, while, at the same time, imposes the development of new skills (and consequently the need for specialized education and training).

For the above mentioned reasons, actions should be taken so as to allow the sector actors to move along a more pragmatic path, where market forces and technology potential play a central role avoiding any risk of over-regulation.

## **2 Barriers to Convergence**

Along with the ITU indicators, in spite of particular campaigns to facilitate computers literacy and network access to Internet, large differences are still persisting among the world regions as far as main telephone lines, education, availability of local content and ability and willingness to access are concerned: it is clear that convergence will not have the expected socio-economic effects until these barriers are removed.



Some of the barriers appear to be peculiar to the local markets (e.g. language diversity), while others seem to be more general in nature and common to the global market (e.g. the access barriers). Nevertheless it should also be noted that in some cases the solutions adopted to remove existing barriers seem not to have produced effects to the desired extent and so are worth of a better evaluation.

When technical barriers are examined, the present shortage of capacity in the delivery of telecommunication and broadcast services is often claimed as the most critical issue. It is worthwhile to consider that with the launch of digital television and radio, with the increased use of interactive technologies, and with the development of the new transmission technologies, the above mentioned limits will be completely removed. The potential for competitive delivery of services will therefore increase and consequently a strict ex-ante regulation (ONP like) should be avoided.

A regulation for regulations' sake makes no sense. The need for firm automatic regulatory responses to face existing or potential barriers is not justified: on the contrary in the transition period towards the full exploitation of the convergence potential a flexible regulatory framework would best suit the relevant scenario. In most cases this framework will create the most appropriate conditions for the removal of the existing barriers.

The suggested framework should be based on simple and transparent rules, non discriminatory towards any of the actors, and sufficiently flexible, so to able to quickly adapt to technology progress.

Such a framework could act as an enabler of the convergence process and should remain in place until the development of a more competitive market.

More emphasis should be given to the role of market demand with respect to the definition of new services' offerings. Many of the Mergers & Acquisitions often quoted as evident witnesses of the convergence process are ending up in business failures. In most cases such disappointing results were to impute to the insufficient attention devoted to analyze the perspective market, or assuming as valid analyses performed in an adjacent market.

Following this approach the number of M&A in the relevant sectors world-wide is not a good indicator of the pace at which the convergence process is moving forward; therefore other indicators should be identified and brought into the discussion. In this respect short and longer-term market developments should carefully be assessed.

Industry investments should not be impeded, even if they might temporarily create dominant positions.

Such positions may easily be weakened, or eventually fall, in light of technology breakthroughs used by competitors or due to relevant changes in market conditions; neither new restrictions should be imposed on the use of existing infrastructures for delivering any new services being defined, nor should they be defined just for the use of new infrastructures.

Wherever regulation is applied in an asymmetric fashion – for example in the EU some Member States do not permit the telecommunications operators to provide also (either directly or indirectly) cable television services – such restrictions on the use of infrastructures could prevent the exploitation of economies of scale and scope.

So, market entry rules should be kept in force only where public interest objectives or the use of common or shared resources is involved. License fees should be kept to a minimum and strictly related to the objective of requiring the rational and efficient use of the resources being assigned. The imposition of burdens concerning “public interest” in licensing conditions should also be avoided.

The lack of standards may act as a potential barrier to allow the evolution of technologies and services towards a converging environment. The definition of standards, not in line with market needs, could

nonetheless constitute another potential, and possibly greater barrier. Actions should be discussed and taken to fully comply with this requirement.

### 3 The Regulatory Framework

The right regulatory framework for convergence should take into account the structural differences typical of this new environment in comparison to the peculiarities of the sectors, which in the past were considered as clearly separated. In particular, a more direct emphasis should be given to a type of regulation based on the market characteristics of each specific service rather than on its delivery system (service based Vs carrier based regulation). This choice should allow to avoid the common mistake to mechanically apply to new services, such as digital broadcasting or Internet, the regulation specific to traditional services as telephony.

According to this approach, the market characteristics on the supply and the demand side of the specific service would originate the type of regulatory intervention. On the supply side, already now but more in the future, a plurality of delivery systems seem to characterise many of the convergent services (for instance, Broadcasting can be offered through satellite, cable, radio links, etc.).

With this approach the old “one to one correspondence” between service (e.g. voice telephony) and delivery system (e.g. twisted pair) typical of the POTS (Plain Old Telephony Service) is no longer true. On the contrary, each technology is able to deliver a plurality of services and each service can be delivered by a number of technologies. At the same time, because of budget and time constraints, the demand side of many converging services will be characterised by a substitution effect among services, thus, causing, very often, the service provider to be a price taker rather than a price maker.

As a result, concepts typical of a time of scarcity, such as dominance, common carriage and open network provision need to be reassessed in the convergence world. Therefore, the service based regulatory model offers an alternative for defining the type of regulatory approach.

The existing regulation of the telecommunication and the audio-visual sector were devised with different objectives in mind and are very different in nature. In telecommunications the provision and operation of the physical infrastructures, the networks and the access to the networks were traditionally regulated by a monopoly regime. Recently the sector met a radical change and competitive regimes are being adopted. On the contrary, for broadcasting both the distribution networks and the content have always been and still are strongly regulated, on the basis of cultural and public interest criteria.

Access to scarce spectrum resources are controlled through licensing regimes and these conditions are often used to ensure social interest: therefore, also in this area, regulation needs a revision in the light of convergence.

The task of defining an effective and very specific regulatory framework for the converging environment – where the potential to set up new services whose life-cycle is unpredictable, but very often quite short – may

become an impossible one. Thus, it seems more reasonable to define flexible and general regulatory principles, acting as “regulatory guidelines”, and assign to market forces the task of crafting the new environment by exploiting the potential offered by digital technologies. The new regulation should be as flexible as possible and quickly move towards a situation where specific ex-ante regulation are applied only in case of lack of market self-regulation or complete market failure.

It shall take into account that:

- In the era of digitalisation there is no more spectrum scarcity as before. Broadcast regulation can be upgraded accordingly and the sector can be ruled only by the principles of competition law (with the exception of specific laws for data privacy and intellectual property rights protection). In this open and pluralistic contest content regulation might be reviewed on the model of the free press.
- Strong cooperation between different subjects is needed and welcome to start up the process for the development of convergence in the telecommunications sector. Alliances and joint ventures (horizontal integration) should therefore be evaluated having regard to this necessity. Also vertical integration can be considered as an opportunity to stimulate the growth of the emerging markets.
- In this context, competition rules should be adapted to the reality of this new market characterised by a heavy impact by technology and innovation. It should be particularly stressed that only the abuse of dominant position has to be avoided, and consequently the application of an asymmetrical “ex ante” regulation is in principle not justified anymore. The situations should be evaluated on a “case by case” basis, taking also into account that a dominant position in an adjacent market does not automatically imply an extension of this position in the market under evaluation by the competition Authority.
- For the same reasons, it seems to be necessary to clearly identify the “relevant markets”, to avoid to impose regulatory laces to the development of the whole sector.

The definition of this new regulatory framework, following an horizontal approach, should be able to ensure a common set of conditions for the development of transport infrastructures, on one side, and the offering of services on the other side.

In this scenario a revision of the nature and role of National Regulatory Authorities might be necessary. The convergent market will probably ask for a single Regulator of the communication sector, in charge of controlling together Telecommunications, Broadcasting and Information Technology markets.

In a world where service provision increasingly crosses national boundaries, with the appearance of world-wide operators offering integrated multimedia services, it is essential to ensure that the national regulatory approach fits with the developing international framework. In this perspective, the creation of national Regulators should take into account the ongoing world-wide globalisation process.

According to the necessity of defining a new type of regulatory approach (service based vs carrier based), as described in the previous paragraphs, the only viable way to review the existing regulatory framework seems to progressively introduce a new regulatory model to cover the whole range of existing and new services.

The other possible alternatives would be to build on current structures or to develop a separate regulatory model for new activities to co-exist with telecommunication and broadcasting regulation. The first option seems not to be appropriate because it leaves in place the current vertical regulatory structure as it is in place in most of the developed economies. Adopting this option the present asymmetric approach would be kept in place and the convergence market would probably remain too rigid and over-regulated.

Also the second option seems not to be viable: to have different set of rules running in parallel could lead to serious confusion and uncertainty.

Although the option to progressively introduce a new regulatory model seems the most difficult to achieve, it is the only one that could lead to a consistent regulatory framework for the future converging market. It will

probably require a step-by-step approach to prevent a disruptive change, but a completely new regulatory approach seems to be necessary in order to avoid the implementation of a regulatory framework based on old models not in line with the new scenario.

#### **4 The mobile perspective**

Technological harmonization should not be a fixed priority, but there is the need for the availability of strategic technologies and those enabling the provision of main services (such as GSM, IMT-2000). It is therefore necessary to reserve enough frequency bands to satisfy the estimated demand, as soon as possible. That assured, it should not be the role of the Governments to prescribe technological choices by imposing, for instance, the transition from analogue to digital transmission, or the moving from GSM to IMT-2000.

This process should be market driven, taking into account the needs of the customers.

The combination of mobile technologies or systems, in particular where multi-standard equipment is available, should be promoted (GSM, DCS, IMT-2000). Similarly, bringing existing skills to new technologies, neighbouring segments or other sectors of the market, also by existing incumbent operators, should be positively evaluated. The consequent synergy generates benefits for the customers and for the industries, which should be considered prevailing on concerns about competition. Moreover, only the stronger players will be able to compete in the future world-wide-market.

However fixed-mobile convergence, which is a significant ongoing trend, should be deeply analysed. As a matter of fact, the existing regulatory approaches and the current competition rules are unsuited to regulate the new scenario.

It seems necessary that also the incumbent fixed network operators should be allowed to move towards adjacent mobile markets with all the necessary competition safeguards but without evaluating “a priori” this convergence as an extension of dominant position.

Market demand for fixed-mobile convergence shapes a new relevant convergent market (fixed – mobile), substituting for the separate fixed and mobile ones.

Finally, it is from the mobile market that a useful regulatory lesson arrives: it is well known that the worldwide leadership of the European mobile industry has been achieved not only thanks to very successful entrepreneurship, marketing decisions and customers preferences, but also and mostly thanks to light regulation or, better, self-regulation through competition. In few years the mobile operators have been able to rise from the market the investment capitals necessary to overcome the fixed voice telephony market in terms of subscribers and to fund the next generation of broadband mobile services.

These investments have been funded by the market, without subsidies or other distorting public interventions. The new investment cycle of the high-speed convergence industry cannot but follow the same development model.

#### **5 Conclusions**

The potentialities that could be expressed by a real convergence between information processing, telecommunications and television are enormous both in terms of new offerings and in terms of new employment opportunities. Nevertheless it should be taken into account the high investments that are needed for the start-up of the convergent market, not only for the infrastructure but also for content creation and for deploying new terminal equipments.

Most of the documents published in the recent years on the phenomenon of the “Convergence” assign a central role at the regulatory regime in order to favour the migration to a convergent environment: this convergent market should develop and grow in a fully competitive scenario for all of its components and should not be limited by heavy regulatory constraints.

The regulatory framework for convergence should take into account the structural differences characterizing this sector in comparison to the peculiarities of each of the converging sectors.

On the supply side a plurality of delivery systems seem to characterise many of the convergent services. At the same time, because of budget and time constraints, the demand side of many convergent services is characterised by a substitution effect, thus, causing very often, the service provider to be a “price taker” rather than a “price maker”.

As a result concepts such as dominance, common carriage and open network provision need to be reassessed in the convergence world. In particular, an emphasis should be given to a type of regulation that is based on the market characteristics of the specific service rather than on its delivery system (service based vs carrier based regulation).


Therefore the focus should be on the following objectives:

- Assessment and, if necessary, removal of the regulatory barriers to convergence;
- Creation of new and lighter regulatory tools for broadband services;
- Support to private investment policies and to the dynamics of the competitive market;
- Reduction of the level of regulatory intervention, also for the “traditional” services.

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