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COMMUNICATION FROM THE COMMISSION

TO THE COUNCIL, THE EUROPEAN PARLIAMENT,
THE ECONOMIC AND SOCIAL COMMITTEE
AND THE COMMITTEE OF THE REGIONS

**Towards a new framework for Electronic
Communications infrastructure and
associated services**

The 1999 Communications Review

INTRODUCTION & EXECUTIVE SUMMARY

Introduction

The present Communication presents a Review of EU regulation in telecommunications, and proposes the main elements for a new framework for communications infrastructure and associated services. Chapter 1 explains the reasons for launching the Review. Chapter 2 positions the Review in the context of other Commission Communications on Convergence, Radio Spectrum and the latest Implementation Report. It also reports on the issue of a European Regulatory Authority (as the Commission is required to do by current legislation). Chapter 3 sets out the Commission's overall approach to the Review, detailing a set of policy objectives, regulatory principles and proposals for the design of a new regulatory framework. Chapter 4 analyses the major policy issues involved: licensing; access and interconnection, management of radio frequency, universal services, the rights of consumers and users, numbering naming and addressing, specific competition issues and institutional arrangements. **A complete list of the Commission's proposals to address these issues is in section 5.**

The cornerstone of Europe's transition to the Information Society

Since 1990, the European Commission has progressively put in place a comprehensive regulatory framework for the liberalisation of the telecommunications market. By allowing competition to thrive, this policy has had a major impact on the development of the market, contributing to the emergence of a strong communication sector in Europe, and allowing consumers and business users to take advantage of greater choice, lower prices and innovative services and applications.

This has been of vital importance to the EU's global competitiveness. An advanced communications industry is a pre-condition of Europe's transition to the Information Society with all the social and economic benefits which that entails. Information Society industries already contribute around 15% to growth of the EU's Gross Domestic Product and create 1 out of every 4 new jobs in the European economy.

Without efficient, high quality communications, European industry, and in particular small and medium-sized enterprises (SMEs), face a major disadvantage in relation to their global competitors. The speed of technological development over the last ten years has led to the emergence of the Information Society and the convergence of the telecommunications, media and information technology sectors. As a result, the new information technologies will play an ever-increasing role with respect to the competitiveness of the European economy as a whole, as well as of its regions.

The introduction and take-up of new communications services can offer possibilities to reduce regional disparities by reducing the significance of distance. Information and communications technologies can also be used as instruments to enhance social cohesion. However, these benefits can only be achieved if information society services are available for everybody in all regions of the EU. This means existing obstacles for access to information society, whether economic, educational, social, cultural or geographical, must be addressed. Co-ordinated public policy

measures are needed to overcome these obstacles to ensure the beneficial effects of information technologies.

Telecommunications liberalisation will continue to have a major impact on the economy as a whole. Access to Internet at prices affordable for citizens is a precondition for an inclusive Information Society, and efficient access to communication infrastructure is vital for business to participate in the digital economy. Technological and market developments in the communications sector are already driving economic and structural reform in the EU. The new framework proposed in this Communication will substantially contribute to accelerating this process, by resulting in lower access prices.

The new framework will be a central building block of the EU policy with respect to Information Society for the years to come. However, it cannot be seen in isolation. Community policies have to combine the establishment of an effective regulatory framework with concrete actions to promote the emergence of an inclusive Information Society. The Commission intends to play an important role in this process by introducing focused initiatives, such as the e-Europe initiative which, as announced by President Prodi, will be launched at the Helsinki European Council.

The present Communication initiates a Review of the current telecommunications regulatory framework. The provisions of this framework liberalised all telecommunications services and networks from 1 January 1998. This has transformed a sector traditionally characterised by State monopolies into a dynamic industry ready to take full advantage of the global market. But the process is not complete. The EU telecommunications market remains fragmented and is dominated by incumbent operators in all Member States, notwithstanding the rapid development of competition, as illustrated by falling tariffs and a growing number of operators. The Review provides an opportunity to re-assess existing regulation, to ensure that it reinforces the development of competition and consumer choice, and to continue to safeguard objectives of general interest.

This Communication presents the main elements of the Commission's policy proposals for a new regulatory framework, to cover all communications infrastructure and associated services. This responds to a key message of the consultation on convergence of the media, telecommunications and information technology sectors that there should be a more horizontal approach to regulation of communications infrastructure. This Communication also takes into account the key messages of a number of other recent consultations, reports and independent studies, in particular the Communication on the consultation on the Radio Spectrum Green Paper, the Report on the development of the market for Digital Television in the European Union, and the fifth report on the Implementation of the Telecom Regulatory Package.

With these proposals, the Commission seeks to build on the successes of the current regime and ensure that regulation at EU level continues to encourage the development of a competitive single European market. The objective is to give the citizens of the European Union a world-class communications infrastructure, delivering the best deal for businesses and consumers, in terms of low prices, high quality and maximum value for money.

The market is changing

Technological and market change in the communications sector is proceeding at an ever-increasing pace. Where once markets were exclusively national, globalisation is accelerating in scope and intensity, raising technical, commercial, and legal issues which increasingly require global solutions. Liberalisation both at European and global level is bringing with it mergers, acquisitions and new alliances, which are profoundly changing the nature of the industry.

The Internet is to a large extent overturning traditional market structures, providing a common platform for the delivery of a wide range of services. It is blurring the distinction between voice, image and data transmission services, changing radically traditional pricing models for communications services, and challenging existing regulatory structures.

Improvements in processing, access and basic transmission technologies are reducing the cost and increasing the capacity of communications infrastructure. Computing power doubles every eighteen months, transmission capacity every twelve months. Hitherto uneconomic applications therefore become commonplace as communications costs fall, radically changing people's work and leisure activities. Software re-configurable technologies will enable operators and service providers easily to tailor their services to meet specific local market requirements, by providing flexibility and innovation in fixed as well as mobile networks.

Wireless applications are increasingly important in all segments of the market. The mobile sector continues to experience strong growth, likely to be further enhanced by the introduction of third generation systems. Competition in local access markets will be strengthened by the development of wireless broadband local loop technologies, and the satellite sector is experiencing new growth with the development both of narrow- and broadband personal communications services.

Finally, the development of technologies within the media sector, in particular digital television (DTV) is providing transactional "on demand" services and new services such as data, Internet and E-commerce, characterised both by services on digital terrestrial (DTTV) networks in many Member States, and a wave of satellite and cable TV digital platforms.

How all the above trends will shape the market over the next decade cannot be forecast precisely. Regulators and market players alike face uncertainty as they look towards the future convergent environment. Regulators will need to have very clear objectives, including those of public interest, and a set of general-purpose regulatory 'tools' if they are to succeed in stimulating and sustaining a market that remains vigorously competitive and meets users' needs, while at the same time protecting consumers' rights.

The proposed evolution

The existing legislative framework was primarily designed to manage the transition to competition and was therefore focused on the creation of a competitive market and the rights of new entrants. The new policy framework will seek to reinforce competition in all market segments, particularly at local level. It should be designed to cater for new, dynamic and largely unpredictable markets with many more players than today. In line with the results of the debate on convergence, the Commission foresees a light regulatory approach for new service markets, while ensuring that dominant players do not abuse their market power. Regulation implemented as a proxy for competition will be reduced as markets become more competitive. Regulation will therefore be progressively limited to areas where policy objectives cannot be achieved by competition only.

The objectives, principles, design and key proposals of the new framework are set out below.

Policy Objectives

The policy objectives that underpin the existing regulatory framework and that will be made explicit in the new regulatory framework for national regulators are as follows.

- ◆ **To promote and sustain an open and competitive European market for communications services**, to provide an even better deal for the consumer in terms of price, quality and value for money.
- ◆ **To benefit the European citizen**, by ensuring that all have affordable access to a universal service specified at European level, and access to Information Society services; protecting consumers in their dealings with suppliers; ensuring a high level of data protection and privacy; improving transparency of tariffs and conditions for using communications services; and addressing the special needs of specific social groups, in particular disabled users and the elderly.
- ◆ **To consolidate the internal market in a converging environment**, by removing obstacles to the provision of communications networks and services at the European level so that, in similar circumstances, similar operators are treated in similar ways wherever they operate in the EU.

Safeguarding Community interests in international negotiations is also an important objective for the Commission and Member States, in particular the forthcoming WTO negotiations where further liberalisation of telecommunications in other countries will be vital to ensure that electronic commerce and the Internet can develop at a global level.

Principles for regulatory action

Five principles underpin the new regulatory framework, and will govern regulatory action at Community and national level. With the exception of technological neutrality, these are generally accepted principles of good regulation which are already inherent in Community regulatory policy. They are that future regulation should:

- ◆ be based on clearly defined policy objectives (those set out above);

- ◆ **be the minimum necessary to meet those objectives**, removing obligations in the existing framework which are no longer necessary, and building mechanisms into the new framework to reduce regulation further where policy objectives are achieved by competition;
- ◆ **further enhance legal certainty in a dynamic market**. It is important to ensure that regulation is sufficiently stable to allow companies to make investment decisions with confidence but flexible enough to respond to the development of the market;
- ◆ **aim to be technologically neutral**, i.e. not to impose, nor discriminate in favour of, the use of a particular type of technology, but to ensure that the same service is regulated in an equivalent manner, irrespective of the means by which it is delivered;
- ◆ **be enforced as closely as practicable to the activities being regulated**, whether regulation has been agreed globally, regionally or nationally.

Design of the new regulatory framework

The Commission sees the new regulatory framework structured along the following lines:

- ◆ **Community sector-specific legislation**

Consisting of a Framework Directive identifying general and specific policy objectives, and four specific Directives on licensing, access and interconnection, universal service, privacy and data protection.

This represents a substantial simplification of the current framework, reducing the number of legal measures from twenty to six.

- ◆ **Accompanying non-binding measures**

Recommendations, guidelines, codes of conduct and other non-binding measures to create a framework which can respond flexibly to changing market circumstances within a framework of general principles set out in Community legislation.

- ◆ **Competition rules**

Greater reliance on the general competition rules of the Treaty, allowing much of the sectoral regulation to be replaced as competition becomes effective.

Starting from these general principles and with the above structure in mind, this Communication considers various areas for regulatory policy in the communications sector. It sets out the Commission's provisional positions in each of these areas, and seeks the views of all interested parties on its proposals, **by 15 February 2000**. In the light of the comments received, the Commission will produce proposals to amend the current framework in the first half of 2000. These proposals will take the form of European Parliament and Council directives, subject to the co-decision procedure. Until these are implemented by Member States, the current regulatory framework remains fully in force.

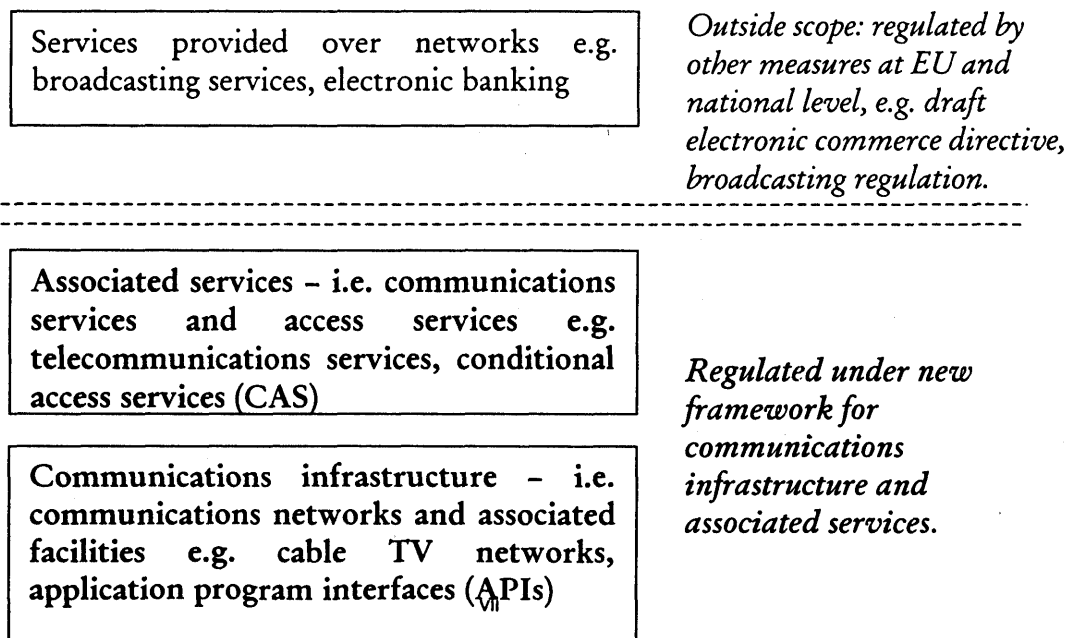
Key policy proposals

The key proposals with most important consequences for the regulation of the sector are set out below. A consolidated list of all proposals can be found in section 5.

A single regulatory framework for communications infrastructure and associated services

- ◆ **Currently, different rules apply to the regulation of different communications infrastructure and associated services.** But convergence means the same services can be carried over any transmission network, whether fixed or mobile, telecommunications or cable TV, satellite or terrestrial. Separate regulatory frameworks for different communications infrastructures and associated services are therefore likely to be inconsistent and could potentially distort competition.
- ◆ **The new framework would cover all communications infrastructure and associated services,** so that equivalent rules apply to these networks. In practice this means the new framework would apply to: telecommunications networks (fixed or mobile), satellite networks, cable TV networks, and terrestrial broadcast networks, as well as to facilities such as Application Program Interfaces, which control access to services. This has important consequences. For example, national regulators would apply the same licensing principles (of transparency, non-discrimination, proportionality and objectivity) when licensing all communications infrastructure and associated services. It should be noted that where such associated services are linked to services for the provision of content, there may be a need for additional rules concerning that provision of content.
- ◆ These rules would of course be without prejudice to regulatory obligations (whether at EU or national level) which apply to the content of broadcasting services or other information society services.

The figure below sets out the scope of this new framework. It shows three tiers: at the bottom is the basic communications infrastructure; in the middle are the services associated with that infrastructure; at the top are services provided over networks.



Internet

- ◆ **The new framework would continue to treat Internet transmission services in the same way as other transmission services.** The existing telecoms framework already covers Internet transmission services that for example enable users to send email and surf the Web. No Internet-specific measures are envisaged at this stage. Regulation of services provided over the Internet (for example in the field of electronic commerce) is not covered by this Communication; other measures, for example the draft directive on certain legal aspects of electronic commerce in the internal market, would apply to such services.

Licensing and authorisations

- ◆ **The current framework for telecommunications allows Member States to insist on the use of individual licences (which are specific to an individual operator and require the operator to seek an explicit authorisation from a regulator before it can begin operating).** This degree of control on market entry creates administrative barriers which may be disproportionate, and has contributed to large variations in licence regimes in the EU.
- ◆ **The new framework would require operators providing communications services to be licensed using general authorisations (i.e. no requirement for explicit authorisation by a regulator before providing services).** Specific authorisations would remain necessary for the use of radio spectrum and numbering resources. This deregulated, harmonised framework would reduce the current variation in licence regimes for telecommunications across the EU, which is holding back innovation, competition and the provision of pan-European services.

Access and interconnection

- ◆ **The new framework would establish common principles for regulation of access and interconnection across all communications infrastructure.** This should ensure new entrants can compete effectively against dominant operators whatever the transmission medium and establish a framework that can deal effectively with new bottlenecks as they arise. The current framework was suitable for the initial period of liberalisation where the main objective was to ensure access to the networks of former monopoly telecoms operators. It is now necessary to build in flexible mechanisms to reduce regulatory intervention as competition increases and respond to a rapidly changing market.

Radio spectrum

- ◆ **A Spectrum Policy Expert Group will be established at Community level to ensure that political and not just technical considerations drive Community policy in this area.** It will need to ensure that all relevant economic, social, cultural and other factors are appropriately balanced in formulating a common Community approach to radio spectrum management. Mechanisms to ensure a coherent Community approach to the allocation of radio spectrum resources are currently inadequate. As a result of the consultation on the Green Paper on radio spectrum policy, the Commission proposes that a regulatory framework be established at Community level to address this. Although a variety of industry sectors and public interest applications depend on radio spectrum, allocation at international and European level remains primarily determined by telecommunications interests.

Universal service

- ◆ **Ensuring affordable access for all to communications services necessary for participation in the Information Society remains a key priority for the Commission.** The benefits of the Information Society will only be realised if all are able to participate in it. This is essential to avoid the emergence of a “digital divide”. The current framework defines a set of services which make up universal service. These services may be funded by financing schemes which compensate the universal service provider via contributions from its competitors, if Member States deem that the provision of universal service constitutes an unfair burden for the operator designated to provide these services. Currently, only one Member State has an operational universal service fund. Member States may impose further obligations, but they cannot oblige other operators to contribute to their financing.
- ◆ **In addition to funding public access from State budgets (for example for schools and libraries), Member States will retain the option of establishing the above-mentioned financing schemes for universal service.** But the type of services which may be funded by such schemes must be carefully assessed. Extension of the current obligations for provision of universal service must combine an analysis of the demand for and availability of the service, with an assessment of its social and economic desirability. Otherwise there is a risk of distortion of competition and an unfair cross-subsidy by the majority of consumers to higher bandwidth users (generally businesses and “early adopters”). **The Commission therefore proposes to maintain at this stage the current definition and scope of universal service.** However, given that it is a dynamic and evolving concept, the Commission proposes to put existing criteria for possible extension of its scope, as well as mechanisms for periodic review, into Community legislation.

Competition in the local loop

- ◆ **Urgent action is required to increase competition in the local loop.** The local loop is the term used to describe the line between the local exchange and the subscriber's premises. Incumbent operators still dominate the market for provision of communications services at local level. The use of new and existing alternative infrastructure (e.g. cable TV or wireless local loop networks) by new entrants to provide communications services has increased consumer choice. But in many places alternatives still do not exist.
- ◆ National regulators in many Member States are introducing requirements for incumbents to unbundle their local access networks for use by competing service providers. The Commission welcomes this trend and considers that Community action cannot wait for legislation to be adopted in this area. Instead, the Commission will use Recommendations and, in specific cases, its powers under the competition rules of the Treaty to encourage local loop unbundling throughout the EU.

Consistent regulatory action at EU level

- ◆ **Inconsistent application of certain provisions of telecommunications legislation is hindering the development of effective competition and the deployment of pan-European services.**
- ◆ The Commission is not persuaded that a regulatory body at Community level would currently add sufficient value to justify the likely costs. **The Commission therefore does not propose to establish a European Regulatory Authority for communications services at this stage.**
- ◆ **But co-operation between the Commission and national regulators must urgently be improved.** In some areas, for example licensing, inconsistent application of legislation will be addressed by increased harmonisation. But inconsistencies have also arisen, for example in access and interconnection, because Member States are at differing stages of market development. In the proposed Directive on Access and Interconnection, it is therefore proposed to set out a framework of principles for National Regulatory Authorities to follow in dealing with these issues, rather than to set out detailed provisions relating to the problems themselves. It is proposed to create a High Level Communications Group of National Regulatory Authorities and the Commission, in which these types of problems could be discussed and solutions found on the basis of rules agreed at Community level. Where necessary, these solutions would be backed up by legal measures adopted by the Commission under its executive powers, with the assistance of a new Communications Committee. This Committee would replace the two current committees in the area of telecommunications.

The Commission would welcome views and comments on all the proposals set out in this Communication.

Comments should be sent before 15 February 2000 in electronic format to

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Otherwise they can be sent to

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Unless respondents request confidentiality, all responses will be made publicly available on the Commission's ISPO website (www.ispo.cec.be).

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1. RATIONALE FOR THE 1999 COMMUNICATIONS REVIEW

Liberalisation of Europe's telecommunications market culminated on 1 January 1998 with the complete liberalisation of all telecommunications networks and services in almost all EU Member States¹. The developments in technology, innovation in service offerings, lower prices and improvements in quality brought about by the introduction of competition have provided the basis for Europe's transition to the Information Society. **The creation of a dynamic and truly competitive Information Society is vital for Europe's competitiveness.** Information Society industries contribute around 15% to the EU's Gross Domestic Product; they are the driving force for economic growth and job creation. Already the Information Society creates 1 out of 4 new jobs in the European economy. The introduction and take-up of new communications services can also have a beneficial effect on economic and social cohesion; Information Society technologies can reduce regional disparities, and mean the "death of distance."

Telecommunications liberalisation will continue to have a major impact on the economy as a whole. Technological and market developments in the communications sector are already driving economic and structural reform in the EU. The new framework proposed in this Communication will substantially contribute to accelerate this process, by reinforcing the effective competition in the EU, with resulting benefits for the economy and society as a whole in terms of the development of innovative new services and lower prices.

The achievements of the current framework are documented in the 5th Implementation Report². But the process is not complete. The European telecommunications market cannot yet be described as truly pan-European, although increasing numbers of operators are pursuing a pan-European business strategy. National licensing regimes vary widely from Member State to Member State, causing difficulties for pan-European operators (especially in the satellite sector). Incumbent operators remain dominant in their national markets, especially at the level of the local loop, where as yet new entrants have made only minor inroads into the incumbent's market share. Europe must address these issues so as to be able to consolidate and build upon the successes of liberalisation.

Furthermore, the communications sector is characterised by technological and market developments taking place at an unprecedented speed.

- ◆ **Convergence** of the telecommunications, broadcasting and IT sectors is reshaping the communications market, including convergence of fixed, mobile, terrestrial and satellite communications, and the convergence of communications and positioning/location systems. Consumer acceptance of these new services will determine the consequences for society in terms of economic development, job

¹ Portugal and Greece benefit from derogations until 1 January 2000 and 31 December 2000 respectively.

² Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions - Fifth Report on the Implementation of the Telecommunications Regulatory package COM(1999)537.

creation, cultural identities and social impact. In respect of communications infrastructure and associated services, convergence makes the traditional separation of regulatory functions between these sectors increasingly obsolescent and calls for a coherent and consistent regulatory regime.

- ◆ **Globalisation of technologies and markets** is accelerating in scope and intensity, raising technical, commercial, and legal issues which require global solutions. Organisations at intergovernmental and private sector levels have been mobilised into working towards common approaches within a variety of formal and co-operative frameworks.
- ◆ **Mergers and Acquisitions**, including new alliances, are bringing about profound changes in the nature of the industry and relationships between key players. These changes are creating the firms which will drive implementation of pan-European and global services, built on new and expanded infrastructures.
- ◆ **The Internet** is to a large extent overturning traditional market structures, by providing a common platform for the delivery of a wide range of services. The Internet blurs the distinction between voice and data transmission services, revolutionises traditional pricing models for communications services, and challenges existing regulatory structures. In Europe the Internet has been experiencing a continued expansion, in terms of the number of users and the volume of traffic. This growth will be fuelled by implementation of the next generation of Internet protocols that will facilitate the delivery of voice, data and video over the Internet with agreed levels of quality of service.
- ◆ **Improvements in processing, access and basic transmission technologies** (in particular wave division multiplexing on optical fibres and digital subscriber loop (xDSL) technologies in local access networks) are reducing the cost and increasing the capacity of communications infrastructure. Computing power doubles every eighteen months, transmission capacity every twelve months. Hitherto uneconomic applications will therefore become commonplace as communications costs fall, radically changing people's work and leisure activities.
- ◆ **Wireless applications** are increasingly entering all segments of the market. The mobile sector continues to experience strong growth, likely to be further strengthened by the introduction of third generation systems. Competition in local access markets will be strengthened by the development of wireless broadband local loop technology. Meanwhile the race to develop new systems offering global mobility has given new impetus to the growth of the satellite sector, with the development both of narrowband personal communications services and "Internet in the sky" (broadband multimedia communications).
- ◆ **Software re-configurable technologies** will enable operators and service providers to easily tailor their services to meet the specific local market requirements. Software re-configuration will provide flexibility and innovation in the fixed as well as mobile networks, by permitting dynamic re-configuration of access points, terminal and network resources. This will have profound implications for manufacturers, operators, (e.g., dynamic allocation of resources, active networks, security, quality of service), service providers (e.g. time-to-market), users (e.g.

transparency and portability of services), as well as regulators and standardisation bodies (e.g. terminal type approval).

- ◆ **the development of technologies within the media sector, in particular digital television (DTV)** is providing a wide range of innovative services for both pay TV subscribers and free-to-air viewers. These include transactional “on demand” services and other new services such as digital teletext, Internet and e-commerce.

How all the above trends will shape the market over the coming decade cannot be forecast precisely. While the underlying technological trends are relatively well understood, the new products and services that will exploit this technology will have to compete for acceptance in the marketplace, and it is by no means clear which ones will emerge as ‘winners’. Regulators and market players alike face uncertainty as they look towards the future convergent environment. Regulators will need to have very clear objectives including those of public interest and a set of general-purpose regulatory ‘tools’ if they are to succeed in stimulating and sustaining a market that remains vigorously competitive and meets users’ and consumers’ needs, while at the same time protecting consumers’ rights.

The directives which make up the current telecommunications regulatory framework call on the Commission to undertake a Review of its operation in the light of technical and market developments and changes in user demand. The 5th Implementation Report assesses the functioning of the current regulatory framework. The present Communication considers how those rules should be adapted.

The new regulatory framework should address the emerging shortcomings of the current framework for telecommunications, and take into account the market and technological developments described above. It should seek to reinforce competition in all market segments, particularly at local level. It should be designed to cater for new, dynamic and largely unpredictable markets with many more players than today. It should also ensure a light regulatory approach for new service markets, while ensuring that dominant players do not abuse their market power.

The existing legislative framework for telecommunications contains two different types of regulation. The first - regulation designed to meet general interest objectives - will remain in place, and be adapted to ensure its effectiveness in an evolving sector. The second - regulation primarily designed to manage the transition to competition - is focused on the behaviour of incumbents and the rights of new entrants. Under the new policy framework, the latter type of regulation of market players will be progressively reduced as markets become fully competitive. In this way the new framework should be able to build on the achievements of existing legislation to create a regime that is able to adapt quickly and flexibly to developments in technology and market structure.

The new framework set out in this Communication should also clarify and simplify existing rules. It is proposed to reduce the number of legal measures from twenty to a total of six, which should make the new regulatory regime more transparent and “user-friendly”.

In keeping with the principle of technological neutrality, and drawing on the conclusions of the convergence consultation³, it is proposed that the new regulatory framework covers all communications infrastructure and associated services. In practice this means the new framework would apply to: telecommunications networks (fixed or mobile), satellite networks, cable TV networks, and terrestrial broadcast networks, as well as to facilities such as Application Program Interfaces, which control access to services. The new framework would also apply to communications services using those networks (telecommunications services, and other transmission services associated with the networks referred to above), as well as to services associated with granting an authorised user access.

The new framework does not cover for example broadcasting or information society services delivered over communications infrastructure.

The following definitions are used for the purposes of this Communication:

'Communications services' are services normally provided for remuneration, the provision of which consists wholly or mainly in the transmission and routing of signals on communications networks.

'Communications network' means transmission systems and, where applicable, switching equipment and other resources which permit the conveyance of signals between defined termination points by wire, by radio, by optical or by other electromagnetic means; it covers inter alia satellite networks, fixed and mobile, voice and data, terrestrial networks, networks used for radio and television broadcasting, cable TV networks.

'Communications infrastructure' means communications networks and associated facilities upon which the provision of services depends. The networks in question may be owned and operated by different organisations, and may be linked or separate.

'Associated services' means communications services and access services associated with granting access to a particular service to authorised users (e.g. conditional access services, electronic programme guides)⁴.

'Services provided over networks' means services (e.g. media services, information society services or services such as electronic banking) which are provided over and independent of a network.

2. PRIOR CONSULTATION AND ANALYSIS

This chapter summarises the key messages of various consultation exercises and Commission reports and studies that feed into the review process. These messages have been taken into account in formulating the Commission positions set out later in this Communication.

³ Summarised in Commission Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation - Results of the Public Consultation on the Green Paper. COM (1999) 108, 10.03.99

⁴ It should be noted that, where such services are linked to services for the provision of content, there may be a need for additional rules concerning that provision of content. However, such additional rules are not considered in this Communication.

2.1. Fifth Report on the Implementation of the Telecom Regulatory Package

Information drawn from the 5th Implementation Report that is relevant to the future regulatory framework is set out below.

- ◆ **The combination of sector-specific legislation and application of competition rules has worked well.** Indicators of market activity demonstrate the existence of thriving and rapidly evolving telecommunications markets in the Member States. Active Commission supervision of the implementation of Community legislation has been critical to the effectiveness of the regulatory framework.
- ◆ **The process of creating an internal market for telecommunications services is well under way under the current framework, but the provision of pan-European services and cross-border investment is still hampered by the relatively low level of harmonisation in particular of the licensing regime and to a lesser extent the interconnection regime.**
- ◆ **Experience of the implementation of the current regulatory framework shows that there is considerable divergence in the way in which the principles are applied in the Member States.** Despite mechanisms for achieving uniformity such as the High Level Committee of National Administrations and Regulatory Authorities and the Open Network Provision and Licensing Committees, there is nonetheless a sense on the part of regulators and the market that this co-ordination should be enhanced.
- ◆ **Conflicts and administrative barriers as perceived by new entrants can be caused by disparities in the way in which regulatory powers are divided as between ministries, regulatory agencies, national competition authorities, and sometimes other agencies with responsibility for example for regulating tariffs.**
- ◆ **In respect of licensing regimes, wide differences exist in procedures, periods of validity, fees, classifications of operators with which they are faced, not to mention the difficulty of submitting applications in the eleven official Community languages.** Operators also support a move towards less burdensome regimes. The experience of Member States which already have such regimes demonstrate the benefits: they operate successfully, mesh well with a liberalised environment, and lighten the regulatory burden on the National Regulatory Authorities (NRAs).
- ◆ **Operators argue there is a considerable problem as regards the cost accounting of the incumbent operators for the tariffing of interconnection, as well as the provision of leased lines and voice telephony.** There appear to be major weaknesses in the regulation of this issue by some NRAs which have led to price squeezes in a number of Member States. However, the implementation process has demonstrated the effectiveness of benchmarking at EU level; this exercise will be continued.
- ◆ **There is currently only one universal service fund in operation, although several Member States have made provision for the creation or activation of such funds if deemed necessary.** Such funds are regarded by most operators as a barrier to market entry. They are confident in many cases of being able to provide universal service in their areas of operation on a competitive basis.

Furthermore, where full re-balancing has been achieved and no access deficit remains, universal service can be achieved on the basis of low-user tariff schemes, without further need to rely on universal service charges.

2.2. Results of consultation on the Convergence Green Paper

The most relevant messages in the context of the regulation of communications infrastructure and associated services which result from the public consultation on convergence are:

- ◆ with regard to the role of regulation, affirmation of the continuing need to meet a range of public interest objectives whilst recognising the need to promote investment, in particular in new services;
- ◆ the need for an appropriate and stable regulatory framework so as to stimulate competition, innovation and investment by enterprises, notably in new services, and to encourage development of electronic commerce;
- ◆ the need for separation of transport and content regulation, with recognition of the links between them in particular for possible competition problems;
- ◆ the need for a more horizontal approach to all transport network infrastructure and associated services, irrespective of the types of services carried;
- ◆ application of an appropriate regulatory regime to new services, recognising the uncertainties of the marketplace and the need for the large initial investments involved in their launch while at the same time maintaining adequate consumer safeguards;
- ◆ effective application of the competition rules; an increased reliance on those rules, accompanied by gradual phasing-out of sector-specific regulation, as the market becomes more competitive.⁵

2.3. Results of consultation on the Radio Spectrum Green Paper

The public consultation on Radio Spectrum Policy⁶, launched in December 1998, initiated an assessment of whether current radio spectrum policy measures meet Community policy objectives. Key issues, such as strategic planning of the use of radio spectrum, harmonisation of radio spectrum allocation, related issues in assignment and licensing and the use of radio equipment and standards, were examined. Views were also sought on the best institutional framework for radio spectrum policy co-ordination.

⁵ It should be noted that this key message relates mainly to access issues concerned with communications infrastructure and associated services. The Convergence Communication noted that "with regard to public interest objectives such as the protection of minors and human dignity, open and competitive markets could not contribute".

⁶ Green Paper on Radio Spectrum Policy in the Context of European Community Policies such as Telecommunications, Broadcasting, Transport and R&D, COM(1998) 596, 09.12.98.

The Green Paper took into account all the sectors affected by the use of radio spectrum, as an increasingly diversified use is being made of it. One of these is the communications sector. Because of the importance of radio spectrum to this sector, it has been a pioneer in evaluating regulatory requirements as a means of gaining access to scarce resources. **But the increasing number of competing uses for radio spectrum means it is essential to ensure that Community regulatory policy on radio spectrum is co-ordinated across the various sectors involved.**

In its Communication⁷ to the Council and the Parliament on the results of the public consultation, the Commission identifies a number of areas where Community action is deemed necessary in order to ensure that the Community's policy objectives with regard to radio spectrum are met.

- ◆ **A regulatory framework for radio spectrum policy should be established in order to ensure that the use of radio spectrum is harmonised where necessary to implement Community policies in the areas of telecommunications, broadcasting, transport, and Research and Development.** To this end, the Commission will submit a proposal for a European Parliament and Council Decision to establish a general framework for radio spectrum harmonisation in the context of Community policies in the above-mentioned areas.
- ◆ **A Community Spectrum Policy Expert Group (SPEG) should be established with the aim to address radio spectrum policy issues at Community level,** taking economic, social, cultural and other factors into account in a balanced manner. The SPEG, comprising regulatory authorities and representatives from radio spectrum user communities, would advise the Commission on market, technical and other relevant developments with regard to radio spectrum and in particular on the need for harmonisation.
- ◆ Where the agenda of World Radiocommunications Conference (WRC) includes items of particular importance in the context of Community policies, the Commission will invite the Council to **endorse the European positions taken so as to raise the necessary political support** for the Community policy objectives. The Commission will publish Communications in advance of each WRC, explaining the Community's policy objectives to be achieved on the various WRC agenda items and calling on all relevant players to participate in the preparatory process.

⁷ Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions, The Next Steps in Radio Spectrum Policy – results of the public consultation on the Green Paper, COM(1999)538.

2.4. Conclusions of the report on the development of the market for Digital Television in the European Union⁸

The most relevant messages resulting from the Commission's analysis of the implementation of the TV standards Directive⁹ are :

- ◆ The Directive has provided a framework for a market-led approach to digital TV systems development which has contributed to the success of European standardisation in this field. It has been able to provide regulatory certainty in those Member States where pay TV is well established. In Member States where pay TV is less developed (and "free to air" broadcasting stronger), competition law has played a more important role.
- ◆ Access to cable networks, outside the scope of the Directive, has been a significant bottleneck in certain Member States, and should be addressed in the context of a broader approach to infrastructure, transmission and access services in line with the convergence phenomenon.
- ◆ Similarly, the Directive does not address new decoder functions which have the potential to be new bottlenecks, although these new functions will not necessarily be "essential facilities" in the long term.
- ◆ Guaranteeing the consumer interest needs a new approach in dynamic markets. Consumers will need timely, high quality, transparent information in order to take empowered decisions that have traditionally been made by regulators and market actors. Regulators will still need to ensure that general interest objectives are met, and at the same time facilitate educated choice and avoid steering consumers towards particular outcomes or underwriting market actors' risks.
- ◆ Digital TV markets and technology have evolved beyond the scope of the directive. Further clarification of the regulatory framework for new services, including the interaction of sector specific regulation and competition law, is therefore necessary.

The analysis and conclusions contained in the Commission's Report on Digital Television in the European Union addresses some of the issues covered in the present Communication (notably access) in the broader context of the digital television market. Respondents will find the Report relevant when responding to the issues raised in this Review.

⁸ Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions, The development of the market for Digital Television in the European Union - Report in the context of Directive 95/47/EC of the European Parliament and of the Council of 24 October 1995 on the use of standards for the transmission of TV signals. COM(1999) 540 .

⁹ Directive 95/47/EC of the European Parliament and of the Council of 24 October 1995 on the use of standards for the transmission of television signals (OJ L 281/51, 23.11.95 "the TV Standards Directive")

2.5. Report on a possible European regulatory authority

This section reports on the possible added value of the creation of a European Regulatory Authority for communications infrastructure and associated services, as the Commission is required to do under current Community legislation.¹⁰ The Commission commissioned studies¹¹ to canvass opinion among interested parties on areas where existing regulatory arrangements are not meeting market needs; to analyse the legal and regulatory framework within which action could be taken at European level; and to identify any need for streamlining or changing current regulatory structures within the European Union.

Results of the most recent study

The study¹² found varying levels of satisfaction with the actions of national regulators. In Member States which introduced competition at an early stage, market players were broadly content with their NRAs, but in countries where competition was introduced later there was more dissatisfaction. On specific issues, there was a clear correlation among market players between their level of support for a European regulator and their level of dissatisfaction with their NRA. In particular, many market players sought some way of appealing to an EU body against decisions made by NRAs.

There was most support for greater EU involvement in the areas of: competition, development of a pan-European market, interconnection and significant market power, and enforcement.

Although greater EU involvement in achieving homogeneity of implementation was favoured, there was little support among market players for an independent EU regulatory authority. The majority view emerging from the study was that **certain regulatory functions** could best be executed at EU level, not necessarily by a separate, new authority, but rather by appropriate institutional arrangements. Improvement of existing structures was seen as preferable to the establishment of a new European regulatory institution.

¹⁰ Article 22 of Directive 97/33/EC of 30 June 1997 on Interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP) (OJ L199/32, 26.07.97 "the Interconnection Directive")

Article 8 of Council Directive 90/387/EEC on the establishment of the Internal Market for telecommunications services through the implementation of Open Network Provision (90/387/EEC, OJ L 192/1, 24.07.90, as amended by Directive 97/51/EC, OJ L 295/23, 29.10.97 "the ONP Framework Directive")

¹¹ Report on 'Issues associated with the creation of a European Regulatory Authority for telecommunications', (March 1997); Report on the value added of an independent European Regulatory Authority for telecommunications, (September 1999); <http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>.

¹² This study gathered views from over 180 parties in all Member States, including Ministries and NRAs, users and user associations, consumers associations, incumbent operators and their subsidiaries, mobile operators, new entrants, resellers, and independent service providers. Its preliminary findings were confirmed at a public workshop held in Brussels on 14 September 1999.

The study concluded that in developing such a mechanism, it would be important to define clearly the respective roles of national, Community and international institutions, and to ensure coherent and effective implementation of Community legislation in Member States.

Conclusions of the Commission

The Commission considers at this stage that the creation of a European Regulatory Authority would not provide sufficient added value to justify the likely costs. In addition, it could lead to duplication of responsibilities, resulting in more rather than less regulation. The issues identified that might be better dealt with at EU level can be addressed through adaptation and improvement of existing structures. Proposals to achieve this are set out in section 4.8.1.

The Commission accepts the main conclusions of the study. It concludes that it would be disproportionate to establish a new Community institution to address the limited number of issues that might be better undertaken at Community - rather than at national - level. There would be considerable costs of setting up a new regulatory body at European level, in view of all the associated political, legal, technical, economic and linguistic skills that would be required for it to carry out its task effectively across the Community. These costs do not just relate to the administrative costs related to the Agency itself, but the wider cost to the economy as a whole of adding another layer of administration.

The issues on which dissatisfaction has been expressed (for example in interconnection, licensing, competition, consumer protection, frequency management and numbering assignment) do not appear to justify the establishment of a new agency. The existing regulatory framework already requires Member States to implement appeal mechanisms against NRA decisions at national level, and the Commission considers that the primary aim should therefore be to improve the consistency of NRA actions and the effectiveness of corrective mechanisms available.

The proposed new regulatory framework would set out clear and explicit objectives for NRAs, and any NRA decisions that go against these objectives would constitute an infringement of Community legislation. Enforcement of Community legislation is the responsibility of the Commission under the EC Treaty, and the Commission will continue to carry out this task.

On competition issues, the Commission recognises the need for improved co-operation between sector specific regulators and competition authorities at national and European level, in particular to ensure that NRAs' decisions are compatible with EU competition rules. But it sees no justification for the creation of a sector specific competition authority at EU level, particularly in the light of the Commission's proposals to further decentralise enforcement of competition law to Member State authorities.¹³

¹³ White Paper on modernisation of the rules implementing Articles 85 and 86 [now 81 and 82] of the EC Treaty, (OJ C 132-0001 12.05.99)

The Commission considers that issues concerning disparity of interpretation and application of Community legislation (e.g. NRA assessment of operators with significant market power) are best dealt with by improving co-ordination and co-operation between NRAs, and proposals to this effect are made in section 4.8 of this Communication.

Difficulties related to the introduction of pan-European services hinge on current licensing differences between Member States and the problem of co-ordinated assignment of spectrum in multiple Member States. This Communication contains proposals to simplify licensing (section 4.1) and to improve co-ordination on spectrum matters (sections 4.3 and 4.8).

2.6. Studies undertaken for the Commission in the context of the 1999 Review

The Commission Services have initiated a number of studies as input to the 1999 Review process (e.g. on interconnection, convergence between fixed and mobile networks and services, licensing). These studies address many issues of detail that are not covered in this Communication, and those responding to this Communication are invited to comment on other detailed issues covered by recommendations contained in the study reports. Study reports are published on the Commission's Information Society Promotion Office (ISPO) website¹⁴, as indicated in Annex II. A number of studies are still underway, and the results of these studies will be published on the ISPO website as soon as they are finalised.

3. OBJECTIVES, GUIDING PRINCIPLES AND DESIGN OF THE FUTURE REGULATORY FRAMEWORK

The **objectives** in section 3.1 set out the goals to be achieved by regulation in this sector. The **principles** in section 3.2 underpin the provisions of the regulatory framework to be put in place to achieve those goals, as well as the implementation of this framework by national level. The broad **design** of this regulatory framework is described in section 3.3.

3.1. Policy objectives for the sector

The speed of technological and market change is a recurrent theme in this Communication. The new regulatory framework will have to cater for market situations that cannot now be predicted with any degree of confidence. Coupled with the increasing globalisation of the sector, this means that legislative techniques involving detailed rules laid down in legislation will be ineffective. Regulators must have a clear set of policy objectives to guide regulatory action, and decide first whether policy objectives require regulation, and second, what type of regulation is best suited to achieving the objectives. In view of the pace of change in the sector, a major aim will be to ensure regulation is more flexible and responsive to change.

¹⁴ <http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>

In addition, the differing state of development of the market in each Member State means that similar issues will often arise at different times in different Member States. Mandatory provisions appropriate for some Member States may not be appropriate for others at different stages of market development. **Enlargement of the Community**, which will occur during the lifetime of the new regulatory framework, will accentuate this problem.

The tasks and objectives of the Community include promoting economic and social cohesion and a high level of employment, strengthening the competitiveness of Community industry, and contributing to the strengthening of consumer protection. With these Treaty objectives in mind, **the following set of policy objectives is proposed below**. These objectives are implicit today, but the future regulatory framework would make these objectives explicit in Community legislation, so that national regulatory authorities (NRAs) have a clear set of primary objectives to serve as a foundation for the actions they take at a national level.

The main policy objectives that underpin the existing regulatory framework and that will continue to drive future regulatory action are:

- ◆ **To promote an open and competitive European market for communications services, as the means of :**
 - providing EU consumers and businesses with the best deal in terms of low prices, high quality and maximum value for money;
 - ensuring that competition is not distorted in a complex and converging market;
 - offering choice and variety of innovative services in response to user needs;

- ◆ **To benefit the European citizen, by :**
 - ensuring that all citizens have **affordable access** to a universal service specified at European level, and access to a wide range of communications services;
 - **protecting consumers** in their dealings with suppliers, in particular by ensuring the availability of simple and inexpensive dispute resolution procedures;
 - ensuring a **high level of data protection and privacy** for citizens;
 - requiring **transparency of the tariffs and conditions** for using communications services, in order to allow users to make informed choices;
 - addressing the **special needs of specific social groups**, in particular disabled users.

- ◆ **To consolidate the internal market in a converging environment, by:**
 - **removing remaining obstacles to the provision of communications networks and services** at European level;
 - ensuring that, in similar circumstances, there is **no discrimination in the treatment of companies across the EU**;

- ensuring the effective management of scarce resources, in particular radio spectrum;
- encouraging the establishment and development of trans-European networks and the seamless interoperability of pan-European services.

Safeguarding Community interests in international negotiations is also an important objective for the Commission and Member States in this sector. Liberalisation of public telecommunications networks and services in 1998 as a result of the GATS/WTO agreement has been clearly beneficial to the Community. The Community will continue to press for extension of this agreement to other countries in the forthcoming WTO negotiations to ensure that electronic commerce and the Internet can develop at a global level.

3.2. Regulatory principles

The principles set out below are inherent in current Community policy, and their importance has been confirmed by many of the comments received in the course of the public consultation on the Convergence Green Paper, and by subsequent discussion with Member State regulatory authorities and market players. These will continue to underpin the approach to the new framework.

- ◆ *Regulation should be based on clearly defined policy objectives, fostering economic growth and competitiveness thereby promoting employment, and ensuring objectives of general interest where they are not satisfied by market forces.*

The main policy objectives for the sector are described in section 3.1.

Competition and a free market cannot meet all the policy objectives set out in chapter 3.1. The EU regulatory framework should therefore continue to be a combination of sector specific legislation, horizontal legislation and application of the competition rules.

- ◆ *Regulation should be kept to the minimum necessary to meet those policy objectives.*

An unduly restrictive regulatory system risks acting as a brake on investment or may fail to stimulate sustainable investment. Much of the current regulatory framework addresses the need to create a competitive market, for example by requiring incumbent operators to meet all requests for access to and interconnection with its network. Once a competitive market is effectively established, many of these provisions should no longer be necessary and it would therefore be sufficient to rely mainly on the application of the competition rules of the Treaty. The new framework should therefore build in mechanisms such as “sunset clauses” whereby certain basic rules are reviewed periodically to assess whether they are still necessary.

Wherever possible, the new framework should rely on existing horizontal regulation rather than sector-specific legislation. New regulation at EU level should be proposed

only where absolutely essential, for example where there is market failure to meet a particular public interest objective.

Market players should be encouraged to take self-regulatory initiatives, for example to develop codes of practice in those areas where a common approach is necessary, so as to minimise the need for formal regulation.

◆ *Regulation should further enhance legal certainty in a dynamic market.*

The regulatory framework should continue to offer legal certainty to market players, to allow them to make investment decisions with confidence.

However, in a market such as the communications sector, it is vital that the new regulatory framework is capable of adapting flexibly to market developments, if it is to remain effective in meeting its objectives. Detailed rules quickly become obsolescent, necessitating frequent changes in regulation thereby undermining legal certainty.

It is therefore proposed that the new framework should set out basic rules, principles and objectives, and supplement these with non-binding measures such as recommendations. In this context, it will be important to establish the right mechanisms to co-ordinate interpretation of these rules by regulators across the EU. The strength, independence and effectiveness of NRAs will also be essential to successful implementation of this model, as well as the availability of timely and transparent decision-making processes.

◆ *Regulation should aim to be technologically neutral.*

Technological neutrality means that legislation should define the objectives to be achieved, and should neither impose, nor discriminate in favour of, the use of a particular type of technology to achieve those objectives. The current legislative framework is not technologically neutral. Different rules apply, for example, to services provided over mobile and fixed networks, and to access to frequencies for telecoms and broadcasting networks. As has been mentioned earlier, convergence (whether between broadcasting and telecommunications, or between fixed and mobile telephony) allows the same service to be delivered over networks which hitherto have been regulated differently.

As far as possible therefore, regulation of communications services should not differentiate between technologies over which such services are delivered. Regulation that is based on specific technology can quickly become outdated, and may lead to inefficient investment by market players. This principle does not mean that all communications infrastructure should be regulated in an identical manner. Some rules are specific to certain types of network; for example, 'wireless' networks are subject to rules on frequency allocation and usage; 'wired' networks are subject to rules about rights of way and digging up streets.

But it does mean that the provision of services should be regulated in a homogenous way whatever the communications infrastructure on which they are carried, whether telecoms networks or broadcasting networks, so that the regulatory framework does not distort competition. There will continue to be instances, e.g. investigations under competition law, where different networks could constitute separate

markets and regulatory measures might need to be taken on the basis of specific network or product technologies. However, the principle of technological neutrality should not be used as a means to introduce more restrictive rules in any market.

- ◆ *Regulation may be agreed globally, regionally or nationally, but should be enforced as closely as is practicable to the activities being regulated.*

Increasingly, communications is a global market. Regulation is thus increasingly being agreed at global level for example in such fields as electronic commerce and spectrum management for global services. The Commission is continuing to pursue international solutions, consisting of principles and guidelines on industry codes of practice (self-regulation), interoperable technological solutions, and legal rules where needed.¹⁵ The global nature of convergence demands flexible international co-operation mechanisms.

Enhanced international co-operation will require flexible regulatory instruments whose scope will not be territorially confined, even though the sanction mechanisms for such rules would retain a territorial component. Experience in the EU has demonstrated that effective enforcement of legal measures is best when closest to the activities regulated.

This implies the following lines of approach:

- ◆ **Primary responsibility for achieving objectives set out in sector-specific Community legislation should rest with the independent national regulators, who are best placed to take account of the different levels of competition and market development in the Member States.**
- ◆ **The natural counterpart of such delegation is greater co-ordination of Member States' actions, in order to avoid fragmentation of the internal market; market operators are entitled to an environment in which pan-European services can be deployed without encountering significant regulatory differences in different Member States.**
- ◆ **This requires closer Commission monitoring and quality assessment activities to ensure consistent and effective implementation of regulation at national level.** Experience with the current legislative framework for telecommunications - which is quite detailed - shows that the way in which Community legislation is implemented at national level has a major impact on the actual level of competition in a market.
- ◆ **In addition, this approach emphasises the need for transparency and impartiality in the conduct of public authorities, coupled with effective dispute-settlement mechanisms, so that the fundamental economic and civil rights of citizens, economic operators and investors are protected.**

¹⁵ Communication on "Globalisation and the Information Society: The Need for Strengthened International Co-ordination" (COM/98/50, 04.02.98).

3.3. Design of the future regulatory framework

There is already horizontal regulation at Community level (e.g. on consumer protection) that is applicable to communications infrastructure and associated services. Naturally this legislation would continue to apply in parallel with the new regulatory framework. **The structure of the regulatory framework for communications infrastructure and associated services should consist of three key elements: binding sector-specific legislation, complementary non-binding sector-specific measures and competition law.**

In parallel the existing Article 86 Directives¹⁶ will be consolidated and simplified in one legal measure.

3.3.1. *Binding Community measures*

Binding Community measures would include a new Framework Directive based on the five regulatory principles, combined with four specific directives. This legislation would make provision for 'sunset' provisions (requiring existing obligations to be lifted, either after a fixed period of time, or in accordance with pre-defined criteria once the underlying objective has been met) and forbearance.

◆ the Framework Directive would:

- identify specific policy objectives for Member States (as set out in section 3.1);
- require Member States to act in accordance with the five regulatory principles in section 3.2 in implementing the provisions of the Directive;
- **guarantee specific consumers' rights** (e.g. dispute resolution procedures, emergency call numbers, access to information etc.);
- **ensure an appropriate level of interoperability** for communications services and equipment;

¹⁶ Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services (OJ L192/10, 24.07.90 "the Services Directive") **as amended by** Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC in particular with regard to satellite communications (OJ L268/15, 19.10.94 "the Satellite Directive")

Commission Directive 95/51/EC of 18 October 1995 amending Directive 90/388/EEC with regard to the abolition of the restrictions on the use of cable television networks for the provision of already liberalised telecommunications services (95/51/EC; OJ L 256/49, 26.10.95 "the Cable Directive")

Commission Directive 96/2/EC of 16 January 1996 amending Directive 90/388/EEC with regard to mobile and personal communications (OJ L 20/59, 26.01.96)96/19/EC (OJ L 74/13, 22.03.96 "the Mobile Directive")

Commission Directive of 28 February 1996 amending Directive 90/388/EEC regarding the implementation of full competition in telecommunications markets (96/19/EC, OJ L 74/13, 22.03.96 "the Full Competition Directive")

Commission Directive 1999/ 64/EC of 23 June 1999 amending Directive 90/388/EEC in order to ensure that telecommunications networks and cable TV networks owned by a single operator are separate legal entities (OJ L 175/39, 10.07.99 "the Cable Ownership Directive").

- set out the **rights, responsibilities, decision making powers and procedures** of NRAs (e.g. criteria for implementation of flexibility clauses, forbearance), including possibilities for appeal at national level and obligations to exclude arrangements that are contrary to Community competition law;
 - establish and lay down rules for the new Communications Committee and High Level Communications Group (see section 4.8.1);
 - contain common provisions, i.e. definitions, essential requirements, institutional arrangements;
 - make provision for **recommendations, best practice guides, codes of conduct developed by interested parties, and other complementary measures** to be used where appropriate, complementing the binding legislative measures.
- ◆ **Four specific Directives** (based on Article 95 of the Treaty) would be proposed as follows:
- Directive on **authorisations and licensing**, (based on the Licensing Directive¹⁷), including rules for effective management of, and access to, scarce resources;
 - Directive on the provision of **universal service**, incorporating elements of the current Voice Telephony Directive¹⁸, and Interconnection Directive¹⁹;
 - Directive on **access and interconnection**, (based on the current Interconnection Directive and the TV standards Directive);
 - Directive on **data protection and privacy in the telecommunications sector** (based on the Telecoms Data Protection Directive²⁰), updated and clarified to take account of technological developments.

These proposals constitute a substantial simplification and consolidation of current legislation, with the twenty existing legal measures reduced to six. The figure below illustrates this simplification.

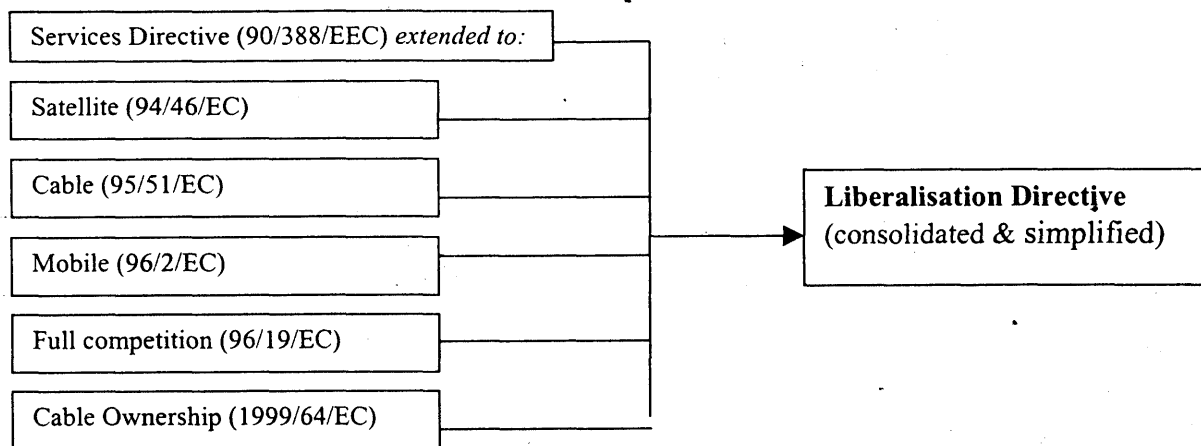
¹⁷ Directive 97/13/EC of the European Parliament and of the Council of 10 April 1997 on a common framework for general authorisations and individual licences in the field of telecommunications services. (OJ L 117/15, 07.05.97 "the Licensing Directive")

¹⁸ Directive 98/10/EC of the European Parliament and of the Council of 26 February 1998 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment (replacing European Parliament and Council Directive 95/62/EC) (98/10/EC; OJ L101/41, 01.04.98 "the Voice Telephony Directive")

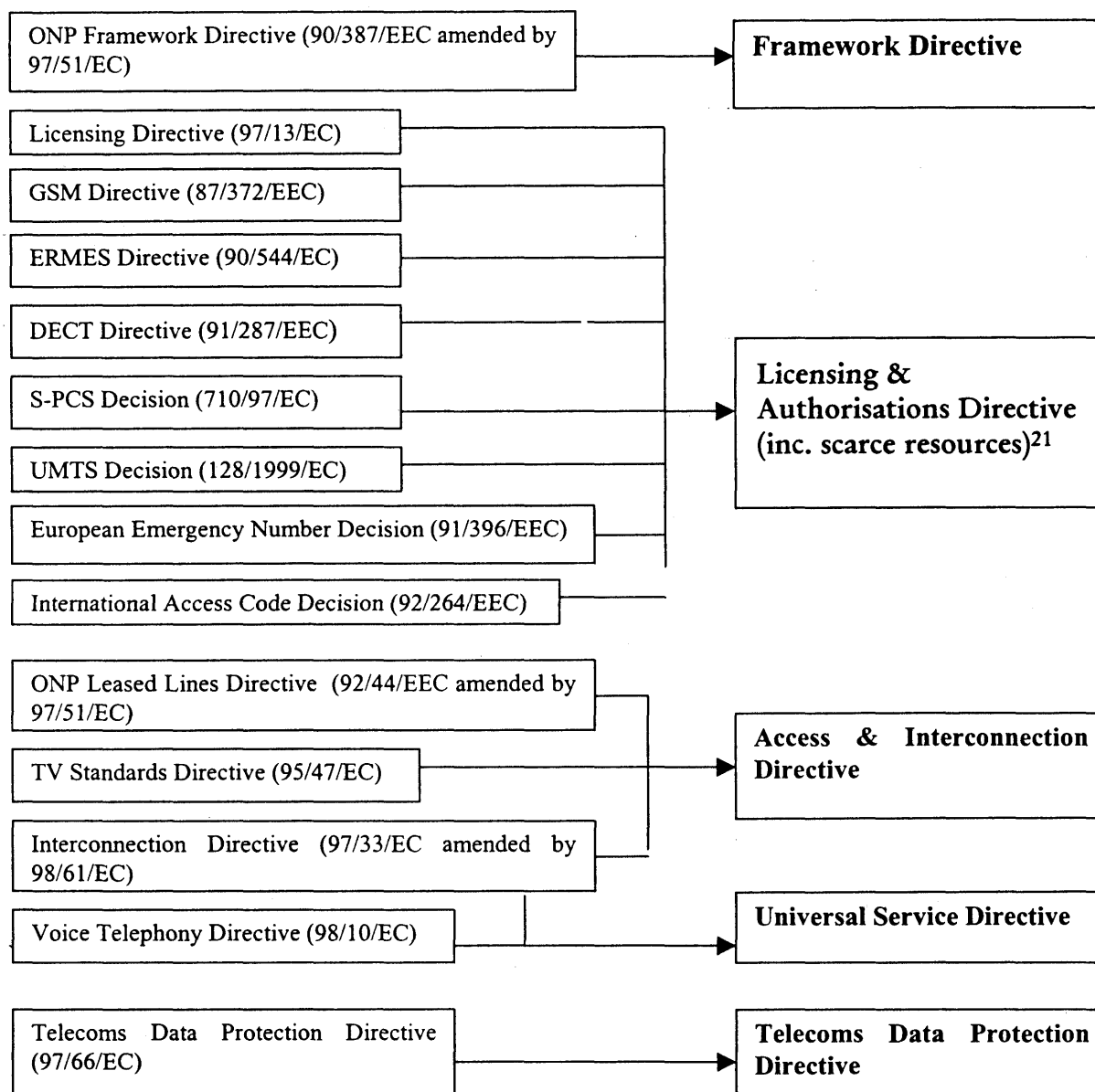
¹⁹ Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on Interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP) (OJ L199/32, 26.07.97 "the Interconnection Directive")

²⁰ Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector . (OJ L 24, 30.1.98, p1 "the Telecoms Data Protection Directive")

Article 86 Directives



Article 95 Directives/Decisions



²¹ Some of the provisions of the legislation relating to radio spectrum would be incorporated into the proposed horizontal Decision on harmonisation of radio spectrum (see section 2.3).

3.3.2. *Non-binding sector-specific measures*

Complementary measures include guidelines and recommendations developed by the Commission or national authorities. Where appropriate, codes of conduct, co-regulation agreements, recommendations, standards, memoranda of understanding, redress procedures, and other similar measures could be drawn up in parallel with the aim of achieving harmonised solutions to common problems. Such measures can be more easily and quickly agreed or adapted than legislation and – where they are agreed by consensus of interested parties and backed up by effective sanctions in cases of non-compliance – can be very effective.²² They provide a flexible tool for regulators, and will allow for regulation that is responsive to the changing needs of the communications services market.

3.3.3. *Competition Law*

As competition becomes fully established and the focus of concern migrates to the behaviour of market players, so competition rules will be of increasing importance in this sector. The Commission intends firstly to increase its surveillance of the sector in order to avoid incumbent operators extending their strong or dominant position throughout the converged markets, when sector specific rules designed to ensure competition are relaxed.

The Commission has already decided to launch a sector Inquiry under competition law to assess whether the current situation with respect to leased line tariffs, local telephone tariffs and mobile telephone (GSM/DCS-1800) roaming results from a violation of the competition rules or from a lack of competitive structure in the market place.²³

When deciding whether to handle complaints or open own initiative cases, the Commission will take into account the powers that National Regulatory Authorities have, acting within the ONP framework, to deal with the relevant matters. An essential element in this evaluation is the extent to which an NRA is in a position to provide an effective remedy for an infringement of Article 81 or 82. This may prove difficult, for example, in cases involving cross-border elements.

Under the ONP framework, NRAs must take into account, “the need to stimulate a competitive market” and may impose conditions on one or more parties, *inter alia*, “to

²² In addition, where necessary, sanctions can be made legally binding, e.g. by incorporating agreements into legislation. Different constructions will be appropriate in different circumstances.

²³ Current concerns include the lack of competition in the supply of international transmission capacity. The level of leased line tariffs and international leased lines for international half circuits from a number of Member States continue to differ substantially from domestic tariffs. In addition unexpected tariff inflexibility or movements can be noticed as regards local call tariffs; whereas sharp decreases can be noticed regarding long distance and international tariffs, local loop tariffs remain rather inflexible. Another area of concern is GSM/DCS-1800 roaming; although there is a trend towards mergers between major mobile operators, there seems to be no real emergence of national and European markets for offering wholesale roaming at competitive conditions.

ensure effective competition.”²⁴ In addition NRAs must ensure that actions taken by them are consistent with Community competition law.²⁵ This duty requires them to refrain from action that would undermine the effective protection of rights derived under the competition rules of the Treaty.²⁶ Therefore, they may not require behaviour or approve arrangements which are contrary to the competition rules²⁷. If the national authorities act so as to undermine those rights, the Member State may itself be liable in damages to those harmed by this action²⁸. In addition, the Commission could decide to challenge the relevant measures under Article 10 or Article 86 of the EC Treaty, in combination with the rules on the four freedoms and the competition rules.²⁹

24 Articles 9(1) and 9(3) of the Interconnection Directive.

25 They must not, for example, encourage or reinforce or approve the results of anti-competitive behaviour: Case 66/86, *Ahmed Saeed*, 1989 ECR 803; Case 153/93, *Federal Republic of Germany v Delta Schiffahrts*, 1994 ECR-I 2517; Case 267/86, *Van Eycke*, 1988 ECR 4769.

26 Case 13/77, *GB-Inno-BM/ATAB*, 1977 ECR 2115, at paragraph 33: “while it is true that Article 86 is directed at undertakings, nonetheless it is also true that the Treaty imposes a duty on Member States not to adopt or maintain in force any measure which could deprive the provision of its effectiveness.”

27 For further duties of national authorities see Case 103/88, *Fratelli Costanzo SpA*, 1989 ECR 1839.

See *Ahmed Saeed*, Case 66/86, 1989 ECR 803: “Articles 5 and 90 of the EEC Treaty must be interpreted as (i) prohibiting the national authorities from encouraging the conclusion of agreements on tariffs contrary to Article 85(1) or Article 86 of the Treaty, as the case may be; (ii) precluding the approval by those authorities of tariffs resulting from such agreements”

28 *Joined Cases C-6/90 and C9/90, Francovich*, 1990-I ECR 5357; *Joined Cases C-46/93, Brasserie de Pêcheur SA v Germany and Case C-48/93, R v Secretary of State for Transport ex parte Factortame Ltd and others*, judgement of 5 March 1996, 1996 ECR I-1029

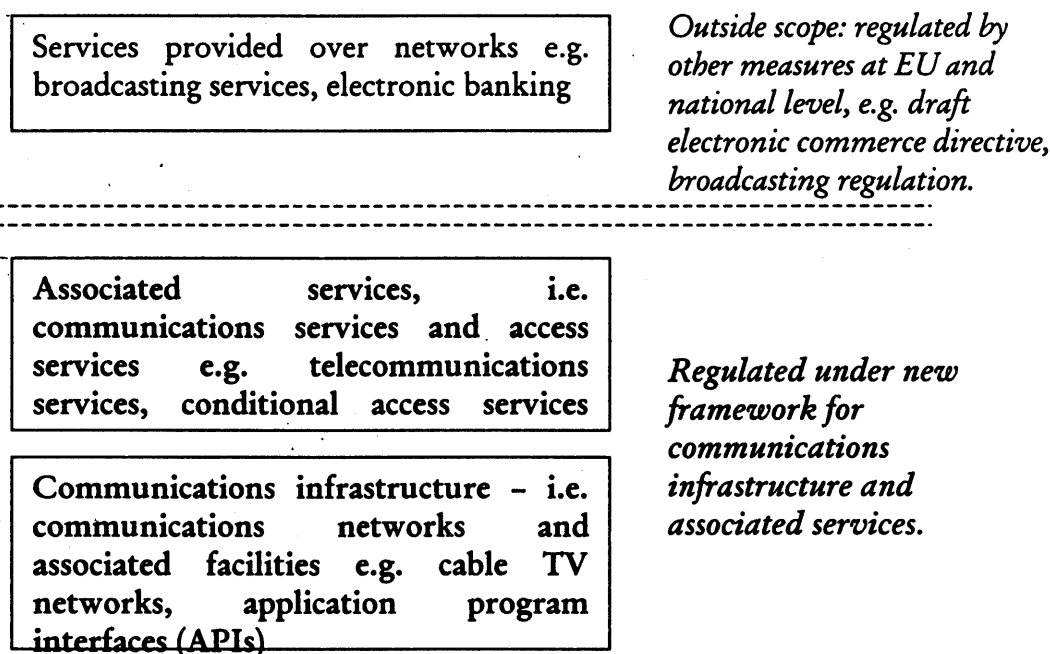
29 Articles 39-60, 81, 82

4. SPECIFIC PROPOSALS FOR CHANGE

In line with the long-term focus of this Communication, this section proposes legislative amendments designed to deal with the long-term issues that will be relevant for the new regulatory framework. However, this section also identifies a number of short-term issues where the Commission may take action, for example by adopting Recommendations, in advance of implementation of the new regulatory framework.

The figure below sets out the scope of this new framework. It shows three tiers: at the bottom is the basic communications infrastructure; in the middle are the services associated with that infrastructure; at the top are services provided over networks.

The new framework for communications infrastructure and associated services covers the activities represented by the lower two tiers of this figure. Regulation of services provided over networks, including content regulation, depends on the specific characteristics of those services and is outside the scope of this Communication.



4.1. Licensing and authorisations

Predictable, administratively efficient, transparent and effective licensing of communications services and networks is essential to the proper functioning of a vigorous, competitive internal market in communications. Licensing can become a barrier to market entry where it is characterised by delays, inconsistency and unnecessarily burdensome regulations and administrative procedures.

The current Licensing Directive has been successful in establishing principles of non-discrimination, transparency, proportionality and objectivity for the granting of

authorisations and licences by NRAs. These four general principles remain valid and should be incorporated in the new framework. The overall aim will be to simplify licensing arrangements.

4.1.1. *Individual licences and general authorisations*³⁰

The current Licensing Directive gives a large degree of flexibility to Member States to require individual licences for telecommunications services. In particular, Member States are permitted to require individual licences for voice telephony, a service which is provided by almost all telecoms operators. Many Member States have exercised this option, with the result that individual licences have become the rule rather than the exception in their territory. In a minority of Member States (Netherlands, Denmark, Sweden and Finland) voice telephony services are licensed under general authorisations, with individual licences restricted to use of limited resources (radio spectrum and numbers).

Requiring an operator to seek an individual licence gives regulators a large degree of control over market entry. As such it is a tool which should be used only in justified cases. Some Member States have been able to regulate effectively a market in which general authorisations are used for all wired telecommunications services. In this context, the Commission does not believe an approach based primarily on individual licences can be justified. The variation described above can also prevent the deployment of pan-European services (in particular in the satellite sector) if different regimes apply in different Member States to the same service. Moreover, in a market increasingly characterised by mergers and joint ventures, use of general authorisations would avoid the requirement to seek new individual licences in Member States.

It is essential that national licensing systems should be both predictable and place the minimum possible burden on applicants. The proposed new framework would require national regulators to use general authorisations to authorise all communications networks and services. But where operators require the use of scarce resources (i.e. radio spectrum or numbers) Member States would continue to be permitted to use specific authorisations (a concept which would replace the notion of individual licence in the new framework).

Even where operators require the use of radio spectrum, specific authorisations are not necessarily justified. In the consultation on the Radio Spectrum Green Paper there was a substantial amount of support for using general authorisations where spectrum allocation has been harmonised at Community level prior to the licensing process.

³⁰ "Individual licences" (which would be referred to as "specific authorisations" in the new framework) are authorisations granted by a national regulatory authority giving special rights to, or imposing specific obligations on, undertakings, where that undertaking is not entitled to exercise the rights concerned until it has received the decision by the authority.

"General authorisations" are authorisations that apply to all undertakings that offer specific categories of services, and do not require the undertaking concerned to obtain an explicit decision by the national regulatory authority before exercising the rights stemming from the authorisation. NRAs can require registration of undertakings operating under general authorisations.

Currently licences issued by Member States for services using spectrum link the authorisation to provide the service with the authorisation to use spectrum or numbers. Such a linkage is not essential. Spectrum or numbering rights, which are specific to a particular operator, can be contained in specific authorisations separate from the general authorisation to provide services. The new framework would require specific authorisations to be designed to be transferable between market players (with a requirement to ensure regulatory supervision of such transfers). In this way, the framework should permit the development of a secondary market for scarce resources (e.g. radio spectrum). (The issue of access to radio spectrum, and secondary trading in particular, is discussed in more detail in section 4.3, and the issue of numbering in section 4.6)

The current regime also permits individual licences to be used for access to rights of way, and the enforcement of obligations imposed either because an operator has Significant Market Power (SMP) or because an operator is required to provide universal service. The Commission considers that regulation of such rights and obligations can be just as easily achieved using general authorisations together with a requirement for operators to register with an NRA. Further discussion on rights of way can be found in section 4.1.6, on the concept of Significant Market Power in section 4.7.2, and on universal service in section 4.4.

Where a company breaches the conditions of a general or specific authorisation, an NRA would continue to have the right to prevent that company from operating under the authorisation and to impose measures to ensure compliance.

The consequences of such a change would be to reduce substantially the number of individual licences issued, thereby facilitating market entry, without hampering national regulators' ability to enforce regulatory obligations where necessary. It would no longer be permitted to require individual licences for voice telephony services and public telecommunications networks. Extending the use of general authorisations should also solve many of the problems associated with variations in Member States' licensing regimes, removing much of the need for mechanisms such as a single European licence or a system of mutual recognition of authorisations.

4.1.2. Authorisation of broadcasting transmission networks

The current regulatory framework covers telecommunications networks. Under the Satellite Directive the conveyance or transmission by satellite of radio and television programmes is also considered as a telecommunications service³¹.

The new framework would include all broadcast networks (terrestrial, satellite, and cable) as well as telecommunications networks in its scope. This is in line with the principle of technological neutrality, i.e. that there is no discrimination between different means of transmission. It also responds to the conclusions of the public

³¹ This is made clear in recital 17 of the Satellite Directive which states that "the provision of satellite network services for the conveyance of radio and television programmes is a telecommunications service for the purpose of this Directive and thus subject to its provisions [i.e. has been liberalised]".

consultation on convergence, which indicated the need for a more horizontal and consistent regulatory framework of all communications infrastructures.

The licensing of broadcasters, insofar as those licensing provisions regulate the content of transmissions, is not the subject of this Communication and is not covered by the new regulatory framework for communications services and infrastructures. This implies two separate authorisations, one relating to operation of the network infrastructure and the transmission of broadcast signals, and the other concerned with the content of broadcast transmissions.

In most cases the operation of the broadcast network infrastructure is already undertaken by a separate company³². Where this is not the case, separate authorisations would in principle be required, but transitional arrangements could be put in place for existing licensed broadcasters to ensure a smooth transition to the new framework. The conditions set out in authorisations for the operation of network infrastructure will depend on the range of services offered over that network. In particular such conditions must ensure transparency, non-discrimination and equality of access where the network is also used for 'liberalised' services, i.e. services not provided under special and exclusive rights in accordance with Community legislation.³³ The regulatory framework will provide for appropriate transitional arrangements for existing licensed operators.

4.1.3. Categories of authorisations and harmonisation of licensing conditions

Many Member States currently divide licensing of telecommunications services into several different categories (e.g. relating to network operation, service provision). The result is that the same operator may operate under a different category of licence in different Member States, and this can cause difficulties where it wishes to provide the same service across the EU. There is evidence that this is compromising the creation of a truly competitive internal market, as well as causing a situation in some cases where the licence is conditioning the provision of the service.³⁴ Such categorisation is generally based on traditional telecoms service definitions, which will be increasingly challenged as convergence revolutionises the sector (there is some evidence that this is already occurring e.g. in relation to voice over Internet Protocol (IP) services). Finally, such categorisation could have the effect of holding back innovative service offerings which do not match the categorisation imposed at national level.

³² Some broadcasters own and operate their own transmission networks in Belgium, Ireland, Italy, Greece, Portugal, Germany and Finland.

³³ During the Convergence Green Paper consultation, data broadcasters (e.g. providing data services such as "digital text") complained that they were having difficulty sustaining contractually-agreed access to digital terrestrial television (DTTV) multiplexes. Capacity in DTTV multiplexes (MUX) is very scarce. Often television broadcasters are MUX operators and may discriminate against data broadcasters in favour of their own services or other television broadcasters. Moreover, television broadcasters have expressed concern about the potentially harmful effect on competition where a competitor is the MUX operator because it is in a position to allocate more capacity to its own service than theirs. The same problems may also arise in the context of Digital Audio Broadcasting (DAB).

³⁴ European Telecommunications Office (ETO) reports on Categories of Authorisations and Information required for verification (November 1999)
<http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>

The use of general authorisations for all services and networks should solve many of the problems which operators currently experience in respect of differing categories of authorisation in Member States. But it is proposed to establish procedures to agree on a set of EU-wide categories of authorisation which would be applied by all Member States, to ensure greater consistency of licensing regimes at national level.

Harmonisation of conditions attached to authorisations would be dealt with under the proposed new institutional arrangements described in section 4.8. The current Licensing Directive contains an Annex setting out a maximum list of conditions which can be attached to individual licences and general authorisations. The list is rather general, such that conditions attached to licences and the information required for verification vary widely across the EU and between sectors³⁵. It is proposed to reduce the list of conditions in the revised Licensing Directive. Any subsequent changes would be effected using the institutional procedures described in section 4.8. In addition provision would be made for service providers to take any difficulties they encountered in respect of authorisations before the proposed High Level Communications Group.

4.1.4. Licence fees & administrative costs

Licence fees vary widely across the EU³⁶. The current regime requires that fees for licences reflect administrative cost. This rather general principle has tended to reduce the transparency of national licensing fee levels. It is therefore proposed to restrict the principle to justified and relevant administrative costs only, with scope for guidelines or Recommendations on fee levels and administrative procedures. Such guidelines should draw on best practice and encourage benchmarking, in order to produce a system which is more transparent, and where there are clearer links between fees and justified and relevant administrative costs.

4.1.5. Internet

Internet service providers who provide communications services for access to Internet are already covered by the existing licensing framework. In accordance with the approach described above, the provision of communications services will be subject only to general authorisations. Some Internet service providers however also provide content as part of their service offering. The proposed licensing framework would not cover the provision of those services.

Assuming that over time the voice over the Internet service meets the key criteria for classification as voice telephony under the regulatory framework³⁷, there is no reason to regulate this service differently from other voice telephony services. Provision of IP-based communications services (including voice over Internet services) would be covered by general authorisations.

³⁵ See ETO reports *ibid*.

³⁶ See Fifth Report on the implementation of the telecommunications regulatory package; and ETO report on Fees for licensing telecommunications services and networks at <http://www.ispo.cec.be/infosoc/telecompolicy/en/study-en.htm>

³⁷ Commission Notice concerning the Status of voice communications on Internet under Community law and, in particular, pursuant to the Services Directive (OJ C6, 10.01.98)

4.1.6. *Rights of Way and cable landing rights*

The existing regulatory framework requires that new operators have comparable access to rights of way as incumbent operators. In practice, for environmental and other public interest reasons, access to rights of way in most Member States is often controlled by local authorities, (which may also operate or have interests in their own systems). There is some evidence to suggest that the current rules are not providing new entrants with adequate and timely access to rights of way.

A recent study undertaken for the Commission³⁸ has revealed wide disparities between Member States on the rules regarding landing rights for submarine cables. These rules derive from aspects of national law well outside the communications sector. The Commission considers that Member States could do more to provide transparency on these rules.

4.1.7. *Commission position*

It is essential to reduce administrative barriers to entry in order to promote a competitive European market for telecommunications services. In particular it is proposed to:

- Use *general authorisations* as the basis for licensing communications networks and services, with *specific authorisations* reserved for assignment of radio spectrum and numbers;
- apply a comprehensive and coherent policy framework to communications infrastructures, including broadcast networks, with appropriate transitional measures where necessary.
- restrict range of possible conditions which can be attached to authorisations; establish procedures to agree on categories of authorisations at EU level;
- Ensure fees for authorisations cover only justified and relevant administrative costs, and draw up EU level guidelines to promote best practice and transparency;
- continue to authorise communications services using the Internet in an equivalent manner to other communications services.

4.2. Access and Interconnection

In Community legislation, 'access' is a generic concept covering all forms of access to publicly available networks and services, whereas 'interconnection' refers to the physical and logical linking of networks. This section deals with access and

³⁸ Study on submarine cable landing rights in Member States and existing practices for provision of transmission capacity on international routes, including terrestrial circuits, submarine cables and satellite links (September 1999) <http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>

interconnection arrangements between suppliers; *customer* access is dealt with in section 4.5.

Rules for access and interconnection ensure interoperability and are essential to allow competition to become established. The aim of the future regulatory framework is to ensure that competitive markets for services and networks exist at both the wholesale and retail level, in particular for new services (e.g. broadband and multimedia). Importantly, given the objective of relatively easier entry through changes in the licensing framework, the Commission proposes to combine rules set out in legislation with complementary measures such as Recommendations. In this way, the new framework seeks to ensure that new entrants and existing operators can take investment decisions with the maximum of regulatory certainty.

The conditions under which a network must be made available to others are laid down in its licence or authorisation issued by the Member State. Some networks are by their nature 'private' networks, not accessible to third parties; examples include real or virtual private networks for intra-company use, private radio networks used by emergency services, utilities, security services, and many other organisations, and terrestrial analogue broadcast networks. The positions set out in this section do not apply to such networks.

In shaping the broad policy principles for access and interconnection, the regulatory framework should not distort incentives for investment and innovation in services and infrastructure. In particular it is important to recognise the different commercial relationships that apply in different situations. In the case where an operator requests interconnection for call termination (i.e. where one network operator hands over a call to an interconnected operator for delivery to the called customer) there is no commercial relationship between the network operator requesting interconnection and the called customer. This is in contrast to the situation where a supplier requests access to a network or facility in order to establish a commercial relationship with the customer of the access provider. An example of the latter would be where an Internet service provider seeks access to the broadband transmission capabilities of a cable TV operator in order to provide high speed Internet access to customers of the cable TV network, and thereby generate direct revenue from them. The regulatory framework, and in particular any pricing rules, need to take account of the difference between the two situations.

4.2.1. *Access to infrastructure*

Current Community legislation contains a general requirement for telecommunications operators with Significant Market Power³⁹ to grant all reasonable requests for access to their networks. This requirement is restricted to operators of

³⁹ Operators are generally deemed to have significant market power (SMP) when they have more than 25% of a particular telecoms market in the geographical area of a Member State in which it is authorised to operate. In practice, up to now this has meant the incumbent operators, although in some markets (e.g. mobile telephony), some new entrants are now approaching this threshold. Member States are permitted to determine that an organisation with more than 25% market share does not have SMP, or that an organisation with less than 25% is deemed to have SMP. For discussion of this concept, and how it is proposed to amend it, see section 4.7.2.

public telecommunications networks, and does not cover access to other communications infrastructures.

The key issue for the future is whether specific forms of access to certain network elements or infrastructures should be mandated, and if so, whether/how the price should be set. Mandating network access has considerable implications for investment in infrastructure and the overall level of competition in the market.

In some cases, access is required only as a transitory measure to underpin the market development activities of a new entrant until new infrastructure can be installed. However, there can be a clear conflict of interest between infrastructure owners and organisations seeking access, especially when these firms compete in the same downstream markets. As competition increases, the number and variety of 'access' disputes are likely to grow.

Examples of areas of access disputes include:

- access for new entrants to the local loop of incumbent network operators (local loop unbundling);
- access to mobile network infrastructures (e.g. to permit market entry by what are known as Mobile Virtual Network Operators or MVNOs);
- access to intelligent network functionality of fixed and mobile networks;
- access to broadband networks;
- access to submarine cables;
- access to satellite systems;
- access for content providers (broadcasters) to cable TV networks or satellite systems;
- access for Internet service providers to cable TV networks;
- access to set-top box facilities, notably conditional access systems, application program interfaces (APIs), and API-dependent systems like electronic programme guides (EPGs);
- access to broadcasters' networks for interactive applications.⁴⁰

The final four cases also involve issues related to access to content.⁴¹

A common feature of most of these disputes is that the 'access requester' seeks some form of access in order to generate revenues from customers of the 'access provider'. The provision of resale services also falls into this category, and can be dealt with under a generic approach to access.

In most competitive markets, access arrangements would be left to commercial agreement between suppliers. However, the current state of the communications market, and limitations in the number of customer distribution networks that can be economically justified, means that some regulatory involvement may be appropriate to ensure fair competition at all levels in the market.

⁴⁰ Raised by the forthcoming introduction of technologies to allow a digital terrestrial TV return channel.

⁴¹ Issues associated with access to content will be dealt with in a separate Communication.

In many cases it is not economically viable for a new entrant to duplicate the widespread infrastructure of a cable TV operator or a local telephone company for access to SMEs and residential customers. In the case of mobile networks, there may not be spectrum available to increase the number of market players. The network operator that owns or controls the infrastructure to the customers location is able to control (or deny) both the customers' choice of service provider and a service provider's access to the customer.

For access to network elements and infrastructure, the new regulatory framework would rely primarily on commercial negotiation. Any party would have the right to request access; it would not be limited to those with networks or other investments. But there would be no obligation to agree to the request if neither party had market power (see below). This draws upon the approach of existing telecoms regulation in the area of interconnection (see section 4.2.2) and that of the TV Standards Directive in respect of conditional access systems.

For access providers with market power, a two-tier approach is proposed. For access providers with significant market power (normally a share of more than 25% of the relevant market), the new framework would impose an obligation to negotiate access. In order not to hinder innovation, this obligation to negotiate access would not apply in small newly emerging markets where *de facto* the market leader is likely to have a substantial market share. For access providers who were dominant (assessed in the same way as under competition law), there would be an obligation to grant all reasonable requests for access, building on the current obligation in the Interconnection Directive. Section 4.7.2 deals with dominance and SMP in more detail.

In all cases, the new framework would permit either party to call in the regulator in the event of an unresolved dispute; this would be supplemented with a reserve power for the regulator to intervene on its own initiative in order to ensure fair competition. The degree of regulatory intervention should be in proportion to the degree of competition in the market; the more competitive the market, the less need there would be for a regulator to intervene.

The role of Community legislation should be to provide a framework of principles for NRAs in the Member States to deal with access issues, while leaving the actual decision-making to individual NRAs, acting in the light of their specific market conditions. The alternative - seeking to address these issues via a series of network-specific legal measures at Community level - is not considered appropriate for the reasons discussed in chapter 3 above. The principles laid down in Community legislation would cover *inter alia*: justifications for NRA intervention⁴², in particular for mandatory access; links between access obligations and market power; pricing

⁴² The report on "An assessment of the situation of interconnection in telecommunications in the European Union and the need to review the Interconnection Directive" (October 1999) proposes three grounds for regulatory intervention: (a) to correct for actual market failure (on an ex-post basis); (b) to prevent market failure (on an ex-ante basis) where there is evidence that market failure would occur and the delays involved in ex-post intervention would substantially harm the development of competition; (c) to protect consumers and to enhance consumer welfare where an unregulated market would fail to produce these outcomes.

principles; need for assessment by NRAs of the impact on users and access providers; procedures for notification of proposed actions to the Commission and for co-ordinated action by NRAs, e.g. on the basis of Commission Recommendations.

4.2.2. Interconnection

The current regulatory framework grants network operators rights and obligations to negotiate interconnection, with the possibility of regulatory intervention to resolve disputes if commercial negotiation fails. Member States also have a duty to ensure adequate interconnection of specific networks in order to ensure end-to-end interoperability of services that are mandated at Community level.⁴³ These elements are regarded as the minimum level of regulation for interconnection in the new regulatory framework, which will apply irrespective of the network technology employed. Commercial negotiation would be the norm for new services where the former monopoly operators have not inherited undue market power.

Some other provisions in the current regulatory framework serve as substitutes for effective competition, for example by imposing an obligation on fixed network operators with significant market power to provide interconnection to others in accordance with the principles of cost orientation, transparency and non-discrimination.

The Commission anticipates the development of differentiated markets such as (a) call origination services (b) the provision of transit capacity and (c) the provision of call termination services, with the competitive position in each of these markets evolving differently. The future regulatory framework should therefore allow for progressive relaxation of *ex ante* obligations in specific markets, once it could be shown that competition was sufficiently strong to guarantee equivalent outcomes.

The Commission foresees a procedure whereby the decision to lift a particular *ex ante* obligation would be taken by the NRA, subject to advance consultation with the Commission, in accordance with criteria laid down in Community legislation, such as the market power of the operator and the degree of competition in the relevant market (see section 4.7.2). However, studies carried out for the Commission⁴⁴ indicate that it may be some time before effective competition becomes a reality in all markets. In particular, under the current tariff regime of calling party pays, it is anticipated that the market for local call termination will remain essentially uncompetitive, so that the current *ex ante* obligations for cost orientation of local call termination tariffs will continue to apply.

Internet service providers would be covered under the generic approach to access and interconnection outlined above, with NRAs required to ensure fair and non-discriminatory treatment, in particular when an incumbent operator is also an Internet service provider.

The figure below summarises the obligations applicable to the different classes of operator for access and interconnection.

⁴³ Fixed and mobile telephone networks and leased line networks

⁴⁴ Report on Interconnection (ibid.).

	Dominant position	Significant market power	Other
Nature of obligation	<i>provide interconnection & access</i>	<i>Negotiate interconnection & access</i>	<i>negotiate interconnection</i>
Pricing	<i>cost orientation</i>	<i>Commercial negotiation</i>	<i>commercial negotiation</i>
NRA role	<i>ex-ante price regulation</i>	<i>Reserve power to intervene</i>	<i>dispute resolution</i>

This approach has been defined by taking due account of the commitments entered into by the European Community and its Member States in the context of the Fourth Protocol to the General Agreement on Trade in Services (GATS) concerning basic telecommunications services in respect of major suppliers.⁴⁵

4.2.3. Access to the local loop

The local loop is the link that connects the customer's premises to a telecommunications network, typically by means of pairs of copper wires (although fibre optic cables are increasingly being deployed in the local access network, particularly to connect large customers).

Community legislation does not explicitly require local loop unbundling, whereby competitors have full and exclusive use of the copper pair to the customer, but covers at least some forms of shared access to the local loop. Where proportionate, Member States can mandate the incumbent operator to provide local loop unbundling under national legislation. At present, some Member States require (or will require) complete unbundling of the local loop, some provide for access to the local loop in the form of high speed bit-stream services, in particular for Internet access, and others have still to take a position.⁴⁶

The Commission considers that the availability of unbundled access to the local loop increases competition⁴⁷ and that it could in addition speed up the introduction of high speed Internet access services. The Commission welcomes the fact that most Member

⁴⁵ "Major supplier" is defined in this Protocol as the following: "A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of: a) control over essential facilities; or b) use of its position in the market."

⁴⁶ Local loop unbundling is currently being provided at published prices in Germany, Finland, Denmark, Netherlands and Austria. Italy should shortly publish these conditions. In the UK OFTEL has taken the view that physical unbundling should be provided by July 2001. France, Ireland and Sweden have been consulting on the issue, and the results are expected to be announced in 1999.

Various forms of bit-stream access for Internet service providers is now being launched in a number of countries such as Belgium, Denmark, France, Germany, Spain, Sweden and UK, and widespread deployment of these high speed access services in the Community is expected from year 2000.

⁴⁷ Commission Decision on the Telia/Telenor merger (M.1439, 13.10.99 not yet published)

States are moving in this direction. However, care must be taken that the implementation of local loop unbundling does not result in disincentives for network investment. (See also section 4.2.8 on Costing and Pricing).

The Commission is considering the adoption of a Recommendation on leased line interconnection⁴⁸ which *inter alia* encourages Member States to pursue measures, such as local loop unbundling and licensing of wireless local loops, that increase competition in the local access network. In order to support the trend towards unbundling of the local loop, the Commission is considering a further Recommendation on pricing and other aspects of local network access.

In the area of network access, Recommendations to Member States are seen as a timely and effective means of addressing the complex technical and economic issues involved.

4.2.4. Access to cable and must-carry rules

In addition to television services, modern cable TV networks can provide telephone services and high speed Internet access services. Liberalisation is designed to encourage alternative infrastructures, and the Cable Ownership Directive requires incumbent operators which have a dominant position and operate a cable TV network under special or exclusive rights to have a separate legal entity for the cable business.

In view of the vertically integrated structure of some cable companies (i.e. as providers of infrastructure and communications services, and services provided over networks), there have been calls for *ex ante* open access conditions to be imposed on cable operators.

The Commission, noting the alternatives that exist or are rapidly developing for the delivery of all these services (i.e. satellite TV, mobile and fixed telephone services, high speed Internet access using Asymmetric Digital Subscriber Line (ADSL) technology over telecommunications networks) does not consider at present that mandating access to cable TV networks would be appropriate at EU level. However, under the generic approach to access described in section 4.2.1 above, it would be appropriate for Member States to place an 'obligation to negotiate access' on a cable TV operator with significant market power for delivery of broadband services (or an obligation to grant access in the case of a dominant operator), with the possibility of NRA intervention if commercial negotiation fails.

The situation will be kept under review and, following the approach outlined above, Recommendations could be issued to NRAs if appropriate.

On the basis of the proposed approach to access, the advent of digital broadcasting where there are commercially and technically viable alternative delivery mechanisms, means must-carry rules should be reassessed. This does not necessarily imply that the imposition of such obligations, or the evolution thereof, on cable operators will no longer be justified, for example concerning public service broadcasting. Any such rules, which concern issues related to content, must be justified and proportionate.

⁴⁸ Commission Recommendation on leased lines interconnection pricing in a liberalised telecommunications market (*not yet adopted*)

4.2.5. *Digital television interoperability*

The TV Standards Directive imposes the requirement on conditional access providers to license conditional access systems (CAS) on ‘fair, reasonable and non-discriminatory terms’ to broadcasters and manufacturers. This regulatory requirement has been reinforced by market-led technical interoperability procedures for these systems.

New facilities have emerged since that directive was adopted,⁴⁹ notably the applications program interface (API) which operates the electronic programme guide (EPG) and plays a key role in delivering interactive services. The directive does not cover APIs and so far no technical procedures have emerged to support API interoperability. This means broadcasters have to adapt interactive applications for different platforms. Manufacturers are also concerned about market fragmentation arising from a proliferation of APIs.

In the absence of API interoperability, national regulators have mandated the provision of EPG information or sought to mandate Digital Video Broadcasting (DVB) service information to achieve interoperability between EPGs⁵⁰. Suggestions for addressing API interoperability include **compulsory licensing and publication of APIs and functional interoperability** (publication of essential interfaces and very limited standardisation of key protocols). Another option is to put less emphasis on interoperability and more on the possibility, inherent in software downloads, to migrate away from proprietary APIs towards a common, open one (the approach of the DVB Multimedia Home Platform). The Commission considers that the approach in the existing telecoms framework to standardisation would be appropriate in seeking to ensure digital television interoperability. This approach is set out in section 4.2.6 below.

Other decoder functions like storage and memory raise another kind of access issue. Currently, these are limited resources in TV decoders and the party responsible for managing these facilities may be tempted to discriminate against third parties. The issues raised are comparable to those raised by co-location of different telecommunications operators’ equipment. As these functions expand, and as consumers increasingly start to manage these facilities themselves, this problem is likely to diminish.

4.2.6. *Standardisation*

In the current regulatory framework for telecommunications services, implementation of standards is largely seen as a voluntary process, with NRAs being required to encourage the use of European standards where they exist, but with the possibility for making standards mandatory at the EU level after a period of public consultation.⁵¹

In particular, NRAs have to ensure that telecommunications network operators and service providers take full account of the standards listed in the ONP List of Standards

⁴⁹ Their functionality is discussed in greater detail in the report on the Digital Television in the European Union.

⁵⁰ Other related issues concerning the provision of content may impact on EPGs.

⁵¹ See Article 5 of the ONP Framework Directive as amended.

which is published regularly in the *Official Journal of the European Communities*.⁵² This list identifies European standards considered suitable for open and efficient access, interconnection and inter-operability.

In exceptional cases, implementation of specific standards is made mandatory (e.g. the leased line standards in the Leased Lines Directive⁵³). The Commission can request the European standards bodies to develop European standards where necessary.

This framework leaves standardisation in the hands of market players in the first place, but provides procedures to ensure open access and interoperability if voluntary processes do not succeed. This framework will continue to be appropriate for the future converging markets.

In particular it would appear to be suitable for ensuring interoperability in the digital TV market. Just as in telecommunications, the dynamic nature of the market and the increased flexibility of software mean it is advisable to rely as far as possible on the market to deliver interoperability. Otherwise there is the danger that the imposition of extensive interoperability requirements at an early stage could hamper market development. In this context it will be important for consumer organisations and regulators to promote high levels of information and awareness so that consumers are empowered to take their own decisions. But there remains a strong consumer and industry interest in interoperability in the communications sector as a whole. If voluntary, market-led procedures were to fail, the new framework would allow European standards to be made mandatory via the institutional arrangements set out in section 4.8.1 and on the basis of full public consultation, so as to ensure open access and interoperability.

4.2.7. Carrier selection and pre-selection for mobile

Carrier selection is a form of network access that is mandated under the current regulatory framework for interconnection; fixed network telephone operators with significant market power are required to offer carrier selection and, by 1. 1.2000, carrier pre-selection on their networks. These obligations were introduced to stimulate competition and give users choice, taking into account the fact that competition would develop more quickly in the long distance and international markets than in the local access market.

In considering the possible application of these rules to mobile networks, it is important to recognise the differences between the fixed and mobile markets. The mobile market is structured quite differently. It is a competitive market; customers can (and do) switch between suppliers to a much greater extent than on fixed networks. The key issue is the extent to which a network operator is able to isolate itself from competitive pressure which would force it pass on savings on to the consumer. There are two aspects to this. One is the nature of the contract between the mobile operator and its consumers, including the freedom for consumers to change

⁵² OJ C 339, 19.11.1998, p.6

⁵³ Council Directive of 5 June 1992 on the application of open network provision to leased lines (92/44/EEC; OJ L165/27, 19.06.92), as amended by Directive 97/51/EC, (OJ L 295/23, 29.10.97 "the Leased Lines Directive")

suppliers with no penalty and in a timely manner. The other is the extent to which operators will use different call termination prices as part of their price offerings to consumers. Where the market appears to inhibit developments in both contract terms and innovative pricing schemes, there is *prima facie* evidence that mandated indirect access schemes, in particular carrier selection, would be beneficial to the market. However, where these constraints to the operation of the market do not exist, the case for such schemes is considerably weakened.

Balancing these arguments, the Commission considers that customer choice remains the key test, and the lack of carrier selection means that the calling customer has to accept the network operator's choice of routing and tariffing for calls to other networks. It is proposed that carrier selection should be an obligation for mobile telephone network operators with significant market power, but not carrier pre-selection.

The Commission has not yet taken a position on whether obligations on mobile network operators for carrier selection should also apply to multi-media services provided on third generation mobile networks.

4.2.8. *Costing and pricing of interconnection and access*

In the context of interconnection and access, any regulatory intervention on pricing should provide a set of signals that stimulate the emergence of competition and lead to genuine market-based outcomes. Pricing rules should be neutral as to service or network based competition, allowing individual firms to decide on the most appropriate network and service mix needed to achieve their strategic objectives. In particular, where retail price regulation is also enforced to protect consumer interests, care is needed to avoid anti-competitive effects such as price squeeze.

The 'weight' of any pricing rules should reflect the degree of competition in the market. For interconnection, the obligation for cost orientation is laid down in primary legislation and the use of long run average incremental cost methodology (LRAIC) for call termination is set out in Commission Recommendations.⁵⁴ This construction gives sufficient flexibility while ensuring legal certainty, and it is anticipated that the approach whereby the Commission recommends suitable costing methodologies could be applied to other types of interconnection and/or access as necessary. While LRAIC has been recommended for call termination, other pricing methodologies (such as 'retail minus') may be more appropriate for other types of access where markets are more competitive and the company requesting access is seeking to generate new revenue streams from customers of the access provider.

Until such time as LRAIC based interconnection charges are introduced, the Commission has recommended a set of 'best current practice' interconnection charges for call termination, which are updated annually. Currently these provide per-minute charges for local, single transit and double transit interconnection. In the light of the

⁵⁴ Commission Recommendation of 8 January 1998 on Interconnection in a liberalised telecommunications market (98/195/EC, OJ L 73, 12.03.1998) and Commission Recommendation of 29 July 1998 amending Commission Recommendation 98/195/EC (OJ L 228, 15.8.1998)

many innovative tariff packages that are appearing on the market at present, in particular for dial-up Internet access, future updates of this Recommendation may need to take into account tariff structures other than a simple per-minute charge. Also, as call transit becomes a more competitive market, it may be more appropriate to focus on local call termination only.

Demand for some forms of access to existing infrastructure can be of a temporary nature while a new entrant builds out its network. This gap results in a special form of the 'make/buy' decision and hence provides the basis for a pricing rule which recognises the transitory nature of the access sought by a new entrant. The case of local loop unbundling presents a specific problem, in that there is a legacy of unbalanced tariffs in most Member States which adds complexity to this issue.

As a consequence, if LRAIC based tariffs are applied to unbundled local loops (on the grounds that LRAIC sends the appropriate price signals to encourage sustainable investment in alternative local network infrastructures), it could be argued that there is the possibility of a 'price squeeze' between the actual telephone retail prices and the wholesale price of an unbundled local loop charged to new entrants. On the other hand, it is necessary to take into account that local loop unbundling allows more services than simple voice telephony; this is the case in particular for fast Internet access. Therefore the wholesale price for local loop unbundling cannot always be compared only to the retail price for voice telephony in order to establish the risk of a price squeeze.

Wholesale prices for unbundled local loops should be set at a level that stimulates competition in the retail market. One option to avoid this price squeeze is to require that the incumbent's retail prices for a service exceed the prices of the component parts (e.g. unbundled loops and co-location) by a reasonable margin⁵⁵. A second option is to require the incumbent operator to rebalance its end user tariffs in line with the principle of cost-orientation. Another would be to have all wholesale prices based on a pricing principle such as fully allocated historic costs, with a migration path to ensure that over a defined period both retail and wholesale prices become aligned to the prices that would apply in a competitive market. The transitional period would depend on the specific market conditions and the speed with which tariffs can be re-balanced. A regulator should not force new entrants to apply unbalanced tariffs in the retail market as a consequence of the failure of an incumbent to rebalance its tariffs. Discussion of more detailed aspects of access and interconnection can be found in various reports⁵⁶, available at <http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>.

4.2.9. *Commission position*

The Commission recognises the critical importance attached to the provision of access and interconnection services in terms of developing a competitive European market. The Commission proposes to:

⁵⁵ Such conditions were imposed in the recent Commission Decision on the Telia/Telenor merger.

⁵⁶ Reports on Interconnection (ibid.) and "Consumer demand for telecommunications services and the implications of the convergence of fixed and mobile networks for the regulatory framework for a liberalised EU market" (November 1999)

- maintain specific Community measures which govern both access and interconnection, building on the principles set out in the Interconnection Directive and the TV standards Directive;
- in the case of access to network infrastructures, place responsibility on NRAs in Member States to deal with specific access issues, including resale of services, according to a set of conditions and criteria laid down in Community legislation; require infrastructure owners with significant market power to negotiate, on commercial terms, in respect of requests for access; require dominant infrastructure owners to meet reasonable requests for access; maintain the possibility of NRA intervention to resolve disputes;
- in the case of interconnection, maintain the requirement for cost orientated interconnection in directives (hard law) but interpret this concept through Commission recommendations; maintain the Recommendation to use LRAIC for pricing call termination services of dominant operators; recognise that call origination services, transit services and call termination services are likely to develop as different markets to which different rules apply;
- draw up where appropriate, Recommendations on access; in particular to consider in the short term a Recommendation to Member States on technical and economic aspects of local loop unbundling;
- extend the current standardisation framework for telecommunications to cover all communications infrastructure and associated services, i.e. to rely as far as possible on a voluntary approach to standardisation, but provide procedures to ensure open access and interoperability if voluntary processes do not succeed;
- Make carrier selection – but not carrier pre-selection - available to mobile users, by placing obligations on mobile operators with SMP.

4.3. Management of radio spectrum

This section should be read in conjunction with section 2.3 on the results of the consultation on the Spectrum Green Paper, and section 4.1. on Licensing and Authorisations. This section lists a number of unresolved issues which require further consideration.

Technological, market, policy and regulatory developments have revolutionised the use of radio spectrum, leading to increased demand for the resource and making it of ever-growing importance to the communications sector (as well as several other sectors) as a valuable economic resource. Since the availability of radio spectrum is limited, governments, being responsible for the distribution of the resource, should ensure that consumers and market players derive the maximum economic and social benefit from such a resource. This involves making difficult choices between competing demands for radio spectrum use, often between commercial and non-commercial users as well as between applicants wishing to provide similar services. As a consequence, new mechanisms, such as auctions and administrative pricing, are being introduced to supplement traditional administrative tools for distributing scarce resources efficiently. However, care is needed to ensure that the combination of administrative fees and special charges for certain players, such as mobile operators,

does not render their activities uneconomic. Naturally, authorities responsible for radio spectrum management will need to balance the needs of commercial and non-commercial uses of radio spectrum and apply appropriate rules accordingly.

4.3.1. Valuation of radio spectrum

The current framework allows for all approaches ranging from administrative pricing (i.e. administration driven valuation) to auctioning of radio spectrum licences (i.e. valuation by the highest bidder), so long as there is no distortion of competition. Although only some Member States have decided to introduce auction mechanisms, there seems to be a general recognition that spectrum valuation is a necessary step. Opposition to certain forms of spectrum pricing was put forward by some market players in the context of the consultation on the Spectrum Green Paper, but this position seems more related to the implementation of pricing mechanisms rather than to the approach itself.

There is not sufficient ground however to justify an unconditional obligation at EU level for radio spectrum pricing as a way to reflect economic value either for the whole radio spectrum, or for specific frequency bands. The consultation on the Radio Spectrum Green Paper revealed no consensus for a specific solution; it has in particular been argued that a pricing approach would not be appropriate with regard to spectrum used in non-commercial and public interest sectors where appropriate safeguards are necessary to ensure the continued availability of radio spectrum.

4.3.2. Charges and efficiency of radio spectrum use

The Licensing Directive allows administrations to request additional fees above those covering administrative costs where operators use radio frequency bands in which scarcity can be demonstrated. The objective would be to increase radio spectrum efficiency. On the basis of the public consultation, it is not possible to define efficiency in a single objective manner; it depends whether one looks at the issue from an economic, technical, or social point of view. In order to determine which radio spectrum assignment and licensing mechanism leads to the most efficient use of radio spectrum, it is necessary to investigate further what efficiency means in the context of the licensing framework.

It is also considered desirable that any fees charged by regulatory authorities should have an objectively demonstrable effect on the efficiency of radio spectrum use, rather than being used simply to fund public budgets.

4.3.3. Secondary trading of radio spectrum

Some Member States are favourable to the introduction of radio spectrum secondary trading, whereas others have not finalised their views on this matter. There was no consensus in the Radio Spectrum Green Paper public consultation on the possible benefits of secondary trading. Some commentators considered that secondary trading would fragment radio spectrum use at national, European and global level, cause harmful interference, and lead to higher prices. Others saw it as a means to make the usage of radio spectrum more flexible and to prevent hoarding of unused radio spectrum. Although it recognises the value of some of these arguments, and the need to take into account issues of general interest, e.g. non-commercial spectrum usage, the

Commission believes that the potential of secondary trading should be further explored. It believes that many concerns expressed against such a method (e.g. the potential for speculation or abuse of dominance) can be addressed by establishing appropriate safeguards. It will examine what safeguards might be necessary in the Community interest. It is intended to amend the Licensing Directive in order to allow – although not mandate – Member States to make provision for radio spectrum trading.

4.3.4. National vs. pan-European assignment and licensing

Providers of pan-European services, such as the satellite communications sector, stressed in response to the Radio Spectrum Green Paper that the introduction of new services at a pan-European level is hampered by diverging national assignment and licensing practices. The assignment of radio spectrum to pan-European operators at Community level does not benefit from the radio spectrum harmonisation efforts undertaken by Member States or initiated at Community level. It is essential to recognise the merits of pan-European licensing and possibly of radio spectrum assignment advocated by the satellite sector, and that further efforts are therefore required to facilitate the smooth introduction of such services which can instantaneously cover a large part of the Community territory. The changes proposed to the Licensing Directive outlined in section 4.1, together with the new institutional arrangements described in section 4.8, provide a legislative framework that would facilitate pan-European service provision by simplifying the situation over individual licensing or avoiding them altogether.

4.3.5. Commission position

Given the substantial and widely diverse competing demands for the use of the radio spectrum, not only for telecommunications but also for other uses such as transport, public security, broadcasting and R&D, the current methods of allocation and assignment face increasingly difficulties in reconciling supply and demand. Considering the importance of radio spectrum to the development of new and innovative services as part of a competitive European market for communications services, the Commission considers that:

- administrative pricing and auctioning of radio spectrum can be a means to ensure efficient use of the radio spectrum; however, clarification is needed as to the conditions of implementation, and the sectors in which such systems should or should not apply, so as to preserve other general interest principles while ensuring broadly comparable access to frequencies;
- Member States should be encouraged as far as possible to use revenue raised as a result of fees, auctions, and radio spectrum pricing to increase radio spectrum efficiency; consideration should be given to making revenues available for radio spectrum re-farming purposes;
- the current Licensing Directive should be amended in order to allow – although not mandate – Member States to make provision for radio spectrum secondary trading as part of a process to encourage the efficient use of radio spectrum. The

Commission will consider what safeguards might be necessary in the Community interest;

- dialogue with Member States should be continued on allocation and assignment issues, in particular for pan-European communications services, in the framework of any new institutional arrangements designed to address cross-sectoral radio spectrum issues (see Commission Communication on Next Steps in Radio Spectrum Policy - the results of the public consultation on the radio spectrum Green Paper).

4.4. Universal service

The current regulatory framework requires NRAs to place obligations on network operators to ensure that a defined minimum set of services of specified quality are available to all, independent of their geographical location, at an affordable price. Universal service as currently defined in Community legislation includes the provision of voice telephony, fax and voice band data transmission via modems (i.e. access to the Internet). Users must have access at a fixed location to international and national calls, as well as emergency services (via national numbers or the European emergency number - 112). The definition also covers the provision of operator assistance, directory services, public pay phones and special facilities for customers with disabilities or with special social needs⁵⁷.

The current framework recognises that in some countries the burden of universal service provision will be greater than in others. It therefore gives the NRA the option of establishing a universal service fund to which all operators contribute, to compensate the operator who is obliged to provide universal service (in practice the incumbent), where such provision imposes an “unfair burden”⁵⁸ on the universal service provider. Such funds may only be used in relation to those services that make up universal service as defined in Community legislation. Only one Member State currently has an operational universal service fund.

Member States are free to impose obligations outside the scope of universal service to provide further services at national level, but they cannot oblige market players to contribute to the provision of such services. Such provision may however be funded from other sources, in compliance with competition law, for example by using public tender procedures, which are cost effective and minimise the potential for distortion of competition.

Affordable access to all – a Commission priority

A major priority for the Commission is to ensure that all consumers have the opportunity to reap the benefits of the Information Society. This is essential to avoid the development of a “digital divide” between those who have access to new services, and are comfortable using them, and those who are excluded from fully enjoying their benefits.

⁵⁷ See Articles 2 and 3 of the Voice Telephony Directive

⁵⁸ Article 5(1) of the Interconnection Directive

For consumers to be able to participate in the Information Society, they need access to the necessary hardware and software, as well as an Internet connection. Community policy to maximise the benefits of the Information Society therefore has a number of strands. In particular, Community and national action has been undertaken to improve education and training in schools and universities so that users are able to take advantage of the technology which exists.

In the context of the new regulatory framework, there are a number of policy tools available to the Community in seeking to achieve this objective. The first is liberalisation itself. Liberalisation of the telecommunications sector has brought benefits to consumers in terms of more reliable, higher quality services at lower prices. This is an encouraging trend that demonstrates that competition is leading to a reduction in tariffs for communications services. The proposals in this Communication on licensing, access and interconnection, etc. should reinforce the development of competition, leading to even lower prices.

But it is clear that competition is not sufficient to achieve the Community's policy objectives. In an unregulated market, there would be consumers on low incomes, or who live in remote areas, who would not be served by operators, because they would be uneconomic. It is therefore essential that the new regulatory framework continues to ensure all are provided with those services considered essential for participation in society and already available to the great majority of citizens. This is the origin of the concept of universal service.

4.4.1. Scope of universal service

As an earlier Commission Communication⁵⁹ concluded, universal service is a dynamic and evolving concept. It is an important policy tool in seeking to guarantee public access to the Information Society, in combination with initiatives from the public sector, as well as public/private partnerships (of the sort undertaken to promote access to the Internet for schools).

This Communication provides an opportunity to review whether there is a need to extend the scope of universal service at European level. But the debate has focused largely on the extent to which broadband services, whether delivered over cable TV networks, satellite, or over traditional telecoms networks using ADSL technology, should be included in the scope of universal service.

New broadband networks are now being rolled out as commercial offerings. This creates opportunities for faster Internet access, making existing information society services more attractive, and could allow for new services requiring high bandwidth such as video on demand. The Commission welcomes these developments, and other proposals set out in this Communication, such as measures to encourage local loop unbundling, should help to increase the penetration of such services. The availability

⁵⁹ Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions: Universal service for telecommunications in the perspective of a fully liberalised environment - an essential element of the Information Society (COM(96) 73 final, 13.03.96)

of broadband services will be a key factor in ensuring that the EU can make the transition to the Information Society.

The debate is about whether such service should be mandated, and if so, whether they should be offered at a subsidised price as part of a universal service offering, to ensure affordability for all. The aim would be to reduce the risk of the emergence of a group of information 'have nots' in society.

It could be argued that there are several advantages in such an approach. It could help ensure that people were not excluded from the developing opportunities that high speed Internet access might offer (although in order to take advantage of such access, other resources are also necessary – a computer and high speed modem, software as well as appropriate training). These opportunities could include greater access to commercial services, the ability to work from home, greater ability to interact with social services, health and local government and opportunities to use a wide range of entertainment services. They also offer individuals enormous possibilities in terms of access to information and to learning opportunities.

More widely, the benefits to individuals listed above could feed through and provide a better informed, better-educated and more skilled workforce. They could also contribute to the development of a market for e-commerce and an environment in which e-commerce can thrive.

However, there are also arguments against including broadband services in the scope of universal service. The main argument relates to the financial impact that it would have on the majority of consumers.

Universal service relies on a cross-subsidy from one group of users to another. The current framework has ensured that a basic level of telephony is available to all, by obliging the universal service provider to ensure that consumers who would be counted as uneconomic (e.g. those on low incomes or who live in remote areas), have access to a basic set of telecommunications services at an affordable price. For basic telephony, such a cross-subsidy does not constitute an undue burden because the infrastructure already exists and most people already have a telephone. So the number of people that need to be cross-subsidised is quite small.

By contrast, only a small minority of consumers currently has access to broadband services. Including such services within the scope of universal service is likely to be problematic. The only means of doing so would be by subsidising broadband service provision for certain users via a cross-subsidy from consumers of basic telephony to higher bandwidth users. But to implement universal service in this way could have unfair consequences for telephone users on lower incomes. Including broadband Internet services within the scope of universal service at the present time would mean that the activities of the few (often wealthy "early adopters") would be subsidised by the rest of the population. In view of the costs of rolling out broadband networks, such a subsidy could add substantial amounts to all consumers' bills. Since the extra amount would not be based on ability to pay, it could be argued to constitute a regressive tax.

The costs involved in such provision would probably have to be funded via a universal service fund, as described above. The requirement to share these costs with the other

players in a market might actually raise barriers to entry for new operators. This could have the effect of reducing competition and consumer choice.

Furthermore, including broadband services in the scope of universal service at EU level could raise difficulties because of the fact that the technology is still comparatively young and untested on the market. This means public authorities will have to try to “pick winners” in terms of technology, and risk making the wrong choice.

The Commission’s Communication of 1996 identified key criteria for the extension of the scope of universal service: that any extension should combine a market-based analysis of demand for and availability of the service with a political assessment of its social and economic desirability. The Commission believes these criteria still hold true.

In the light of this principle, and on the basis of the above analysis, the Commission is not convinced that extending the scope of universal service to broadband services at this stage would be advisable. The Commission has not identified any services not currently covered by universal service, which yet meet the criteria it has identified for extending its scope. This does not in any way impede Member States from taking their own initiatives to finance the roll-out of broadband services through mechanisms other than universal service funding.

But the market is developing rapidly, and circumstances may change. New services may become available to a substantial majority of the population, with the consequent risk of social exclusion for those who cannot afford them, because of their economic or geographical situation.

The new framework would include the above criteria in legislation, on the basis of which the Commission would be obliged to undertake a periodic review (every two years) of the scope of universal service. The Commission would be required to consult all interested parties in the course of this review.

4.4.2. Financing of universal service

As has been mentioned above, the current framework allows NRAs to establish universal service funding schemes, financed by contributions from market players, to compensate the universal service provider where they consider such provision represents an unfair burden on that operator. Only one Member State (France) has an operational universal service funding mechanism, although several others have made provision for one in legislation.

In view of the regional variations among Member States in terms of the state of competition, average income and geographical features, the burden imposed on operators by the universal service obligation will vary from Member State to Member State. With the accession of new Member States, such disparities are likely to grow. And if the scope of universal service was to be extended, the burden on operators might be greater. For these reasons, it is proposed to continue to permit Member States to establish funding schemes as described above for universal service. Nevertheless, the Commission intends to keep this situation under review, and will

continue carefully to scrutinise the detail of such schemes to ensure that they are justified.

Current legislation also makes provision for “pay or play” schemes to be introduced. Under such schemes, other operators may reduce their contributions if they provide universal service in their area of operation. The Commission considers it unfortunate that such schemes have not been more seriously considered in more countries, though it recognises some of the difficulties in practically implementing such schemes where networks have already been rolled out to the majority of users. The Commission intends to maintain this provision and to encourage their use in cases (such as regions of the enlargement countries) where telephone coverage is still limited.

4.4.3. Affordability

The current rules require universal service to be available at an affordable price, but do not define affordability in quantitative terms. This is sensible given that affordability is a relative concept, largely dependent on national conditions. But it is proposed to set out clear principles at European level to ensure affordability of telephone services.

Member States have devised various means to fulfil the obligation to publish rules and criteria for ensuring affordability at national level⁶⁰. Most Member States operate some form of price control on services defined as part of universal service. Some require special schemes for particular categories of users (low income, disabilities), and require arrangements to facilitate payment and to allow better management and control of customer expenses, including the payment of bills. There also exist special provisions on disconnection for non-payment. Often these schemes are tailored to particular problems or consumer issues that have arisen in member states. Such schemes are working well in general and the Commission therefore sees no need to amend the framework, but will continue carefully to monitor developments, in particular to ensure that such schemes are targeted squarely at those disadvantaged groups for whom they are designed.

4.4.4. Commission position

The Commission recognises the importance of universal service in ensuring that all European citizens have access to the Information Society. In particular it proposes to:

- maintain at this stage the current definition and scope of universal service.
- given that it is a dynamic and evolving concept, put existing criteria for possible extension of its scope, as well as mechanisms for periodic review, in Community legislation;
- keep under review funding schemes and, in the context of funding schemes, encourage the development of mechanisms where “pay or play” is implemented;
- develop pricing principles at EU level in order to ensure the affordability of universal service.

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set out in Article 3 of the Voice Telephony Directive

4.5. The interests of users and consumers

The concept of universal service is one way in which the current framework has sought to protect consumers in society by ensuring they have access to those services deemed essential to avoid social exclusion. The current regulatory framework also contains a number of provisions which aim at protecting the interests of users and consumers in general⁶¹. In addition, there exist at EU level a number of horizontal consumer protection directives⁶² which apply to all sectors including the telecommunication sector.

Sector-specific legislation may be needed if there are particular user and consumer interests that are not covered by horizontal legislation. Universal service is one area where sector-specific legislation is anticipated, as explained in the previous section. Other areas are discussed below.

Consumer protection legislation is designed to protect all consumers, and so is applicable to all market players in a particular area. It is important to balance the need for consumer protection against the aim of not over-burdening companies with excessive regulation. This is particularly true in new and innovative markets, where SMEs play a key role. In many cases the best way to protect consumers is to ensure that they have choice and the means to make informed choices between competing services.

4.5.1. Personal data and privacy protection

The Telecoms Data Protection Directive applies the general principles established by the general data protection Directive to the telecommunications sector⁶³. It provides safeguards regarding security and confidentiality of communications services, the use of traffic data, privacy options related to calling line identification, publication of personal data in directories and unsolicited calls.

The terminology used in the Telecoms Data Protection Directive, which was proposed in 1990, is appropriate for traditional fixed telephony services but less so for new services which have now become available and affordable for a wide public. This creates ambiguities and has led in practice to divergence in national transposition of the Directive. To ensure a consistent application of data protection principles to public telecommunications services and network throughout the EU, the Commission proposes to update and clarify the Directive taking account of technological developments converging markets.

⁶¹ In particular the Voice Telephony, Telecoms Data Protection, Leased Lines and TV Standards Directives.

⁶² See http://europa.eu.int/comm/dg24/library/legislation/index_en.html for a list of relevant directives.

⁶³ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ L 281/31, 23.11.95)

4.5.2. *European emergency call number <112>*

Community legislation requires that users have free access to the European emergency call number <112>,⁶⁴ which operates in parallel with national emergency numbers. The 5th Implementation Report indicates that this facility is widely available, though less widely known, in the Member States, and remaining implementation problems are being addressed.

Technological developments now allow the geographical location not only of fixed but also of mobile phones to be determined. It is feasible and in the public interest to set a date by which all fixed and mobile operators provide caller location details to the emergency authorities when emergency calls are made. In view of the sensitivity of location data to the privacy of mobile callers, appropriate safeguards for personal data and privacy protection must be established to ensure compliance with EU rules in this area.

Given the importance of such a facility for the European citizen and the state of technological development, location information for emergency authorities should be made available by 1 January 2003. This would fit in with the timescale envisaged for implementation of the new regulatory framework.

4.5.3. *Complaint handling and dispute settlement*

Current directives contain various provisions for dispute settlement and conciliation. It is proposed that the new Framework Directive will address this issue in a general way by requiring Member States to ensure that simple and inexpensive complaint handling and dispute settlement procedures exist for users and consumers, other than via national courts. It would be for Member States to decide whether such arrangements were sector specific (e.g. involving the NRA) or generic (e.g. involving an ombudsman). The regulatory framework should ensure legal certainty for all concerned by combining a basic set of legislation that protects consumer rights with other measures, including "soft law" agreements.

In addition, consumers would have the right to approach the High Level Communications Group (see section 4.8.1) to resolve disputes with a cross-border dimension.

4.5.4. *Transparency of information including tariffs,*

The full benefits of a liberalised, competitive market can only be achieved if consumers are sufficiently well informed and act upon this information. Consumer behaviour is as instrumental to achieving a competitive market as competition law.

With the liberalisation of the market, telephone tariffs are no longer determined by one operator, prices for different types of calls are no longer obvious from the number

⁶⁴ See Council Decision 91/396/EEC of 29 July 1991 on the introduction of a single European emergency call number (OJ L 217/31, 06.08.91), and the Voice Telephony Directive.

dialled, and tariff changes - upward and downward - are frequent. Tariffs and contracts for mobile services have been of particular concern to consumers.

Transparency of consumer tariffs and the provision of itemised bills are a requirement under the existing voice telephony Directive. However in view of the difficulties consumers experience in working out the costs of the service they buy, these provisions need to be clarified in the new framework directive. The Commission is also considering whether it would be appropriate to require per call tariff information to be provided as a network service, in particular where such facilities have been standardised (for example in respect of GSM networks).

4.5.5. Service quality

The current regulatory framework gives Member States freedom to decide how quality of service should be regulated depending on the situation in their countries. The Voice Telephony Directive places binding obligations on fixed network operators with significant market power and/or universal service obligations to keep up-to-date information concerning their performance. It also foresees the possibility for Member States to publish the performance data, set performance targets and, if necessary, penalise operators that fail to meet the performance targets.

In a competitive environment, good quality services are more likely to be provided as a result of competition between suppliers than from regulation, and consumers may demand services of different quality at different prices (a current example being today's voice over IP services, which offer lower cost and lower quality). Greater emphasis needs to be placed on an obligation for service providers to inform their customers about the quality of service they are entitled to expect. Nevertheless, in respect of telephone services, whether carried on IP networks or traditional networks (and any other services that may be mandated at EU level as being within the scope of universal service), it is considered prudent to maintain some reserve powers for NRAs to take action in the event of market failure, particularly to deal with issues of end-to-end quality in a multi-network environment where no single operator has overall control.

Further details of the regulatory model under consideration are set out in a report⁶⁵ on the issue.

4.5.6. Recommended and mandatory services

In addition to the mandatory provision of services required in the context of universal service, provisions in the current framework either require or encourage particular services to be provided by incumbent operators. Such provisions can be phased out once users have adequate choice of suppliers, and competition becomes the effective means of meeting user needs.

The provision of leased lines is covered by a specific Directive⁶⁶ designed to guarantee the provision of a minimum set of leased lines (up to 2 Mbit/s) throughout the

⁶⁵ "Quality of voice telephony services and related consumer protection issues" (November 1999) <http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>

⁶⁶ Leased Lines Directive as amended by Commission Decision 98/80/EC of 7 January 1998 on amendment of Annex II to Council Directive 92/44/EEC (OJ L 14, 20.1.1998).

Community. Liberalisation of the leased lines market has yet to bring significant reductions in the price of leased lines, and various initiatives are being undertaken to remedy this⁶⁷. However, in the timescale of the review exercise, it is expected that the infrastructure being installed in the Community by new entrants will result in a competitive leased lines market, able to meet users' needs.

It is proposed to withdraw the current leased lines Directive once there is adequate choice of leased lines for all users and leased line prices are competitive. In the meantime, particularly in the light of current user concerns over leased line prices, the Commission will vigorously pursue any infringements of the current Directive.

Further detailed analysis of these issues is contained in various studies⁶⁸.

4.5.7. Commission position

Benefiting the European citizen is a primary goal of Community policy in the sector, and the Commission proposes to:

- to update and clarify the Telecoms Data Protection Directive to take account of technological developments and to ensure it is appropriate for a converging market;
- mandate enhancement of the European emergency call number 112 by requiring caller location to be provided to the emergency services, while taking account of the privacy issues linked to the disclosure of caller location to the emergency services;
- maintain and consolidate existing obligations with regard to complaint handling and dispute settlement procedures and quality of service; consider whether further measures are required;
- increase transparency of information, including of tariffs, for consumers (e.g. by introducing requirement for per-call tariff information for all users).
- require suppliers to publish information for their customers on quality of service, and maintain reserve powers for regulators to intervene on quality of service issues where problems arise in respect of services within the definition of universal service;
- withdraw the Leased Lines Directive 92/44/EC once there is adequate choice of leased lines for all users and leased line prices are competitive.

⁶⁷ Commission Recommendation on leased lines interconnection pricing in a liberalised telecommunications market (*to be adopted*).

⁶⁸ See reports on "Quality of voice telephony services and related consumer protection issues" (November 1999), "Tariff transparency in a multi-operator environment" (September 1999) and fixed mobile convergence (*ibid.*) (<http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>)

4.6. Numbering, naming and addressing

Current Community legislation identifies elements of a harmonised approach to numbering, naming and addressing, and stresses the importance of guaranteeing Europe-wide end to end interconnection of users and interoperability of services.⁶⁹ *Inter alia* it requires the adequate provision of numbers and addresses, and the supervision of numbering/addressing/naming plans by NRAs as well as seeking to ensure the co-ordination of European positions in international negotiations.

Names, numbers and addresses⁷⁰ are essential resources for the development of new services, and the above provisions form a firm starting point for consideration of the future regulatory environment.

4.6.1. *Convergence of communications infrastructure and associated services*

The various international numbering, naming and addressing schemes in use today have grown up in hitherto unconnected environments, and have separate administrative arrangements. Administration of telephone and packet-switched data network numbering is handled by the ITU at global level and by telecommunications regulators at national level. Addressing for Asynchronous Transfer Mode (ATM) broadband systems is based on International Standardisation Organisation (ISO) standards and is administered at national level by national standards bodies, with no central authority at global level. Naming and addressing in the Internet has been assigned to the Internet Corporation for Assigned Names and Numbers (ICANN) at a global level, acting within a framework of regional and national Internet registries.⁷¹

Internet development is continuing at a rapid pace, and much new network investment is directed towards IP based networks rather than traditional technologies, but observers continue to hold different views about the modalities of the transition from existing networks to IP based networks. During the transition, there is a need to ensure the inter-working of networks that use different naming/addressing/numbering schemes, in order to provide interoperability of services for users and ensure more effective handling of data traffic.

The Internet is a global network and the Commission considers that Internet naming and addressing issues are best dealt with by ICANN and the other global structures that reflect the global interests in Internet development. The Commission considers that any EU regulatory measures on this issue would be premature, but is concerned about the fragmentation of numbering, naming and addressing administration at global and national level, and proposes to keep the situation under review, *inter alia* in the context of the competition rules.

⁶⁹ See Annex I of the ONP Framework Directive

⁷⁰ Names, numbers and addresses can be personal data in the sense of Article 2(a) of the general Data Protection Directive (95/46/EC) and relevant data protection aspects have to be addressed.

⁷¹ Further information on Internet naming and addressing can be found in a forthcoming Commission Communication on the Internet (*not yet adopted*).

4.6.2. *Numbering, naming and addressing at EU level*

Despite ongoing work in the field of numbering in Europe since the early 1990s, there is relatively little harmonisation of numbering resources in the EU; the only examples being Community decisions on the harmonised emergency number (112) and the international access code (00). The Commission consulted in 1996 on numbering issues in general.⁷²

In the consultation process,⁷³ there was broad agreement on the establishment of a European Telephony Numbering Space (ETNS) on the basis of the '388' country code as soon as feasible after the formal allocation of this code by the International Telecommunications Union (ITU). A regional 'country code' for Europe would allow companies to benefit from geographically independent 'European' numbers irrespective of their physical location, and as such create a numbering space for true pan-European services⁷⁴. A decision by the ITU on permanent allocation of the access code '388' has been postponed until 2000. It will also be necessary to clarify the role of the European Conference of Posts and Telecommunications (CEPT) with regard to administration of regional geographic country codes (for example in respect of "388").

In 1996, the consensus was that a unified European numbering environment would require further study, and should be seen in a 10 to 20 year perspective. In view of the Internet developments referred to above, it becomes appropriate to explore how the Community objectives for an internal market in communications services, especially in respect of pan-European services, should be pursued in the wider context of numbering, naming and addressing. The Commission is reflecting on the case for a '.EU' top level domain name for Europe. In addition, the Commission sees the need for greater dialogue between the bodies involved in numbering, naming and addressing at global, European and national level. The debate on the creation of a unified numbering/naming/addressing environment for Europe that would overcome currently diverse numbering arrangements, should be driven by an appreciation of the full cost to the economy if Europe fails to achieve an environment as efficient as that of its global competitors.

4.6.3. *Number portability*

The current regulatory framework requires fixed operators to offer their subscribers operator number portability for geographic numbers and operator portability independent of location for non-geographic numbers. In the mobile sector, customers are more ready to switch suppliers than in the fixed network, as demonstrated by the high rate of 'churn' experienced by mobile operators. Nevertheless some Member

⁷² Green Paper on a Numbering Policy for Telecommunications Services in Europe (COM(1996) 590, 20.11.96).

⁷³ Communication to the European Parliament and the Council regarding the consultation on the Green Paper on a Numbering Policy for Telecommunications Services in Europe (COM(97)203, 21.05.97).

⁷⁴ The efforts by the Commission and ETO to set up an ETNS field trial and to obtain permanent allocation of '388' from the ITU have in practice not been supported wholeheartedly by all Member States. Moreover, some incumbent telecoms operators have queried the business case for an ETNS.

States are already implementing operator number portability for the subscribers of mobile operators, on the grounds that this benefits customers and increases the level of competition in the mobile sector. The emergence of combined fixed-mobile services, whereby a customer with fixed and mobile telephone service can have a single number for the reception of all calls, provides further grounds for requiring operator number portability to be extended to the mobile sector; without it such customers in a convergent environment could find themselves locked into the services of one supplier. The Commission considers that it would be in the user interest to make available operator number portability to mobile users.

The issue of operator number portability between fixed and mobile networks is more complex, in part because of the significant tariff differences for calls to fixed and mobile terminals. The issue of tariff transparency is a major consumer concern, and in the absence of information on the price of a call being available in advance, it is not clear that the imposition of operator number portability between fixed and mobile networks would bring clear-cut user benefits in the short term. The Commission is therefore not persuaded at this stage that it is appropriate to introduce a requirement for operator number portability between fixed and mobile networks.

Member States are now beginning to introduce centralised databases for number portability using intelligent network (I/N) solutions, and this will facilitate the introduction of features to improve tariff transparency and other new intelligent customer services. The Commission is concerned that insufficient steps are being taken to ensure these national databases are interoperable. At this stage, the Commission has not yet taken a position on whether the regulatory framework should mandate a requirement for interoperability in order to facilitate pan-European services. It would be the responsibility of the European Telecommunications Standards Institute (ETSI) to draw up the necessary standards.

4.6.4. Telephone numbering and competition

There is a strong need for national numbering plans to allow equal quantitative and qualitative access to numbering resources for all market players. This is a key requirement for non-discriminatory access to the liberalised telecommunications markets. The current regulatory framework requires Member States to ensure that there are sufficient numbers available to allow competition to develop, and the NRA, rather than the incumbent, is obliged to manage the national numbering plan. The Commission considers that these rules need to be strengthened in a number of specific areas:

- to confirm the rights of the NRA to withdraw the use of a number allocation where such changes clearly contribute to the efficient use of the number resource;
- to encourage co-ordination by NRAs on issues of European interests, e.g. the potential shortage of mobile network operator codes within the International Mobile Subscriber Identity (IMSI), in the light of the emergence of pan European services and mobile virtual network operators⁷⁵

⁷⁵ IMSI has only a 2 digit mobile network code, allocated at national level. See ITU-T Recommendation E.212.

- to require NRA supervision of allocation of point codes⁷⁶ in signalling system no.7 at the national level, in order to facilitate the provision of cross-border services, and NRA supervision of access codes for corporate networks making use of the public resources. In some Member States, control over some of these resources lies still with the incumbent operator.

4.6.5. Commission position

The Commission proposes:

- not to pursue specific regulatory measures, at this stage, with respect to Internet naming and addressing, but to keep the situation under review;
- to encourage greater dialogue between the bodies involved in numbering, naming and addressing at European and Member State level and ensure co-ordination of European positions in international bodies;
- to extend the availability of operator number portability to mobile users, but not at this stage to require operator number portability between fixed and mobile networks;
- to consider mandating interoperability of national Intelligent Network (I/N) databases in order to facilitate pan European service provision;
- to strengthen the current framework with regard to numbering by (i) confirming the rights of an NRA to withdraw the use of a number allocation where such changes clearly contribute to the efficient use of the numbering resource, (ii) to encourage co-ordination of NRAs on issues of European interests and (iii) to require NRA supervision of allocation of point codes in signalling system No.7 and access codes for corporate networks.

4.7. Specific competition issues

The communications market is still dominated by incumbent vertically integrated market players who still have massive market share in their national market, and who seek to leverage that market power into related markets. Nevertheless, specific markets in the communications sector are seeing vastly increased levels of competition, such as in the mobile markets, and new entrants to the market are making inroads into the market share of incumbent operators in all market segments, to a greater or lesser extent. The task for the Commission, the national competition authorities and NRAs is to ensure that the trend towards effective competition continues.

⁷⁶ Point codes are used in signalling system no.7 to identify nodes in a switched network. Control of point codes by the incumbent can hinder cross border interconnection.

Sector-specific rules, in conjunction with the application of competition rules, facilitate market entry where the incumbent operators continue to have strong positions and control access to the majority of subscribers, and serve to ensure that new entrants can compete effectively. The aim is to create a regulatory regime which can be rolled back as competition strengthens, with the ultimate objective of controlling market power through the application of Community competition law.

The key issue therefore is to strike the right balance between sector-specific regulation and the competition rules. In particular, as discussed in section 4.7.2, it will be appropriate for sector-specific regulation to make more use of competition law concepts like dominant position found in Article 82 of the Treaty.

4.7.1. *Essential facilities.*

The communications market is a network industry, and although increasingly characterised by competition, the incumbent operators tend to control infrastructure, access to which by new entrants ranges from being desirable to essential.

The Essential Facilities doctrine⁷⁷ relates to the situation where a company has a dominant position in the provision of facilities which are essential for other firms to supply goods or services and where those facilities cannot be replicated in an economically efficient manner. While in most Member States, alternative infrastructure exists which provides competition for the local loops of incumbent operators, in the absence of such alternative infrastructures, the incumbent's local loop can also be considered as an essential facility. Conversely, if costs for customers to change digital television decoders are not prohibitive, these should not in principle be considered an essential facility.

The essential facilities concept has proved useful in dealing with access to the facilities of a company in a dominant market position. In future, in the local access network, it may become the case that no single company has a dominant position, but there may still be insufficient competition because only a limited number of players will have customer access networks. In these circumstances the concept of significant market power will continue to be valuable in addressing access issues; the conditions to be taken into account when determining whether a company has significant market power includes its 'control over the means of access to end users'.⁷⁸ (See section 4.7.2 below.)

Over time, the extent of any regulatory obligation could be reduced as a function of the extent to which the facility deemed to be essential could be reproduced in an economically efficient way.

⁷⁷ According to this doctrine, a company which has a dominant position in the provision of facilities which are essential for the supply of goods or services on another market abuses its position where, without objective justification, it refuses access to those facilities. ECJ Case C-7/97, *Oscar Bronner GmbH & Co. KG*. Opinion of Advocate General Jacobs, Paragraph 34

⁷⁸ Article 4(3) of the Interconnection Directive.

4.7.2. *Dominant position and Significant Market Power*

In the early stages of competition, access by new entrants to the incumbent's network is an essential pre-requisite for sustainable competition, and the concept of Significant Market Power (SMP) is currently used as the trigger for application of specific obligations. Operators with more than 25% market share in specified markets (i.e. fixed telephony, mobile telephony, and leased lines) are presumed to have SMP, but NRAs have discretion to take other factors into consideration and to deviate from a simple 25% market share threshold.⁷⁹

Studies undertaken for the Commission, drawing on experience with the current regime, suggest that a more appropriate trigger for certain *ex ante* obligations would be the competition law concept of 'dominant position'. A complementary measure would be to remove from specific directives the definition of the relevant market on which market power is assessed, in order to ensure that the regulatory framework is technologically independent. In principle, the Commission favours the use of the concept of dominant position in particular markets, calculated in a manner consistent with competition law practice, as a trigger for the heavier *ex ante* obligations (e.g. obligations to supply unbundled, cost orientated, interconnection services; obligations concerning non-discrimination), while foreseeing a need to retain the current threshold of significant market power for other obligations (e.g. obligations to negotiate access, as discussed in section 4.2.1 above; obligations for transparency). The factors to be taken into account by NRAs when assessing significant market power will be adapted to include an organisation's ability to act as a gatekeeper, with control of access to services.

NRAs would draw up the list of organisations with a dominant position or significant market power for the purposes of implementing the *ex ante* obligations in specific legislation. Determinations of the relevant markets, and of the positions of market players on those markets, would be carried out by NRAs on a regular basis, perhaps once per year, using similar methodologies as used under competition law. Such assessment by NRAs should take place in close co-ordination with the national competition authority. Guidelines at European level would be necessary to facilitate correct application of the competition law principles, and to avoid having different market definitions in different Member States, which would have a negative impact on the internal market. The list of organisations with a dominant position drawn up by NRAs would be specifically for the purposes of implementing *ex ante* legislation and would not be exhaustive; under competition law, other firms may be found to have dominant positions in certain markets.

Co-ordination of NRA application of the triggers associated with dominant position and significant market power would be essential, and could be achieved through the proposed institutional arrangements set out in section 4.8.

⁷⁹ These factors are currently: the organisation's ability to influence the market conditions, its turnover relative to the size of the market, its control of the means of access to end-users, its access to financial resources, and its experience in providing products and services in the market. In some cases, an organisation's international links may also be relevant.

The use of two triggers gives NRAs the means to apply the least burdensome regulation to market players, proportionate to the level of competition in particular markets.

One implication of these proposed changes for mobile operators that have been notified as having SMP in the mobile market is that they would in future cease to have obligations for non-discrimination (assuming that they were not in a dominant position). They would instead have new obligations to negotiate with firms requesting access to their networks, with the possibility of regulatory intervention as described in section 4.2.1.

4.7.3. Commission position

The Commission proposes to:

- Use the competition law concept of dominant position as the more appropriate trigger for certain sector-specific obligations, in particular cost-orientation and non-discrimination, while maintaining the lower threshold of significant market power for other obligations, e.g. obligations to negotiate access, transparency.

4.8. Institutional issues

Section 2.5 concludes that, based on the studies on the added value of a European level regulator, improvement of existing institutional arrangements at the EU level will be more effective than setting up a completely new European regulatory institution.

Nevertheless, it is recognised that the regulatory model outlined in this Communication, which implies increased delegation of decision-making to NRAs, requires a counterbalance in the form of greater co-ordination of NRA decisions and positions at EU level. Such co-ordination should in the first instance rely on consensus building processes among European regulators in which all interested parties are able to state their views. Ultimately however, such consensus building will only be truly effective if it is backed up by the possibility to give decisions legal force.

Existing procedures for co-operation with CEPT/ECTRA have not worked satisfactorily. Almost without exception, the deliverables supposed to result from this co-operation have not materialised (the most important example of this being the failure to agree on a one-stop shopping procedure in the field of licensing). This strengthens the conclusion that new institutional arrangements are necessary.

4.8.1. Proposed new Institutional arrangements

Consequently the Commission proposes that, building on institutional arrangements that already exist in the Community (for example in the area of data protection⁸⁰), an efficient arrangement would entail a two-part structure, comprising a formal committee, composed of the Commission and Member States, working under the new comitology arrangements agreed by the EP, Council and Commission⁸¹ – the Communications Committee (COCOM) and a High Level Communications Group (HLCG), composed of National Regulatory Authorities and the Commission.

The **Communications Committee (COCOM)**, would replace existing committees (the ONP committee, the Licensing committee). The new committee would have an advisory role and a regulatory role,⁸² which would be defined in the relevant directives, and would be able to deal with all issues covered by the new regulatory framework, including licensing, spectrum, access and interconnection.

In its advisory capacity, the Committee could be invited to give an opinion to the Commission services on draft measures of a non-binding nature related to communications infrastructure and associated services. Such measures would be proposed by the Commission services for example following requests from the High Level Communications Group or from the proposed Radio Spectrum Policy Expert Group. Examples of such measures would include Commission Recommendations (e.g. on specific types of access or interconnection), mandates to CEPT in areas such as spectrum allocation for communications services and mandates to ETSI on standards.

In its regulatory capacity, the Committee would vote on draft measures of a binding nature related to communications infrastructure and associated services. Such measures would be proposed by the Commission services (for example building on initiatives of the High Level Communications Group or of the proposed Radio Spectrum Policy Expert Group). Examples of such measures would include Commission Decisions to require certain actions to be undertaken, e.g. to ensure harmonised application of Community legislation in a specific area, or to ensure full implementation in all Member States of deliverables prepared by CEPT.

The **High Level Communications Group (HLCG)** would be composed of the Commission and the National Regulatory Authorities of the Member States. It would take over from the current High Level Regulators group,⁸³ building on its experience.

⁸⁰ Committee and Working Party established by the General Data Protection Directive; it should be noted that the proposals set out here are similar but not identical to those established in the field of data protection.

⁸¹ Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission (OJ L 184, 17.07.99 “the Comitology Decision”)

⁸² With reference to the procedures laid down in the Comitology Decision, any meeting of the committee would conform to either the advisory procedure in Article 3, or the regulatory procedure in Article 5.

⁸³ Ad hoc group of national administrations and regulatory authorities established by the Council Resolution of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market (OJ C 213/01, 06.08.93)

It would be formally established in Community legislation. The rules for this group would be set out in the Framework Directive. The Group could be chaired by a representative of a Member State national regulatory authority, with the Commission acting as secretariat.

The Group would co-operate intensively with bodies at European level (e.g. consumer bodies like the Consumer Committee, standards bodies like ETSI, Sectoral Social Dialogue Committees, Industry Round Tables and Industry representative bodies like the European Telecommunications Platform (ETP), the Digital Video Broadcasting group (DVB) etc). In some cases these other bodies could be called upon to play a role in the preparation of complementary measures like codes of practice to be submitted to the Group for endorsement. It would also liaise with relevant advisory groups within the Community institutions. It could be required to produce an annual report of its activities to European Parliament and the Council, which would be publicly available.

The HLCG would concentrate on assisting the Commission in maximising uniform application of national measures adopted under the regulatory framework laid down in Community legislation. Its activities could include:

- adopting agreed NRA positions on the detailed application of Community legislation, with a view to facilitating pan-European services;
- using their expertise to assist in the drawing up of EU guidelines on market definitions with respect to obligations relating to interconnection and access (see section 4.7.2);
- endorsing codes of practice, for use in Member States, on issues related to the application of Community legislation. Such codes of practice could be drawn up by the High Level Communications Group or by other interested parties;
- resolving disputes between consumers and operators where there is a cross-border dimension, building upon the procedures already established at national level and at EU level for co-ordination of NRA actions⁸⁴;
- monitoring and publicising the activities of NRAs throughout the Community, in particular national consultations on specific regulatory issues and subsequent NRA decisions;
- considering problems brought to its attention by Member States, NRAs, market players, or users and proposing solutions where appropriate;
- suggesting the need for Commission measures (e.g. Recommendations or Decisions) to address specific issues.

In relation to radio spectrum, the Commission is considering a new EU level advisory body - the **Radio Spectrum Policy Expert Group** - to deal with radio spectrum issues across all radio spectrum user communities, e.g. telecommunications, broadcasting, transport, R&D, etc. This would allow for the necessary political input

⁸⁴ See Article 26 of Voice Telephony Directive and Article 17 of Interconnection Directive.

to be given to the spectrum management activities of CEPT and the Member States and to ensure the proper co-operation with international bodies like the World Radiocommunications Conference (WRC) of the International Telecommunications Union (ITU) where the allocation and use of radio spectrum is discussed at global level. This new body would exist alongside and complement the work of the proposed High Level Communications Group. More detail on the operation of this body can be found in the Communication on the results of the consultation on the radio spectrum Green Paper.

Enforcing correct implementation of Community legislation remains a Commission responsibility, and would not be affected by the above arrangements.

4.8.2. National regulatory authorities (NRAs)

The role of NRAs is crucial to the operation of the current framework. It is essential that they are properly resourced, truly independent, and seek actively to open their national markets to competition and innovation. In the new regulatory regime, their role will if anything be even more important. Since the rules at EU level will be more general than at present, there will be a need for mechanisms to ensure that NRAs apply the objectives and principles set out in the directives in a way which safeguards the integrity of the internal market.

Community legislation recognises that the functions of a national regulatory authority may be undertaken by more than one body, and in most Member States these functions are shared between the independent national regulator and the relevant Ministry, and in some cases a separate body for spectrum aspects.

The Commission continues to have a number of concerns with regard to the effectiveness of some of these arrangements, and will strengthen existing legal provisions to ensure that:

- the independent national regulator can undertake its role of supervision of the market free from political interference, without prejudice to the government's responsibility for national policy;
- allocation of NRA responsibilities to different bodies does not lead to delays and duplication of decision making;
- where sector-specific regulators and national competition authorities are both involved in issues related to communications infrastructure and associated services, there is effective co-operation between the two bodies and that NRAs ensure that their decisions are compatible with Community competition law;
- the decision-making procedures at national level are transparent.

4.8.3. Commission position

The Commission recognises the need for a clear regulatory function to be exercised at the level of the Union whilst ensuring that the framework is implemented close to the market in Member States. The Commission proposes to:

- replace the existing two telecommunications committees with a new Communications Committee, drawing on the expertise of a new High Level Communications Group involving the Commission and NRAs to help improve the consistent application of Community legislation;
- review existing legal provisions with a view to (i) strengthening the independence of NRAs, (ii) ensuring that the allocation of responsibilities between institutions at national level does not lead to delays and duplications of decision making (iii) improving co-operation between sector specific and general competition authorities and (iv) requiring transparency of decision making procedures at a national level.

5. CONSOLIDATED LIST OF COMMISSION POSITIONS

A full list of the positions set out in the Communication is set out below.

Licensing and Authorisation

- Use *general authorisations* as the basis for licensing communications networks and services, with *specific authorisations* reserved for assignment of radio spectrum and numbers;
- apply a comprehensive and coherent policy framework to communications infrastructures, including broadcast networks, with appropriate transitional measures where necessary;
- restrict range of possible conditions which can be attached to authorisations; establish procedures to agree on categories of authorisations at EU level;
- ensure fees for authorisations cover only justified and relevant administrative costs, and draw up EU level guidelines to promote best practice and transparency;
- continue to authorise communications services using the Internet in an equivalent manner to other communications services.

Access and Interconnection

- maintain specific Community measures which govern both access and interconnection, building on the principles set out in the Interconnection Directive and the TV standards Directive;
- in the case of access to network infrastructures, place responsibility on NRAs in Member States to deal with specific access issues, including resale of services, according to a set of conditions and criteria laid down in Community legislation; require infrastructure owners with significant market power to negotiate, on commercial terms, in respect of requests for access; require dominant infrastructure owners to meet reasonable requests for access; maintain the possibility of NRA intervention to resolve disputes;
- in the case of interconnection, maintain the requirement for cost orientated interconnection in directives (hard law) but interpret this concept through Commission recommendations; maintain the Recommendation to use LRAIC for pricing call termination services of dominant operators; recognise that call origination services, transit services and call termination services are likely to develop as different markets to which different rules apply;
- draw up where appropriate, Recommendations on access; in particular to consider in the short term a Recommendation to Member States on technical and economic aspects of local loop unbundling;
- extend the current standardisation framework for telecommunications to cover all communications infrastructure and associated services, i.e. to rely as far as possible on a voluntary approach to standardisation, but provide procedures to ensure open access and interoperability if voluntary processes do not succeed;
- Make carrier selection – but not carrier pre-selection - available to mobile users, by placing obligations on mobile operators with SMP.

Management of radio spectrum

- administrative pricing and auctioning of radio spectrum can be a means to ensure efficient use of the radio spectrum; however, clarification is needed as to the conditions of implementation, and the sectors in which such system should or should not apply, so as to preserve other general interest principles while ensuring broadly comparable access to frequencies;
- Member States should be encouraged as far as possible to use revenue raised as a result of fees, auctions, and radio spectrum pricing to increase radio spectrum efficiency; consideration should be given to making revenues available for radio spectrum re-farming purposes;
- the current Licensing Directive should be amended in order to allow – although not mandate – Member States to make provision for radio spectrum secondary trading as part of a process to encourage the efficient use of radio spectrum. The Commission will consider what safeguards might be necessary in the Community interest;
- continue dialogue with Member States on allocation and assignment issues, in particular for pan-European communications services, in the framework of any new institutional arrangements designed to address cross-sectoral radio spectrum issues.

Universal service

- maintain at this stage the current definition and scope of universal service.
- given that it is a dynamic and evolving concept, put existing criteria for possible extension of its scope, as well as mechanisms for periodic review, in Community legislation;
- keep under review funding schemes and, in the context of funding schemes, encourage the development of mechanisms where “pay or play” is implemented;
- develop pricing principles at EU level in order to ensure the affordability of universal service.

The interests of users and consumers

- update and clarify the Telecoms Data Protection Directive to take account of technological developments and to ensure it is appropriate for a converging market;
- mandate enhancement of the European emergency call number 112 by requiring caller location to be provided to the emergency services, while taking account of the privacy issues linked to the disclosure of caller location to the emergency services;
- maintain and consolidate existing obligations with regard to complaint handling and dispute settlement procedures and quality of service; consider whether further measures are required;

- increase transparency of information, including of tariffs, for consumers (e.g. by introducing requirement for per-call tariff information for all users).
- require suppliers to publish information for their customers on quality of service, and maintain reserve powers for regulators to intervene on quality of service issues where problems arise in respect of services within the definition of universal service;
- withdraw the Leased Lines Directive 92/44/EC once there is adequate choice of leased lines for all users and leased line prices are competitive.

Numbering, naming and addressing

- not to pursue specific regulatory measures, at this stage, with respect to Internet naming and addressing, but to keep the situation under review;
- encourage greater dialogue between the bodies involved in numbering, naming and addressing at European and Member State level and ensure co-ordination of European positions in international bodies;
- extend the availability of operator number portability to mobile users, but not at this stage to require operator number portability between fixed and mobile networks;
- consider mandating interoperability of national IN databases in order to facilitate pan European service provision;
- strengthen the current framework with regard to numbering by (i) confirming the rights of an NRA to withdraw the use of a number allocation where such changes clearly contribute to the efficient use of the numbering resource, (ii) to encourage co-ordination of NRAs on issues of European interests and (iii) to require NRA supervision of allocation of point codes in signalling system No.7 and access codes for corporate networks.

Specific competition issues

- use the competition law concept of dominant position as the more appropriate trigger for certain sector-specific obligations, in particular cost-orientation and non-discrimination, while maintaining the lower threshold of significant market power for other obligations, e.g. obligations to negotiate access, transparency.

Institutional issues

- replace the existing two telecommunications committees with a new Communications Committee, which would draw on the expertise of a new High Level Communications Group involving the Commission and NRAs to help improve the consistent application of Community legislation;
- review existing legal provisions with a view to (i) strengthening the independence of NRAs, (ii) ensuring that the allocation of responsibilities between institutions at national level does not lead to delays and duplications of decision making (iii) improving co-operation between sector specific and general competition authorities and (iv) requiring transparency of decision making procedures at a national level.

ANNEX I - LIST OF CURRENT STUDIES LINKED TO THE 1999 REVIEW

TITLE	DELIVERABLES
Consumer demand for telecommunications services and the implications of the convergence of fixed and mobile networks for the regulatory framework for a liberalised EU market	Interim Report and Public Workshop: 30.6.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/fmc.pdf); Final Report: November 1999
Assessment of the situation of interconnection in telecommunications in the European Union and the need to review the ONP Interconnection Directive 97/33/EC	Final Report: October 1999 (www.ispo.cec.be/infosoc/telecompolicy/en/ICrev.pdf);
Quality of voice telephony services and related consumer protection issues	Final Report: November 1999 (draft guidelines/recommendations at www.ispo.cec.be/infosoc/telecompolicy/en/QoS-RECOMfinal.pdf)
Assessment of the situation of leased lines in the European Union and the consequences on adaptation of the ONP leased lines Directive	Final Report: December 1999
Submarine cable landing rights in Member States and existing practices for provision of transmission capacity on international routes, including terrestrial circuits, submarine cables and satellite links	Final Report & Workshop: 15.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/subcables.pdf)
Study on the possible added value of a European Regulatory Authority for telecommunications	Final Report & Workshop: 14.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/erastudy.pdf)
Study on tariff transparency in a multi-operator environment	Final Report & Workshop: 14.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/V2study.pdf)
Study on categories of authorisations	2 nd Interim Report & Workshop: 20.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/Categ.pdf) Final Report: November 1999

Study on Information required for verification	2 nd Interim Report & Workshop: 20.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/verif.pdf) Final Report: November 1999
Study on Fees for Licensing Telecommunications Services and Networks	2 nd Interim Report & Workshop: 20.9.1999 (www.ispo.cec.be/infosoc/telecompolicy/en/fees.zip) Final Report: November 1999
Study on the re-examination of the scope of universal service in the telecommunications sector of the European Union, in the context of the 1999 Review	Final Report: December 1999
Study to provide full tariff and pricing details of main EU telecommunications services during period 1998-2000	First Report: April 1999 (www.ispo.cec.be/infosoc/telecompolicy/en/1jan98.pdf) Second Report: July 1999 (www.ispo.cec.be/infosoc/telecompolicy/en/1jan99.pdf), Third Report: in 2000
Study on allocation of costs regarding number portability and carrier selection/pre-selection	Final Report: December 1999
Study on the development of new telecommunications services, in particular those exploiting Internet, and their impact on the European Union regulatory and policy framework for telecommunications	Final Report: December 1999
Study on the preparation of an adaptable bottom-up costing model for interconnection and access pricing in European Union countries	Final Report: December 1999
Survey study on the situation of telecommunications services (including the scope of universal service) in the regions of the European Union	Final Report: December 1999

ANNEX II - LIST OF ABBREVIATIONS

ADSL	Asymmetric Digital Subscriber Line
API	Application Program Interface
ATM	Asynchronous Transfer Mode
BEUC	Bureau Européen des Unions de Consommateurs
CEPT	Conférence Européenne des administrations des Postes et des
DTTV	Digital Terrestrial TeleVision
DTV	Digital TeleVision
DVB	Digital Video Broadcasting group
ECTRA	European Committee of Telecommunications Regulatory Affairs
EPG	Electronic Programme Guide
ETNS	European Telephony Numbering Space
ETO	European Telecommunications Office
ETP	European Telecommunications Platform
ETSI	European Telecommunications Standards Institute
GATS	General Agreement on Trade in Services
ICANN	Internet Corporation for Assigned Names and Numbers
IMSI	International Mobile Subscriber Identity
IN	Intelligent Network
IP	Internet Protocol
IRG	Independent Regulators Group
ISO	International Organisation for Standardisation
ISPO	Information Society Promotion Office
ITU	International Telecommunications Union
LRAIC	Long Run Average Incremental Cost
MUX	Multiplex
MVNO	Mobile Virtual Network Operator
NRA	National Regulatory Authority
ONP	Open Network Provision
SME	Small and Medium sized Enterprise
SMP	Significant Market Power
WRC	World Radiocommunications Conference
WTO	World Trade Organisation
XDSL	generic description of different Digital Subscriber Line systems (See also ADSL)

ANNEX III - GLOSSARY

Access codes for corporate networks	Codes that are used to route calls between public and private (corporate) networks
Application Program Interface (API)	API is a programmatic interface used for inter program communications or for interfacing between protocol layers.
Asymmetric Digital Subscriber Line (ADSL)	A type of Digital Subscriber Line System used to provide high speed Internet access on ordinary phone lines (copper pairs). ADSL provides speeds up to 8 Mbps downstream (to the user) and up to 1 Mbps upstream, depending upon line length and conditions.
Asynchronous Transfer Mode (ATM)	Broadband transmission technology which provides the backbone of the world's telecommunications network. ATM breaks information flows into small fixed-length cells of 53 bytes. Cells of any type of traffic - voice, multimedia, data or video - can be interspersed with each other. ATM operates at speeds of 25, 155 and 622 Mbps.
Broadband	A term applied to high speed telecommunications systems, eg those capable of simultaneously supporting multiple information formats such as voice, high-speed data services and video services on demand.
Cable landing right	Cable landing rights refer to the rules that apply to landing a submarine cable in a country.
Caller location	Caller location indicates the geographical location of the calling party.
Calling line identification	Calling Line Identification (CLI) is the sending of the calling party's telephone number to the called party.
Call origination	An interconnection service provided by one network operator to another, for connecting outgoing calls from the calling party, e.g. in the context of carrier selection or pre-selection, whereby a new entrant is able to take over the customer relationship for specific types of outgoing call.
Call termination	An interconnection service provided by one network operator to another for connecting incoming calls to the called party. Call termination is essential to allow any-to-any calling in a multi-network environment.
Call transit	An interconnection service, often provided in association with call termination, for the conveyance of calls across a network
Carrier selection	Facility where customers can choose an alternative supplier (e.g. a long-distance or international carrier) through dialling a short code, on a call by call basis. (Also called indirect access.)
Carrier pre-selection	Facility where the customer chooses in advance (pre-selects) an alternative supplier to carry all calls of a particular type. Different carriers may be pre-selected for different categories of call, eg local, long distance, international, calls to mobile. The customer's choice is pre-programmed by the local network operator so that the customer does not have to dial a special carrier selection code for every call.
Consumer	Any natural person who uses a communications service for purposes which are outside his or her trade, business or profession
Decoder	Device intended to transform an encoded signal into one suitable for input to typical terminal equipment (e.g. digital TV decoder, also known as set-top box)

Digital Video Broadcasting (DVB) Group	Digital Video Broadcasting Project, the industrial forum that established the specifications of the system now used for broadcasting digital TV and certain other digital services within the EU and elsewhere, which have been adopted as European telecommunications standards
DVB IRDs	Integrated Receiver-Decoder, also known as 'set-top box'; the indoor part of the equipment needed to enable existing analogue TV sets to be used to receive digital TV and access certain other digital broadcast services
DVB Service Information (DVB-SI)	In the broadcast multiplex, DVB-SI provides information identifying and describing the various individual services available, in machine-readable form, so that DVB IRDs can group them into the appropriate categories with relevant schedule information, thus enabling the user to select one or more of them as and when required.
Electronic Programme Guides (EPG)	On-screen real-time catalogue of current and forthcoming contents of broadcast services available from a particular ensemble of channels.
European Telephony Numbering Space (ETNS)	A numbering space created via a European country code that sits in parallel with the national numbering spaces. The ITU has on a temporary basis assigned the country code '388' to the EU, and will decide on permanent allocation in 2000. Numbers from the ETNS would be available anywhere in the European Union. When implemented, a services numbered from the ETNS could be accessed by a single pan-European number from anywhere in the EU.
Forbearance	Action whereby an NRA refrains from placing new obligations on market players, in accordance with pre-defined criteria, so long as the objectives being sought are already met.
Fully allocated historic cost	An accounting approach under which all costs that incurred in the production of activities are allocated across those activities. Fully allocated costs will include a share of fixed costs which may be common or shared across different services - for example, between access and conveyance
Geographic number	A number from the national numbering plan where part of its digit structure contains geographic significance used for routing calls to the physical location of the network termination point of the subscriber to whom the number has been assigned
Group of High Level Regulators	An ad hoc group established in 1993 which is composed of the high level representatives of the Member States and the Commission. Set up under Resolution 93/C213 of 22 July 1993.
High speed bit-stream service	A service provided by an incumbent operator whereby a new entrant rents a high-speed access path to the customer. The incumbent provides and maintains the transmission systems (e.g. ADSL modem at the local exchange) needed to provide the access path.
Intelligent Network (IN)	A telephone network architecture where the switching and service functions are separated. This adds great flexibility to the design of telephone networks by allowing services to be added or changed without having to redesign switching equipment.
International Mobile Subscriber Identity (IMSI)	The IMSI is a string of decimal digits, up to a maximum of 15 digits, that identifies a unique mobile terminal or mobile subscriber internationally. IMSI is required so that a visited network can identify a roaming mobile terminal or mobile user, e.g. in order to query a subscriber's home network for subscription and billing information.
Licensing committee	A committee with advisory and regulatory roles composed of the representatives of the Member States and chaired by the representative of the Commission. Set up by the Licensing Directive 97/13/EC.
Local access network	The network linking users to the local (telephone) exchange.
Local loop	The subscriber line (i.e. the twisted copper pairs) between the main distribution frame (usually situated at the local telephone exchange) and the equipment at the customers' premises.

Long Run Average Incremental Cost (LRAIC)	The additional costs that would be incurred in providing a service compared to the costs in the absence of that service. If economies of scope with other services are ignored, it is an average cost equivalent to that faced by a new entrant to a market. Since it treats capacity as variable, it is implicitly a long-run concept.
Mobile network operator code	A 2 digit code allocated at national level within the IMSI (see definition).
Mobile Virtual Network Operator (MVNO)	MVNO is an mobile operator, which does not have a licence to use radio spectrum, but has access to the radio infrastructure of one or more mobile operators and is able to offer services to customers using that infrastructure and its own network.
Multiplex	A group of separate services within a single bitstream.
Must-carry rules	Regulatory provisions determining which broadcast services must be delivered through a particular distribution network.
Narrowband	A term applied to telecommunications facilities capable of carrying only voice, facsimile images, slow-scan video images and data transmissions at kilobit speeds. Narrowband facilities, unlike broadband facilities, cannot handle full-colour, full-motion video images or data transmissions at megabit speeds.
Non-geographic number	Number from (national) number ranges that are not identified with one specific geographic region, city area or local community. A country wide freephone number is example of a non-geographic number.
Number portability	Operator number portability is the possibility to transfer a telephone number from one operator to the other. Operator number portability allows customers to retain their telephone number when they decide to change operator and removes an important barrier to competition.
ONP Committee	A committee with advisory and regulatory roles composed of the representatives of the Member States and chaired by the representative of the Commission. The ONP Committee is set up under the ONP Framework Directive 90/387/EEC.
Open Network Provision (ONP)	The Open Network Provision is concept defined in the ONP Framework Directive 90/387/EEC and concerns the harmonisation of conditions for open and efficient access to and use of public telecommunications networks and services.
Point code	Point codes are used in signalling system no. 7 to identify nodes in a switched network.
Retail minus	Refers to retail price minus a percentage which is deemed to be the mark-up from wholesale to retail prices.
Right of way	Right of way refers to the right to lay infrastructure on land owned by others.
Set-top box	Adapter intended to enable TV sets suitable for only existing analogue (e.g. PAL) signals to receive digital broadcasts also (possibly in connection with an external dish antenna etc.).
Signalling system no 7	Signalling System 7 is a signalling system for intra-network and inter-network signalling defined by ITU.
Wave division multiplexing	Wave Division Multiplexing is the technique of passing multiple frequencies (wavelengths or colours) of light simultaneously across a single fibre, thereby increasing the capacity of installed fibre infrastructure.