The EU Regulatory Framework in Telecommunications -A Critical Analysis

Thomas Kiessling Global One 11, rue des Colonies 1000 Brussels Belgium Tel. +32 2 545 2289 Fax. +32 2 545 2055

Yves Blondeel T-Regs Research Park Kranenberg 6, 1731 Zellik Belgium Tel +32 2 463 18 89 Fax +32 2 463 23 29

Abstract

The paper analyzes the core telecommunications regulatory framework at European Union (EU) level which has been put in place since the beginning of the 90s. We find lack of support by Member States of the European Commission's liberalization program in several areas, including Member States' resistance to rapid liberalization, cost orientation, an effective EU-wide licensing system, pro-competitive numbering policy (carrier selection), as well as EU-wide harmonized interconnection rules and universal service obligations. We also identify a number of shortcomings of European Commission measures, especially in the areas of price regulation, interconnection rules and licensing policy. To overcome these inefficiencies, we recommend the establishment of an independent European Regulatory Authority (ERA) that is comprised of representatives from National Regulatory Authorities.

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The EU Regulatory Framework in Telecommunications: Thomas Kiessling and Yves Blondeel

Introduction

At the end of the 1980s, the European Commission embarked on an ambitious liberalization program of the European telecommunications market. The main goal of market opening and restructuring was to promote market structures that would enable the exploitation of substantial demand and innovation potentials in the communications industry. The major milestone of this program was 1 January 1998, the date for full liberalization of telecommunications infrastructure and services.¹ With this deadline passed, it is now time to take stock and to critically analyze the core regulatory framework which has been put in place at the European Union (EU) level to support the transition to a competitive marketplace.

The paper is organized as follows: the remainder of this introductory section identifies the objectives that the liberalization program should pursue and major policy issues of the market transition. In the following sections, we evaluate the effectiveness of EU level regulation for a number of core regulatory issues in achieving these objectives. These issues include the timeframe and content of the liberalization program, price regulation, interconnection regulation, numbering policy, licensing policy, and universal service legislation.²

Objectives of EU telecommunications regulation: What market conduct and performance do we want competition to achieve?

Competition in telecommunications means different things to different people. However, we have identified a core set of policy objectives for the EU telecommunications market on which we think the majority of market participants can agree:³

- Target market structures should ensure efficient allocation of resources, technical efficiency, innovative efficiency and fair competition. This involves implementing cost-oriented and non-excessive prices, minimizing cost of production, the provision of new services that satisfy evolving user needs, and ensuring fair network access and interconnection conditions and the absence of predatory pricing.
- The regulator should promote market structures that ensure that services are available in the geographical markets in which they are demanded. In particular, the availability of cross-border services should be promoted in the EU, which is historically characterized by fragmentation into national markets.
- The achievement of universal service has been determined as an important goal by users and regulators alike.

Market Transition Strategy and Policy Assumptions

The major task of telecommunications regulators at EU and Member state level is to define a transition strategy from monopolistic to competitive supply structures which ensures the achievement of the above policy objectives. We see the transition regulatory framework at EU level evolving around the following policy issues:

Division of regulatory responsibility. The right balance of responsibility is a precondition for the desirable market structures in the EU to develop. We believe that the principle of subsidiarity should be applied rigorously: the appropriate division has to be found between regulatory issues with an impact on cross-border markets, where EU level regulators should have prime authority, and predominantly national issues for which the Member States should have prime responsibility.⁴ The question of power balance between the Commission and the Member States is discussed from different angles with reference to the major regulatory issues in this paper.

Trade-off between policy objectives. As noted above, the regulators' major task is to simultaneously achieve technical, allocative and innovative efficiency, as well as fair competition and universal service goals. Since some of these goals potentially conflict with each other, the regulator has to find the right balance between these objectives.

For example, for full realization of innovation potentials, regulators need to encourage investment in competing infrastructure. Infrastructure competition can be expected to increase innovative activity, especially in the local loop, but also to some extent in the long-distance market.⁵ However, technical inefficiencies can arise if the infrastructure investment is *not sustainable*, i.e. if the investment does become unprofitable once factors favoring the investment like price distortions or cost advantages have been phased out. The resulting technical inefficiencies can take the form of write-offs generated by companies leaving the market, or over-capacities.⁶ The optimal balance between promoting infrastructure competition and ensuring technical efficiency is far from clear. The USA and the UK for example promote investment in competing infrastructure on a wide scale,⁷ while other countries, including many EU Member States, attempt to maximize the use of existing infrastructure through favorable price and usage conditions for interconnection services.⁸ Subsequent sections of the paper clarify the trade-off between promoting infrastructure competition and ensuring technical efficiency.

A related issue is the competitive position of the incumbent relative to new entrants. This issue has recently received much attention under the heading of regulatory symmetry versus asymmetry between the incumbent and new entrants.⁹ A fully symmetric approach – "the same price signals, the same restrictions, and the same obligations" – is often claimed to lead to economic efficiency.¹⁰ However, we believe that the efficiency criterion underlying this argument is too narrow and not sufficiently adapted to the realities of the telecommunications market. For example, overall efficiency gains might result from asymmetric incentives towards sustainable investment in the local loop, due to intensifying innovative activity through local

infrastructure competition. As the analysis in the following sections shows, regulatory asymmetries can, in certain policy areas, help manage the transition towards optimal market structures.

Institutional aspects

There is no single regulatory body in telecommunications at EU level. Regulatory policy is conducted in parallel by several, relatively independent policy-making authorities that often pursue conflicting goals. The most important entities and their political objectives are presented below.

The European Commission – Directorate General IV (Competition)

DGIV is responsible for EU competition policy. It has the task of ensuring fair competitive conditions for suppliers and users. DGIV is the main architect of the Commission's liberalization policy in telecommunications.

The central instrument of DGIV's liberalization policy is the Art. 90 EC Treaty. This article allows the Commission to reverse policy measures passed by Member States relating to exclusive or special rights (for example, monopoly rights) if the policy measures in question violate (an)other article(s) of the EC Treaty. In 1988, the Commission found that national dominant network operators' exclusive rights to distribute telecommunications terminal equipment violated the EC Treaty¹¹ and invoked Art. 90 (3) to abolish these rights.¹² The European Court of Justice confirmed the authority of the Commission to use Art. 90 EC Treaty to liberalize telecommunications markets when it dismissed a case introduced by France against the terminal equipment directive in 1991.¹³ Since then, the Commission has used Art. 90 to successively liberalize all telecommunications markets. Major liberalized; and 1 January 1998, when voice telephony and infrastructure provision for voice telephony were liberalized.¹⁴

Art. 90 EC Treaty gives the Commission considerable power with respect to the Council of the European Union and the Member States since it allows the Commission to impose liberalization measures without the concurrence of the Council. However, the Commission cannot push through liberalization measures on the basis of Art. 90 against strong Member State resistance. Disregard of Member States' objections would undermine the political support that is vital to the Commission's policy initiatives.¹⁵ Art. 90, as well as Art. 85 EC Treaty, vest DGIV with substantial power to determine the basic market supply *structure*.¹⁶ However, the Council and Directorate General XIII (Telecommunications) both play a more important role than DGIV in issuing legislation that facilitates the *transition* to competitive markets. As shown below, essentially all of the more transition-related measures (interconnection regulation, licensing policy) were passed by the Council, not by the Commission.

The European Commission – Directorate General XIII (Telecommunications, Information Market, and Exploitation of Research)

DGXIII is responsible for the execution of the EU research and development programs in telecommunications, the Open Network Provision (ONP) legislation and control of implementation of ONP measures by Member States, as well as various harmonization and standardization measures. The bulk of ONP drafts were prepared by DGXIII prior to their adoption by the Council of the European Union, including the Council directive for the introduction of ONP for Leased Lines in 1992¹⁷ and the Council Directive on the Application of ONP to Voice Telephony in 1995/1998.¹⁸ DGXIII also plays an important role in the transition regulation to a competitive marketplace. The draft process of both the 1997 Interconnection Directive¹⁹ and the 1997 Licensing Directive²⁰ was driven by DGXIII.

Council of the European Union

The Council of Ministers is comprised of the Ministers of Member States that are responsible for telecommunications policy, and therefore represents the Member States' interests. Regulatory measures of the Council often express political compromises between the Member States. Additionally, the Council has to take into account the views of the European Parliament.²¹

The Council plays a more important role than the Commission in passing legislation that defines the framework for the transition to competitive markets. This can be explained by the fact that competitive market structures will only develop if the Member States support the Commission's liberalization measures and transpose them into effective national legislation.

The Council has adopted important regulatory measures in the area of open network provision (ONP). The ONP Framework Directive of 28 June 1990 stipulates EU-wide harmonized supply conditions and standardized technical interfaces.²² More recently, the Council and the European Parliament have passed the core regulatory framework enabling the transition to competitive markets in telecommunications, i.e. the Licensing Directive²³ and the ONP Interconnection Directive.²⁴

Member States and National Regulatory Authorities (NRAs)

The central objective of Member States is to control the evolving national regulatory and market environment. It is therefore in the interest of Member States to keep the Commission from extending its regulatory powers into areas which the Member States consider to be under national regulatory responsibility.²⁵ As a result, the NRAs are currently working to impose themselves as the prime regulatory authorities for the transition towards competitive markets. As illustrated throughout this paper, the national interests of Member States and expanding NRAs often conflict with the European Commission's attempt to install EU-wide rules to manage the newly competitive markets in a harmonized way.

Introducing competition

Compared to developments internationally, the European Union has been relatively slow in starting to liberalize the telecommunications market. It was only in 1987 that the European Commission published a framework for future regulation and liberalization in its Green Paper on the Development of the Common Market for Telecommunications Services and Equipment.²⁶ In contrast, in the USA the first license to compete for public switched long-distance services was granted to MCI in 1969²⁷ (operational 1972), and in 1980 the market for long-distance services was effectively liberalized.²⁸ In Japan, the Telecommunications Business Law of 1985 liberalized most telecommunications markets, and competition has since then developed especially in the long-distance and international markets.²⁹

The liberalization process

The liberalization measures in the EU have been introduced in a piecemeal fashion, starting with market segments of subordinate importance and gradually establishing the Commission's power to liberalize the core telecommunications markets. The first market liberalized by the Commission on the basis of Art. 90 EC Treaty in 1988 was the terminal equipment sector. In 1990, the European Commission introduced another liberalization directive on the basis of Art. 90 EC-Treaty, effectively liberalizing most telecommunications services except voice telephony.³⁰ However, although the 'Services Directive' can be legally interpreted to have liberalized *all* services other than voice telephony by July 1990, in many cases Member States maintained exclusive rights for non-voice telephony services for several years unless legally challenged.³¹ Further liberalization steps included the authorization of the provision of all non-reserved telecommunications services on cable TV networks by 1 January 1996³² and the authorization of competitive infrastructure provision for already liberalized services by 1 July 1996.³³

A further example of the Commission's piecemeal approach to liberalization is mobile communications. Although, following legal interpretation, the liberalization of mobile communications was already covered by the 1990 Services Directive, the Commission in the 1990s had to intervene several times in the licensing of alternative mobile operators in Member States in order to ensure fair competition. For example, in 1995 the Commission adopted a Decision based on Art. 90 EC Treaty against Italy, which had attempted to impose considerable license fees on the second Italian GSM operator, but not on the mobile operations of the incumbent, Telecom Italia.³⁴ It was only in January 1996 that the liberalization of mobile communications.³⁵

In March 1996, the Commission modified the 1990 Services Directive, abolishing all remaining exclusive or special operator rights by 1 January 1998, including monopoly rights for the supply of voice telephony services and the provision of public telecommunications infrastructure (transmission) services for voice telephony.³⁶

However, the agreement on the timetable for full liberalization included transitional periods for certain Member States. As a result of a case-by-case assessment by the Commission, the following periods have been confirmed: Luxembourg will fully liberalize its market from July 1998; Spain from December 1998, Ireland and Portugal from January 2000 and Greece from January 2001.

The substantial delay between the first liberalization measures in 1988 and the full liberalization of remaining voice telephony markets in 1998–2001 is due to the resistance of Member States, as well as national dominant network operators. This is illustrated by the following major events on the road to liberalization:

- May 1992: The Council refuses the Commission's proposal to rapidly eliminate the remaining monopolies. In its decision the Council expressed the will of the majority of Member States.³⁷
- April 1993: The Commission's proposal to liberalize cross-border telephony services in the EU on 1 January 1996 fails to gain support from Member States.³⁸
- July 1993: The Council confirms 1 January 1998 as the date for the full liberalization of all remaining monopolies. This date had been proposed by Member States.³⁹

However, although the EU began to liberalize telecommunications markets considerably later than the US or Japan, it is worth noting that the EU regulatory framework, in contrast to the US, does not make a distinction between local and long-distance services. As a result, all EU liberalization measures between 1990 and 1998 fully apply to local markets as well as long-distance markets. In comparison, most US local telecommunications markets have only been opened to competition by the 1996 Telecommunications Act.

Shortcomings in the liberalization program/legislation

Importantly, the liberalization program shows a number of significant gaps. The use of cable TV distribution networks for the provision of telecommunications services was liberalized on 1 January 1996 for all non-reserved services which in most Member States meant services other than voice telephony, and on 1 January 1998, for all remaining services.⁴⁰ However, the provision of cable TV infrastructure itself was never subject to EU level liberalization. Studies contracted by the Commission provide evidence that integrated ownership of cable and telecommunications networks stifles innovation and leads to anti-competitive practices.⁴¹ As a result, in late 1997, the Commission addressed the issue of cross-ownership in a Draft Directive. In early versions of this draft the Commission proposed to include the requirement for operators which are dominant in both the provision of cable and telecommunications networks to divest these two activities. Following resistance from Member States, especially from Germany, where Deutsche Telekom controls over 90% of the cable TV infrastructure, the Commission dropped the requirement to divest cable and telecommunications

operations.⁴² As a result, the Draft Directive only stipulates that dominant operators legally separate the operation of cable TV networks and public telecommunications networks.⁴³ Divestiture between TV networks and telecommunications networks could then only be forced case-by-case on the basis of an abuse of a dominant position (Art. 85/86 EC Treaty). The failure to impose divestiture of cable TV and telecommunications networks EU-wide will result in more fragmented market structures, with some Member States fostering competition between cable and telecommunications access networks⁴⁴ and others maintaining integrated market structures in the access network.

Another area where effective liberalization has only partially been achieved is wireless communications. As discussed below (see section 'Licensing'), the EU Licensing Directive issued in 1997 permits national regulatory authorities to limit the number of licensees on the grounds of scarcity of radio frequencies.⁴⁵ This allows conservative Member States to protect national incumbents or other favored operators by refusing licenses to newcomers whose projects contain wireless service elements.

Price Regulation

Economic theory suggests that the objectives of price regulation in telecommunications should be threefold:

- Price regulation can increase allocative efficiency. In particular excessive prices set by dominant operators can be prevented.
- Price regulation can ensure fair competition by preventing operators, especially those that command significant market power, from setting predatory prices.
- Price regulation can increase technical efficiency. The restructuring of long-distance and local tariffs to better reflect cost of service provision is essential in order to prevent inefficient entry in the long-distance market.

There is long-standing debate in the literature as to the definition of excessive and predatory prices and as to the regulator's ability to identify such prices. The methodological and practical problems of estimating the underlying cost functions are considerable. For example, depending on the school of thought, economists consider prices that a provider sets to undercut his competitors to be predatory if they are either below fully-distributed cost or below incremental cost.⁴⁶ In addition, cost information is often unavailable, e.g. calculation of 'forward-looking' costs (on which prices should be based), involves future cost estimates which are by definition speculative.

Taking into account these methodological and informational shortcomings, price regulation should be limited to putting in place and enforcing price floors and ceilings that represent widely accepted *cost trends*. Prices that are clearly not in line with these price bands should then be contested by the regulator. For example the regulator can assume that a price which is set *below* incremental cost is allocatively inefficient and

potentially predatory.

Since the inception of EU-level telecommunications regulation at the end of the 1980s price regulation has taken the form of:

- Promotion of cost orientation in the framework of Open Network Provision (ONP) directives that impose on operators with special or exclusive rights (and more recently on operators with significant market power) the introduction of transparent cost accounting systems
- Case-by-case antitrust interventions against excessive and predatory prices in the context of Art. 86 and Art. 85 EC Treaty

Promotion of cost orientation

The EU regulatory bodies have been stating the political will to move towards more cost-oriented prices in telecommunications since 1988.⁴⁷ In the early 1990s, the principle of cost orientation was included in various EU directives in the area of Open Network Provision (ONP).⁴⁸ But up to now the Commission has neither specified how much price re-balancing it deems necessary to achieve cost-orientation nor outlined the timeframe in which it expects cost-orientation to occur. To this end, the Commission could propose price caps and price floors as an efficient tool to impose tariff rebalancing in a phased and transparent way.⁴⁹ This would greatly improve operators' planning security and help avoid market entry which proves to be unsustainable once cost orientation is achieved. The Commission has so far not proposed definite tariff balancing measures because of continuing political resistance from several Member States. These countries fear that tariff re-balancing will have unpopular effects including increases in local tariffs.

The Commission has therefore limited its efforts to the promotion of harmonized and transparent cost-accounting systems. A commonly accepted cost-accounting method would greatly improve the regulators' ability to identify non-cost-based prices. The Commission first attempted to introduce such cost-accounting systems in the beginning of the 1990s in the framework of the ONP Directive on voice telephony. But whereas the first drafts of this directive in 1991 included far-reaching obligations to publish details on the cost-accounting system, the final draft of the directive in 1993 only obliged operators " [to] ensure that a description of the cost-accounting system is made available on request."⁵⁰ It did not specify *which* cost elements had to be published.⁵¹ The Directive was subsequently stalled because the Council and the European Parliament could not agree on a common text.

In parallel to the ONP Directive on voice telephony, the Directive for the introduction of ONP for leased lines of 1992 introduced the requirement to notify cost-accounting systems to the European Commission.⁵² This stipulation was largely ignored by Member States.

The requirement for transparent cost-accounting systems was again included in the new version of the ONP voice telephony directive, issued at the end of 1995.⁵³ In this

Directive, operators with special or exclusive rights are required to publish the major cost categories used as well as their allocation to the voice telephony service by 31 December 1996. Many operators have not respected this deadline and have still not provided the required information.

We conclude that the European Commission in the 1990s has not achieved EU-wide harmonized cost orientation and re-balancing of long-distance and local tariffs. Although some Member States, including France, Germany and Spain, have finally taken regulatory measures at the end of the 1990s to speed up tariff balancing,⁵⁴ the lack of an EU-wide approach is leading to disparate tariff conditions between Member States which will impede the development of cross-border telecommunications services.

Antitrust proceedings against excessive and predatory prices

The EU competition rules constitute a powerful means to correct violations against the principle of cost orientation. The Commission established in its 1991 Guidelines on the application of EEC competition rules in the Telecommunications sector that predatory prices set by a telecommunications operator can constitute an abuse of market power pursuant to Art. 86 EC Treaty.⁵⁵ In the Guidelines the Commission also confirmed that excessive prices in telecommunications can violate Art. 85 / Art. 86 EC Treaty.⁵⁶ Since then, the Commission has intervened several times effectively to prevent predatory prices.⁵⁷ However, none of the decisions that the Commission has taken relative to excessive prices have been able to correct the fundamental imbalance between excessive prices for long-distance communications and prices that do not cover cost for local communications.

One of the most important cases of *predatory pricing* in the 1990s where the Commission intervened was the Global European Network (GEN). Several European incumbent network operators had planned since 1993 to offer broadband services over this new European transmission network. From the outset of the project, there were indications that the participating operators were going to charge competitors buying transmission capacity on GEN higher prices than themselves.⁵⁸ The Commission finally authorized GEN in 1997 under stringent pricing conditions that are likely to prevent predatory behavior.⁵⁹

One of the earliest proceedings against *excessive prices*, a case involving Deutsche Telekom, illustrates the lack of political will at EU level to effectively control excessive price levels. The operator had been accused of having made a profit of DM11 billion (6.1 billion, 1 = DM1.80) in its telephone business in 1988 which represented 34% of revenues. The Commission in 1991 considered that this unreasonable profit margin was attributable to excessive long-distance tariffs. However, the inquiry was stopped after the German Ministry of Post and Telecommunications agreed to postpone a planned tariff increase – without addressing the structural imbalance of long-distance tariffs.

Another inquiry of central importance was initiated by the Commission in 1990 on

the international accounting rate system.⁶¹ Accounting rates determine periodic financial settlements between telephone operators.⁶² These tariffs were (and in many cases still are) generally considered to be substantially above cost, resulting in excessive international long-distance tariffs.⁶³ The Commission stopped the inquiry in 1992 without any decision. It was only at the end of 1997 that the Commission started to re-investigate the level of international accounting rates as part of a reform package to establish a cost-based international interconnection regime.⁶⁴

In some cases Commission proceedings against excessive prices actually resulted in more cost oriented prices. For example, in early 1997 a settlement was reached between the Commission and Belgacom, the Belgian incumbent operator, on the prices publishers of telephone directories have to pay to access subscriber lists of Belgacom's voice telephone service. This agreement led to a reduction in the amount charged by Belgacom to telephone directory publishers.⁶⁵ However, as noted above, none of these decisions has fundamentally improved cost-orientation of long-distance and local tariffs.

In summary, the European Commission in the 1990s did not have the political will to effectively control structurally excessive prices in telecommunications, especially in the long-distance and international markets. However, the Commission did succeed in effectively preventing predatory prices in a number of cases.

Interconnection

The conditions and prices of network interconnection between incumbent operators and new entrants play a central role in the establishment of effective competition in the EU. The European Commission proposed for the first time in 1995 a draft directive to regulate interconnection at the EU level. In June 1996, the Commission's proposals were published after a number of changes in a Common Position of the Council and the European Parliament.⁶⁶ The proposals were finally issued in June 1997 in the form of a directive by the Council and the Parliament.⁶⁷ In the remainder of this section the major policy issues of the Directive – applicability, regulatory ex-ante conditions vs. commercial negotiations, and interconnection charges - are analyzed.

Applicability

The interconnection rules are applicable to all providers of public telecommunications networks and services. Organizations providing fixed or mobile public switched telecommunications networks or services or leased line services which control access to the customer have both the obligation and the right to negotiate interconnection (Art. 4).

Control of access to the customer as a criterion for both the obligation and the right to interconnect is a conceptual shortcoming. This is because the control of access to the customer is irrelevant as eligibility criterion for interconnection. A long-distance operator that does not control any customer access should obviously have the right to interconnect to the public network, but it is not clearly granted this right by the Interconnection Directive.⁶⁸ Instead, the Directive, in Annex II (4), leaves it up to Member States to decide whether operators that do not control customer access should have the right to interconnect. This approach is likely to increase market fragmentation, with some Member States granting rights to such companies and others limiting the right to interconnect to operators that control customer access.

Additional rules apply to operators with significant market power. Network and service operators in the area of public fixed and voice telephony and mobile services, as well as leased lines, that are declared by Member States to command significant market power in the relevant service market have the obligation to *meet* all 'reasonable' requests for interconnection.⁶⁹ As a general rule, an operator is considered to possess significant market power if it has a share of 25% of the relevant market.⁷⁰ However, the Directive also takes into account other determinants of significant market power including the control of bottleneck facilities and the operator's financial strength. An operator with less than 25% market share can still be declared as having significant market power if more than one of the other criteria are satisfied.

This approach is economically sound. The experience with interconnection negotiations suggests that the probability of failure in coming to an interconnection agreement increases if one of the negotiating parties is an incumbent with market power. It is therefore appropriate to oblige operators with significant market power not only to negotiate but also to meet interconnection requests in order to improve legal security for new entrants. However, the Directive does not specify when a request for interconnection is 'reasonable'. If the Commission does not elaborate on this point, it is likely that legal uncertainty will arise and unjustified refusals of interconnection by dominant operators will occur.

Country-specific interpretation, and thus market fragmentation, is likely to arise from the fact that the Commission distinguishes between the market for the telecommunications service in question and the market for interconnection services. The Commission proposed that the market for interconnection services should be taken as national in scope in order to ensure that Member States would not unduly declare smaller entrants to have significant market power. In contrast, the relevant service market can be regional or national. The distinction between the two markets raises the risk that the Interconnection Directive becomes a 'shopping list' Member States can choose from, depending on their interpretation of which relevant market applies to a given provision. An example is the UK's proposal in November 1997 (decision in early 1998) to declare Vodafone and Cellnet as having significant market power in the retail market for mobile calls, but not in the national market for interconnection services. Based on this distinction, the UK applied Art. 4(2) and Art. 6 of the Interconnection Directive to these operators which contain the basic obligation to interconnect,⁷¹ but not Art. 7 (which stipulates the publication of a Reference Interconnect Offer) and Art. 8 (which stipulates cost orientation).⁷² Again, this is likely to increase supply fragmentation as EU-wide operators will be confronted with interconnection rights and obligations which differ between countries.

Regulatory ex-ante conditions vs. commercial negotiations

The Interconnection Directive gives preference to commercial negotiations between network operators and considers that the determination of interconnection conditions by the regulator should be the exception. In particular, the interconnection price, technical interfaces, etc. are to be determined privately between operators.⁷³ However, although competitive determination of these conditions is desirable, the Directive does not reflect market realities. It is unrealistic to suppose that the interconnection negotiation between an incumbent operator and a newcomer leads to a socially optimal outcome.⁷⁴ Instead, the dominant operator has the ability to skew the negotiations in his favor. This is typically due to better information about cost figures and more staff to lobby and lead the negotiations. Experience in countries such as the USA or the UK, where the market for interconnection is relatively mature, confirm this view. Examples from Germany (Mannesmann-Deutsche Telekom) and Sweden (Tele2-Telia) show that the resulting contentions eventually have to be resolved by antitrust authorities. However, antitrust authorities and courts will not be able to process the growing number of conflicts between incumbent operators and newcomers. Clearly, it is preferable for law suits to be avoided in the first place by clear regulatory rules.

In order to increase legal certainty and improve the market outcome, analysts therefore propose distinguishing between two types of interconnection conditions:

- Those determined by the regulator ex-ante, in order to ensure efficient negotiation results.⁷⁵ Ex-ante conditions could include a list of services which are subject to such regulation, interconnection details on the cost-accounting system to be used, resolution procedures for disputes, requirements for the provision of equal access and number portability, etc.⁷⁶
- Those which can be best determined in private negotiations between network operators, where the regulator's role should be limited to review and approval. This category includes the actual interconnection interfaces as well as the detailed commercial conditions and prices.

The Interconnection Directive provides for the possibility to define ex-ante conditions on a very limited scope and then only as an option of an NRA, rather than as a mandatory and EU-wide uniform element of interconnection negotiations. This raises the danger of market power abuse by incumbent operators in the form of abusive interconnection conditions as well as increasing divergence in interconnection regulation in Member States. There are already signs that ex-ante conditions in the EU environment are not very effective. For example, in most EU Member States the Reference Interconnect Offer in which the incumbent publishes and the NRA approves, the interconnection conditions for all operators only includes very limited ex-ante conditions.⁷⁷ Usually, only a subset of services is covered by ex-ante rules. For example, Reference Interconnect Offers in the EU typically do not apply to 0800 (freephone) and 0900 (premium) services, although these services account for a growing share of the market. Furthermore, Reference Interconnect Offers typically include no provisions on the cost-accounting system to be used.

Interconnection charges

The regulatory authority should not attempt to set the actual interconnection prices. Experience from the USA and UK shows that the regulator has a continuous information gap compared to the dominant operator about cost data necessary to set cost-oriented prices. Nevertheless, it is the responsibility of the regulator to audit interconnection tariffs on an ongoing basis to ensure that they increasingly reflect forward looking long-run average incremental cost. Prices that reflect forward looking long-run average incremental cost ensure socially optimal incentives to invest in telecommunications infrastructure.⁷⁸ This type of cost is recommended in the Interconnection Directive for the interconnection tariffs of operators with significant market power.⁷⁹

A first step towards implementing this cost type is to stipulate on an EU-wide level the cost-accounting system to be used. The current Interconnection Directive only calls for publication of the cost-accounting system, and does not clearly specify the content or methodology of the cost-accounting system including the cost categories to be used and the allocation rules of these categories to products and services.

The relative immaturity of EU-wide harmonized cost accounting contrasts with recent attempts by the Commission to determine interconnection tariffs by benchmarking them against the lowest EU tariffs without reference to the underlying cost of service provision.⁸⁰ The appropriateness of this method has to be questioned, as low tariffs are often set arbitrarily, for example to promote a favored newcomer. Furthermore, the premature determination of interconnection benchmarks in the EU in the form of upper and lower rate limits raises the danger that differences in calculating costs will be cemented, with no consensus being sought on an EU-wide harmonized interconnection cost allocation method. Lack of consensus will then lead to more diverging interconnection rates in the long run.

Numbering Policy: Carrier Selection

Investment incentives in network and services markets are substantially affected by the Numbering Policy. The Commission laid out the issues related to numbering in a Green Paper in 1996.⁸¹ In this paper, the Commission proposes policy actions in a variety of areas, including carrier selection, number portability, convergence of national number plans, the implementation of a common numbering scheme for special pan-European services, etc. This analysis focuses on the first item – carrier selection – where the Commission's policy is most advanced. In its proposal for a Directive on operator number portability and carrier pre-selection,⁸² the Commission defines the following policy actions:

- Call-by-call carrier selection shall be offered by all fixed local access providers with significant market power as soon as the Directive comes into effect in all Member States where full liberalization is required by 1 January 1998.
- Carrier pre-selection, with the default carrier to be determined by the subscriber and with call-by-call override to be available to the user, shall be offered at least by all fixed local access providers with significant market power by 1 January 2000 or in those countries which have been granted an additional transition period no later than two years after this period expires.⁸³
- Operator number portability shall be offered by all fixed local access providers by 1 January 2000.

The Commission considers the above measures to be necessary to achieve the following objectives: ensure that new entrants gain market share in the long-distance market, in order to bring down prices faster and foster service competition; and increase market choice by giving the customer control over which long-distance operator he uses.⁸⁴ To support the proposed policy actions, the Commission cites the cases of the US and Australia where carrier selection is said to have resulted in lower prices in the long-distance market.

The Commission's proposals were criticized by a number of Member States, especially the UK, for neglecting their impact on competition in the local access network. Since the early 90s, the UK government has encouraged the construction of competitive local access infrastructure by giving local operators certain market advantages. These include the access operators' ownership of the customer, i.e. the access operator receives all revenue from the end-to-end call and controls how its subscribers' calls get routed in the long-distance and the termination network. This allows access providers such as cable TV operators to increase their profit margin by negotiating the lowest price with long-distance operators. End-to-end control over the call is considered crucial by the access providers to ensure viability of their investment.

Carrier pre-selection, according to the new entrant access providers, will reduce their profit margins because the customer now controls the choice of the long-distance operator and the latter will bill the customer directly. The access provider foregoes the opportunity to add a margin on the interconnection price negotiated with the long-distance operator. The access providers therefore argue – supported by Oftel, the UK regulator – that carrier pre-selection would endanger the viability of investment in competitive local infrastructure.⁸⁵

To evaluate the Commission's proposal, it is useful to recall the policy objectives that EU regulation should pursue, as outlined in the introductory section to this paper. Long-term efficiency (i.e. a high innovation rate, minimum cost production and cost-based prices) is best achieved through *sustainable* competition between the incumbent and new operators. Studies show that service competition (i.e. competition between services that use the same monopolistic infrastructure) generally results in lower prices⁸⁶ and, to a lesser extent, new services.⁸⁷ In contrast, there is a great potential of

service innovation on competing network infrastructures. Examples include city-wide interconnection services between local area networks (LANs), which have become available at native LAN speeds and protocols as a result of local network competition.⁸⁸ Another example is high-speed Internet access on competing local infrastructures, notably cable-TV networks and wireless local access networks.

In the light of the above findings, the Commission's Draft Directive in its version of October 1997 seemed well-balanced. The obligation of local access providers that command significant market power to implement carrier pre-selection would have helped bring down long-distance tariffs and introduce customer choice. However, no obligation was imposed in the Draft Directive on access providers that do not command significant market power to offer carrier selection. In the Commission's proposal, alternative local access providers without significant market power would have continued to provide the end-to-end service package to their subscribers without the risk of losing parts of the package to other operators. This effectively addressed the UK's objections against carrier pre-selection. In summary, the asymmetric treatment between access providers with and without significant market power would have ensured sustainable infrastructure competition in the access network, at the same time fostering service competition in the long-distance network.

However, the later versions of the Draft Directive (beginning of 1998) allow Member States to impose carrier pre-selection / call-by-call carrier selection on *all* operators. In this way the Directive would approve actions of Member States like Germany that had already imposed call-by-call carrier selection and carrier preselection on all operators by 1 January 1998. These countries typically justify their policy with the need to regulate the market in a symmetric fashion. Although not stated explicitly, the underlying assumption is that effective competition has been introduced and therefore no advantages should be given to new entrants. Since the main effect of the imposition of carrier selection on alternative access providers is to discourage competitive local infrastructure investment, the efficiency of this measure has to be questioned. It is more likely that some countries use carrier selection as a tool to protect their incumbent operator from competing infrastructure.

Licensing

A functioning license system is one of the basic requirements for an effective EU regulatory regime to promote competition in the network and service markets. The Commission's approach in the Licensing Directive contains the three major principles discussed below.⁸⁹

The number of licenses can only be limited on the grounds of scarcity of frequency or numbering resources

As a general rule, NRAs shall not limit the number of licenses in a given category of telecommunications services or infrastructure provision. This provision prevents NRAs

from limiting the number of licenses on the basis of an individual evaluation of the expected market volume. The provision is of great importance: experience shows that national governments have repeatedly limited the number of competitors in order to protect favored operators, whether these be the incumbent or a new entrant.

Nevertheless, the Directive does allow the number of licensees to be limited on the grounds of scarcity of radio frequencies or temporarily to make available sufficient numbering schemes (Art. 10). These exceptions have to be criticized: even if numbering plans constitute a bottleneck at a given point in time, the dissolution of this bottleneck can best be achieved by competition. It is clear that the two criteria were lobbied for by conservative Member States in order to protect favored network operators. Spain, for example, insisted on the inclusion of the numbering criterion, and then evoked in late 1996 the limited numbering plan that enabled it to exclude entrants which may compete with Retevisión, its favored second operator in the market.

Nor does the scarcity of radio frequencies warrant setting a limit on the number of licenses. Efficient, market-oriented methods to reallocate frequencies are available to overcome the frequency bottleneck.⁹⁰ The inclusion of this criterion in the Licensing Directive allows Member States and NRAs to promote their own view of how the market structures should evolve, thereby effectively restricting competition. For example, in the Netherlands in mid-1996, the government decided that a rapid roll-out of competing networks could only be achieved if the entrants used a combination of fixed and radio technologies. The government then used the scarcity of radio frequency spectrum as justification for temporarily limiting the number of national operator licenses to two, thereby restricting the development of competition that could overcome the frequency bottleneck.

Distinction between general authorizations and individual licenses

The Licensing Directive distinguishes between general authorizations and individual licenses. The former are usually defined by Member States in framework decrees and authorize entrants to offer their services without explicit decision by national regulatory authorities as long as they satisfy certain general conditions.⁹¹ The advantage of general authorizations lies in their harmonizing effect. Before 1998, license conditions for a given service often varied widely between Member States. For example, operators in less liberal EU countries such as Greece, Portugal, Spain, etc. needed detailed licenses for certain services, while they often did not need any license at all in more competitive countries such as Denmark, the Netherlands, the UK, etc. From 1998 onwards, country-specific, individual license conditions will to a large extent disappear for services which fall under the category of general authorizations.

On the other hand, the Commission approach to general authorizations can be criticized for being too unspecific. Depending on the entrant's service scope and regulatory situation in the particular country, certain rights and obligations need to be specified which go beyond the general interconnection or licensing conditions defined at EU or national level. Without such ex-ante conditions the dominant operator or the NRA could define the network access and usage conditions for competing operators in a restrictive way. For example, the French government included a provision in operators' license conditions that at least 5% of the company's investment has to be spent on research and development. Such measures have the potential to deter desirable market entry and should be ruled out by the licensing regime.

The Commission's proposals originally included most services in the category of general authorizations, with earlier drafts of the Licensing Directive limiting individual licenses to services which include bottleneck resources, i.e. radio frequencies. For these services, individual licenses provide a means to define rights and obligations relating to the efficient usage of these resources.⁹² The Council overruled the Commission's proposals, extending the areas where Member States can issue individual licenses to voice telephony, public telecommunications networks and networks involving the use of radio frequencies or numbering resources (Art. 7). This raises the danger that Member States apply extensive licensing procedures that act as barriers to entry. For instance, in late 1997 several Member States, including Belgium and Italy, implemented cumbersome licensing regimes, especially in the area of voice telephony. It is likely that these regimes have already deterred potential operators from entering the voice telephony market to some extent.

Co-ordination of EU licensing regimes

NRAs are called upon to co-ordinate their licensing regimes in order for license conditions to become harmonized across the EU.⁹³ For this purpose, the European Telecommunications Office (ETO) was created in 1993. In addition, in an early draft of the Licensing Directive the Commission proposed the creation of the European Union Telecommunications Committee (EUTC).⁹⁴ The licensee would have been able to address the EUTC in the case of being unable to obtain harmonized conditions. However, the EUTC was removed from the final version of the Licensing Directive.

ETO and EUTC are more a consequence of political compromises with Member States than the result of a license policy based on economic principles. In 1992, the Commission proposed to extend the principle of mutual recognition already applied in the area of terminal equipment test and certification to telecommunications service licenses. Additionally, the Commission proposed replacing national license procedures by an EU-wide license for services which are mainly offered on an EU-wide cross-border basis.⁹⁵ The responsibility for issuing such an EU-wide license could have stayed with the Member States, under the condition that a license granted in one Member State would conform to the EU-wide license conditions and would have been automatically valid in all other Member States.

The Commission initiative was blocked by the Member States which saw in the EUwide license a violation of the subsidiarity principle. The Commission proposals were interpreted as an attempt to constitute supranational policy authority in an area of Member State prerogatives.⁹⁶ This argument is flawed because the subsidiarity principle only applies where the relevant markets are national, whereas the services in question here are mostly supplied to companies across several countries. An operator license to provide these services should therefore be valid in all countries covered. As a result of Member States' refusal the Commission had to fundamentally modify its proposals, leading to substantial delays. Only in 1995 did the Commission put forward a new regulatory licensing framework, in which the EU-wide license had been dropped.

In practice, until 1997 the Commission's license regulation was limited to the creation in 1993 of ETO in Copenhagen. ETO has the task of supporting applicants to obtain authorizations throughout the EU, but has never been used widely by potential EU-license takers. Due to the fact that the authority to issue licenses stays with the Member States, it can only add little value, and its activities have mostly been limited to the provision of harmonized application forms or information on national license procedures. Similar limitations would have applied to the European Union Telecommunications Committee (EUTC) which was removed from the final version of the Licensing Directive.

The discussion of license policy on the EU-level can be summarized as follows:

- The Commission should continue to promote an efficient system of EU-wide licenses with respect to Member States.
- NRAs' ability to issue individual licenses in the area of voice telephony, public telecommunications networks and networks involving radio frequencies or numbering resources has to criticized. There are indications that cumbersome individual licenses, e.g. in voice telephony, have already deterred market entry.
- The Commission should audit any limitation of the number of licenses imposed by a national regulatory authority on the grounds of scarcity of radio frequencies or numbering resources and reverse such restriction if it finds that the bottleneck could be overcome by other means (reallocation of frequencies, number plan innovations).

Universal Service

In this section we analyze the European Commission's policy approach in the area of universal service obligations (USO). The core of the Commission's universal service policy is defined in the 1996 Full Competition Directive,⁹⁷ the 1997 Interconnection Directive⁹⁸ and the proposed Voice Telephony Directive.⁹⁹ The Commission defined three basic issues relating to universal service in its 1995 Green Paper on Infrastructure:¹⁰⁰

- the scope of universal service
- the cost of universal service
- the mechanisms for sharing these costs among market players.

Scope of universal service

Universal service as defined by the Interconnection Directive means a minimum set of services which is available to all users, independent of their geographical location and at an affordable price. The Directive does not define exactly what the scope of services will be, leaving it to each country to legislate according to its specific situation. But the Directive does limit the services which a Member State can *finance* through a universal service funding mechanism.¹⁰¹ The objective of this provision is to limit the financial burden new entrants have to bear for universal services. The service category which can be funded is essentially restricted to the simple fixed public switched telephony line. This line should be capable of receiving voice telephony, fax group 3 and low bandwidth data services (modem communications). The category may also include emergency services, operator assistance and directory services. In addition, operators can be required to contribute to the development of public payphones. Also the Preamble of the Directive indicates that Member States should consider including ISDN as a universal service once it has reached a more advanced state of deployment.

There is a tendency among Member States including Belgium and France to pursue broad definitions of universal service, which could result in large financial burdens that entrants have to bear. The Belgium government for instance has repeatedly stated that it has the intention of granting universal Internet access to public schools, hospitals and libraries. There are indications that the Belgian government is financing Internet access for public institutions and other universal services through mechanisms which run counter to the spirit of the Services Directive and the Interconnection Directive, including license fees for new operators. Although the Commission has stated that "… it would be disproportionate for National [Financing] Schemes to be used to recover costs associated with … the provision of communications services outside the scope of universal service to schools, hospitals or similar institutions,"¹⁰² it is doubtful if the National Schemes in question would ever be contested or reversed by the EU regulatory authorities.

Furthermore, an attempt by the Commission to prevent financing of broad universal service definitions would be unpopular. Opponents of liberalization could then easily argue that competition in telecommunications markets prevents the achievement of social policy goals such as the 'Information Society'. Thus there remains a risk that broad universal service definitions will to some extent delay the benefits of competition (more innovation, lower prices) by decreasing the incentives of new operators to enter the market.

Cost of universal service

In order to allocate the cost of universal service to network operators in a fair and transparent way, this cost has to be calculated as accurately as possible. Cost studies that were conducted for the USA, the UK and Australia provide important data points but vary widely in their results. The calculated cost of universal service for the UK in the beginning of the 1990s varied between ECU110 million (about \$135 million -

corresponding to 0,7% of revenues) and ECU500 million (about \$610 million - corresponding to 3% of revenues), and for Australia between ECU150 million (about \$183 million – corresponding to 2,4% of revenues) and ECU500 million (about \$610 million - corresponding to 8% of revenues).¹⁰³ These results contrast with the fact that Oftel, the UK regulatory authority, following recent calculations, came to the conclusion that the cost of universal service was so low that it did not justify setting up a universal service mechanism at all. The difference can be explained to some extent by the fact that the studies cited did not take into account marketing benefits of being the provider of ubiquitous service coverage.

Given the lack of agreement on cost figures for universal service, the Commission only stipulates general cost calculation rules.¹⁰⁴ This is economically sound and provides a framework for a harmonized method of calculating cost of universal service in the EU. The cost equals the difference between the net cost for a provider operating with the universal service obligation and operating without the universal service obligation. Extra revenues to the supplier from additional utility (i.e. willingness to pay) which results from additional users connected under universal service obligations must be deducted from the cost of universal service. This additional revenue stems from the fact that the utility of all users increases since the additional connections increase the total number of reachable communication partners on the network. Costs and revenues should be forward looking, which ensures socially optimal incentives to invest in telecommunications infrastructure.

Funding of universal service

Member States have two options to finance universal service:¹⁰⁵ they can implement a system of supplementary charges which are levied on top of regular interconnection charges; and/or they can finance USO through a universal service fund.

Supplementary charges have the advantage of creating less administrative overhead than a universal service fund. The disadvantage is that the incumbent operator covers part of its cost through subsidies which it receives from its competitors. As a result, it has little incentive to lower its costs. Furthermore, supplementary charges are based on the incumbent operator's own cost calculations, and the operator therefore has a strong incentive to overstate these costs.

A universal service fund overcomes the inefficiencies of supplementary charges. It ensures that incumbent and new operators can be treated equally. The cost of USO becomes more transparent, allowing the regulator to refine the methodology of cost calculation of USO over time and ensuring that it increasingly reflects the real USO cost. In line with this analysis, the Commission prefers the solution of a universal service fund as the EU-wide method for financing USO.¹⁰⁶ However, the Member States refused to accept a common financing scheme,¹⁰⁷ and the Directive on Interconnection and Universal Service therefore leaves the choice of funding method to Member States. This raises the following risks:

The cost of universal service might be overstated in countries where supplementary

charges are used. As explained above, such a system is used in France and to some extent in Belgium and the Netherlands (see discussion below).

NRAs / incumbents could bundle supplementary universal service charges with interconnection charges in a non-transparent way. This can be illustrated using the examples of the Netherlands and Belgium. Both countries distinguish between interconnection charges for 'terminating access' and 'originating access'.¹⁰⁸ The Dutch and Belgian regulators approved charges proposed by the incumbents which are higher for originating access. Although not explicitly stated, this extra charge is no more than a supplementary access charge, lumped into the interconnection charge, whose purpose is to recover the local loop access deficit. Such non-transparent bundling can be interpreted as violation of the principle of transparency any system of supplementary charges must respect.¹⁰⁹ This example illustrates that new entrants can expect to be faced with cumbersome, non-transparent interconnection / universal service charges which vary between countries.

Diverging USO will impede the development of a harmonized EU market. The following overview illustrates the wide range of approaches to funding universal service in Europe at the time of writing. The UK has decided not to establish a mechanism for sharing the cost of USO between BT and competing operators, but will review the issue in 1999. In Germany, such a mechanism can be established if Deutsche Telekom announces that it wishes to discontinue the provision of universal service.¹¹⁰ France established in 1996 that the cost of universal service for 1997 was FF6 billion (about \$1 billion) and implemented a combined universal service fund / supplementary charge system to finance this cost. Belgium decided to dry-run calculations of universal service cost without charging the operators in a first phase. Most of the Member States with lower telephone penetration have yet to take a firm decision on the issue of universal service. Proposed legislation in several Member States tends to allow both universal service fund and supplementary charge systems.

This overview suggests growing divergence of USO. USO systems that vary between countries and are often non-transparent will act to some extent as entry barriers for cross-border operators and will increase market fragmentation.

Conclusions and Policy Recommendations

In this paper, we have analyzed the core telecommunications regulatory framework that has been put in place at EU level between the end of the 1980s and January 1998, the date of full liberalization in most EU Member States. We found that in a number of areas the EU regulatory framework does not optimally promote the achievement of the policy objectives defined in the introduction to this paper. The major inefficiencies identified are summarized below.

- Member States' resistance both against rapid liberalization of core telecommunications markets and against other socially desirable market structure interventions, such as separation of ownership of cable and telecommunications networks
- Member States' and incumbents' resistance against transparent and harmonized cost-accounting systems
- Member States' resistance against cost orientation and an EU-wide time schedule for re-balancing of long-distance and local tariffs
- Absence of effective control by the European Commission of excessive prices set by dominant operators, especially in the long-distance and international market
- Lack of clear guidelines at EU level as to: which operators have the right to obtain interconnection on the one hand and the obligation to provide interconnection on the other hand; and when an interconnection request is reasonable and has therefore to be met by operators with significant market power
- Lack of a catalog of EU-wide harmonized ex-ante conditions in interconnection negotiations
- The decision of some EU Member States to impose carrier selection on all operators, not only on operators with significant market power (which is what was proposed by the Commission), risks undermining socially desirable incentives to invest into local infrastructure
- NRAs' ability to limit the number of licenses on the grounds of scarcity of radio frequencies or numbering resources. This allows the NRA to unreasonably protect the incumbent or other favored operators
- NRAs' ability to issue individual licenses in the area of voice telephony, public telecommunications networks and networks involving radio frequencies or numbering resources. Member States had overruled the Commission's proposal to limit individual licenses to services involving radio frequencies. As a result, cumbersome individual license regimes, e.g. in voice telephony, risk to deter market entry
- Member States' resistance to an efficient system of EU-wide licenses
- The tendency among Member States to pursue broad definitions of universal service that lead to large financial burdens for entrants and do not conform to the Interconnection Directive

How can these deficiencies in the EU regulatory framework be overcome? Below we give policy recommendations addressing the main players in the regulation of EU telecommunications markets.

Member States

The major part of the identified inefficiencies are due to the fact that conservative Member States maintain a regulatory framework that protects national incumbents or other favored operators. The analysis showed for several regulatory areas that conservative Member States, imposing their view on the Council of the European Union, invoke the principle of subsidiarity to block initiatives by the European Commission that would implement a more competition-oriented regulatory framework. Moreover, regulatory measures introduced by the Commission, the Council and the European Parliament are often implemented belatedly and in an incomplete or minimalist manner by Member States.¹¹¹ Attempts by the Commission to raise public awareness about the poor implementation record meets strong Member State resistance.¹¹² The lack of effective EU level policy directives in the identified areas and the poor implementation record of Member States raises the risk that the development of a competitive market will be impeded and the historical fragmentation of EU cross-border telecommunications markets will remain and in some cases even increase.

An effective way to overcome conservative Member States' resistance to competition-oriented regulation is to transfer considerable responsibility from the NRAs to an EU-level regulator.¹¹³ This regulator could be situated within the Commission¹¹⁴ or established as an independent European Regulatory Authority (ERA) in telecommunications.¹¹⁵ The Commission will examine the need to set up an ERA as part of the EU Sector review in 1999. In order to gain support from the Member States for an ERA that is vested with the necessary statutory powers, the ERA should be established as a Commission of Member State NRA representatives. This would ensure that Member States keep sufficient control of the ERA's EU wide regulatory policies and that the NRAs' hands-on experience in national regulation is duly considered by the EU-level regulator.

Council

The policy of the Council of the European Union is constrained by the need to find political compromises between Member States. However, the Council also has a clear mandate to pursue the objectives of the EU.¹¹⁶ The Council should therefore support the attempts of the Commission to apply a more aggressive regulatory approach in order to overcome the above inefficiencies. Many measures proposed by the Commission in, for example, the areas of market entry liberalization, licensing, interconnection, etc., were blocked by the Council, which was thereby expressing the opinion of conservative Member States. The Council should strictly oppose Member States' efforts to block socially desirable policy measures. Furthermore, the Council should support the establishment of a European Regulatory Authority which would possess the necessary statutory powers to effectively regulate EU telecommunications markets.

European Commission

The European Commission directorates that are involved in telecommunications regulation are DGIV and DGXIII. Both entities are somewhat restricted in resources to deal effectively with regulatory policy issues. In DGIV, less than 20 experts were working on telecommunications regulatory issues at the end of 1997 (Directorate C),

and less than 40 in DGXIII (Directorates A1, A2 and A4).¹¹⁷ The small number of resources could explain, to some extent, the lack of clear guidelines which were observed in some areas, e.g. interconnection regulation. Furthermore, resource restrictions result in DGIV rarely acting on its own initiative, for example against violations of competition rules in telecommunications. This situation is inefficient, since DGIV has the authority as well as extensive regulatory experience to take on a proactive regulatory role.

Independently of resource restrictions, the Commission could adopt a more aggressive regulatory policy to promote competitive market structures. For example, DGIV never achieved effective control of excessive prices in telecommunications, since it did not have the political will to confront the resistance of conservative Member States to cost orientation of long-distance rates.

In summary, to overcome the deficiencies of EU level telecommunications regulation we recommend a combination of institutional reform (establishment of an ERA as a committee of NRAs, staffing up of DG IV), and a more proactive and competition oriented approach to regulatory policy by the Council and the European Commission. ⁵Taschdjian, M., 'Alternative Models of Telecommunications Policy: Services Competition versus Infrastructure Competition'. *Twenty-Fifth Annual Telecommunications Policy Research Conference*, Alexandria, September 27–29, 1997.

⁶It has been argued that the US long-distance market in the 1980s was characterized by technical inefficiencies in the form of over-capacities. Egan, B.L., US Telecommunications Deregulation, 'Implications for Industry Structure and Social Welfare'. *Telecommunications Policy*, December 1988, 332–343.

⁷In the USA, infrastructure-based entry was encouraged in the 1980s by a system of regulated longdistance tariffs that considerably exceeded cost. Profitability of entry was further increased by discounts on access charges which entrants had to pay the local telephone companies. Bolter, Walter, G., *Telecommunications Policy for the 1990s and Beyond*. M.E. Sharpe, Armonk, New York, 1990, 265. Brock, Gerald W., *The Telecommunications Industry*, Harvard Economic Studies, Harvard, 1981, 228–229. In the UK, since the beginning of the 90s the government has encouraged the construction of local access infrastructure by giving local operators certain commercial advantages. See Section 'Numbering Policy'.

⁸See section 'Interconnection'. Some countries, including Germany and Finland, additionally stipulate network unbundling as a means to maximize utilization of existing infrastructure.

⁹For an overview, see Perrucci, Antonio and Cimatoribus, Michela, 'Competition, convergence and asymmetry in telecommunications regulation', *Telecommunications Policy*, 1997, **21** (6), 493–512.

¹⁰Schankerman, Mark, 'Symmetric regulation for competitive telecommunications'. *Information Economics and Policy*, 1996, **8**, 5.

¹¹The Commission found that the exclusive distribution rights violated Art. 3 (f) EC Treaty that stipulates the construction of a competition-oriented economic system in the European Community.

¹²Commission of the European Communities, Directive of 16 May 1988 on competition in the markets in telecommunications equipment. *OJ L 131(88/301/EEC)*, 1988, Point 13, 75.

¹³European Court of Justice, Decision of 19 March 1991 - France against the Commission of the European Communities, *Case C* 202/88 (19.3.1991).

¹⁴See section 'Introducing Competition' for details.

¹⁵By imposing liberalization measures in telecommunications against Member States' will, DGIV risks to lose Member States' support for competition policy measures in other industry sectors. Furthermore, the Commissioner for Competition Policy risks his re-nomination by the Member States if he provokes a fundamental dissent.

¹⁶Art. 90 allows the Commission to abolish entry barriers as explained above. Art. 85 has been repeatedly used by the Commission to authorize or block operator alliances, including Global One, Unisource and Concert. Kiessling T. and Johnson G. *op cit* Ref 3.

¹Some Member States with less developed / very small networks have been granted additional implementation periods up to January 2001. See Section 'Introducing competition'.

²We have limited this paper to core issues. Excluded from the analysis are, for example, standardization policy in telecommunications and strategic alliances. For the latter subject, see Kiessling, T. and Johnson, G., Strategic Alliances in Telecommunications and Media – An Economic Analysis of Recent European Commission Decisions, in: McDonald, S., Madden, G. and Salamon, M., *Telecommunications & Socio-Economic Development*, Elsevier Science B.V., 1998.

³This set of core objectives is reflected in a number of European Commission policy documents. For example Commission of the European Communities, Green Paper on the Development of the Common Market for Telecommunications Services and Equipment. *COM(87) 290 final*, 30 June 1987, Summary Report.

⁴Currently, the main EU level regulatory authority is the European Commission – this could be supplemented in the future by a European Regulatory Authority (ERA). See section 'Conclusions and Policy Recommendations'.

¹⁷Council of the European Union, Council Directive of 5 June 1992, for the introduction of open network provision for leased lines. OJ L 165 (92/44/EC), 1992.

¹⁸Council of the European Union, Council Directive of 13 December 1995 on the application of open network provision (ONP) to voice telephony. *OJ L 321/6 (95/62/EC)*, 1995.

¹⁹European Parliament and Council of the European Union, 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 L 199/32 (97/33/EC, 26.7.97)*, 1997.

²⁰European Parliament and Council of the European Union, Directive 97/13/EC of 10 April 1997 on a common framework for general authorizations and individual licenses in the field of telecommunications services. *OJ L 117/15 (97/13/EC, 7.5.97),* 1997.

²¹The European Parliament is taking an increasingly active role in telecommunications policy making, based on the co-decision procedure with the European Council which was introduced by the Maastricht Treaty on the European Union in 1992.

²²Council of the European Union, Directive of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision. *OJ L* 192/1 (90/387/EEC, 24.07.90), 1990. Furthermore, the Council in the late 1980s and 1990s has passed important regulation in the area of Trans-European Networks and subsidy programs (RACE and ACTS programs).

²³European Parliament and Council of the European Union *op cit* Ref 20.

²⁴European Parliament and Council of the European Union *op cit* Ref 19.

²⁵Analysys, *Network Europe: Telecoms Policy to 2000*. Analysys Publications, Cambridge, 1994, 8f.
²⁶Commission of the European Communities *op cit*, Ref 3, Summary Report.

²⁷Garfinkel, Lawrence, 'The growth of competition in the US long-distance industry'. *Telecommunications Policy*, July 1993, 324.

²⁸Brock, Gerald W. op cit Ref 7, 227.

²⁹Naoe, Shigehiko, 'Japan's telecommunications industry'. *Telecommunications Policy*, 1994, **18** (8), 651–657.

³⁰Commission of the European Communities, Directive of 28 June 1990 on competition in the markets for telecommunications services. *OJ L 192/10 (90/388/EEC)*, 1990.

³¹Examples include services which contain a voice service element, but are not voice telephony as narrowly defined by the Services Directive, for example voice to closed user groups, videotelephony or videoconferencing. In the early 1990s, many Member States still maintained exclusive rights for the provision of such services.

³²Commission of the European Communities, Directive 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 liberalized telecommunications services. OJ L 256 (95/51/EC), 1995.

³³Commission of the European Communities, Directive of 13 March 1996 amending Directive 90/388/EEC with regard to the implementation of full competition in telecommunications markets. *OJ L 74/13 (96/19/EC)*, 1996, Art. 1.

³⁴Commission of the European Communities, Decision of 4 October 1995 - GSM radiotelephony services in Italy. *OJ L 280/49 (23.11.1995)*.

³⁵Commission of the European Communities, 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* (96/2/EC), 1996.

³⁶Commission of the European Communities op cit Ref 33, Art. 1.

³⁷Telecom Markets, 1992, 25 June 1992, 1–2.

³⁸Schenker, Jennifer L., 'EC Gives In To Pressure'. *Communications Week International*, 5 April 1993.

³⁹Council of the European Union, 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 213/1 (93/C*

⁴⁰Commission of the European Communities *op cit* Ref 32.

⁴¹Arthur D. Little International, 'Cable Review – Study on the competition implications in telecommunications and multimedia markets of (a) joint provision of cable and telecoms networks by a single dominant operator and (b) restrictions on the use of telecommunications networks for the provision of cable television services', 1997.

⁴²Blau, J., 'Brussels U-turn provides boost for Telekom's cable strategy'. *Communications Week International*, 15 December 1997, 33.

⁴³Commission of the European Communities, Draft Directive amending Directive 90/388/EEC with regard to its effective application in a multimedia environment, by legally separating the provision of telecommunications and cable TV networks owned by a single operator. 16 December 1997.

⁴⁴An example is the Netherlands, where the Dutch PTT was obliged at the end of 1997 to divest its cable network activities.

⁴⁵Commission of the European Communities *op cit* Ref 23, 117/15.

⁴⁶For the fully-distributed cost approach, see Federal Communications Commission, Revision of Tariff (Telpack), 61 FCC 2d 587, 1976; Faulhaber, G.R., *Telecommunications in Turmoil*. Ballinger, Cambridge, Massachusetts, 1987, 51–52. For the incremental cost approach, see Schankerman, M., 'Symmetric regulation for competitive telecommunications' *op cit* Ref 10, 3–23.

⁴⁷In 1988, the Commission suggested for the first time that "the progressive implementation of the general principle that telecommunications tariffs should follow overall cost trends." Commission of the European Communities, Communication on the implementation of the Green Paper on the development of the common market for telecommunications services and equipment. *COM(88)48*, 2 February 1988.

⁴⁸For example, Council of the European Union *op cit* Ref 17, 165/32, Art. 10 (1); European Parliament and Council of the European Union *op cit* Ref 24, Art. 7.

⁴⁹The Commission has repeatedly acknowledged the usefulness of price caps and floors as a means to improve cost-orientation. Commission of the European Communities, Towards Cost Orientation and the Adjustment of Pricing Structures. Telecommunications Tariffs in the Community. Communication from the Commission, *SEC(92) 1050 final*, 1992, 16. Since Member States have different price levels to start with, in the beginning price caps could differ between countries. However, since the cost base of the underlying transmission and switching functions does not vary substantially, price caps should subsequently converge.

⁵⁰Council of the European Union, Council Directive on the application of open network provision (ONP) to voice telephony. Draft Common Position. *DGXIII/F/1/PS/cp3*, 14 May 1993.

⁵¹Austin, M.T., 'Europe's ONP Bargain. What's in it for the user?' *Telecommunications Policy*, 1994, **18**(2), 97–113.

⁵²Council of the European Union *op cit* Ref 48.

⁵³Council of the European Union *op cit* Ref 18, 321/6, Art 13 (2).

⁵⁴For example, in France supplementary remuneration over and above interconnection charges for historic tariff imbalances are only applicable until (at the latest) the end of 2000.

⁵⁵Commission of the European Communities, Guidelines on the application of EEC competition rules in the telecommunications sector. *OJ 233 (91/C 233/02),* 1991, 2–26. Art. 86 prohibits abuses by undertakings of a dominant position within the common market.

⁵⁶Commission of the European Communities *op cit* Ref 55, section V., 85. Art. 85 prohibits agreements between undertakings which have as their objective or effect the prevention or distortion of competition within the common market.

⁵⁷Amory, B., Le droit des télécoms: une Europe à deux vitesses. *Forum du Droit et des Affaires*, 1994, Paris.

⁵⁸Torres, A., 'Commission queries telecoms operators' prices in GEN deal'. *Reuters news*, 4 May 1995.

⁵⁹Commission of the European Communities, 'Commission services clear the Global European

^{213/01), 1993.}

Network agreement'. Press Release IP/97/242.

⁶⁶The European Parliament and the Council of the European Union, Common Position (EC) No 34/96 adopted by the Council on 18 June 1996 with a view to adopting Directive 96/.../EC of the European Parliament and of the Council of the European Union on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of open network provision (ONP). *OJ C 220/13 (96/C 220/03, 29.7.1996)*, 1996.

⁶⁷The European Parliament and the Council of the European Union *op cit* Ref 24.

⁶⁸The long-distance operator is only granted the right to special access by the Voice Telephony Directive (Ref 53). Special access is not clearly defined at this time, but gives the requesting party the opportunity to obtain the specific access conditions it needs as long as its request is 'reasonable'.

⁶⁹The European Parliament and the Council of the European Union *op cit* Ref 24, Art. 4 (2) and Annex 1.

⁷⁰The Commission has not defined if the market share is to be measured in revenue or volume, e.g. traffic minutes.

⁷¹Art. 4(2) stipulates that all reasonable requests for network access must be met and Art. 6 contains a non-discrimination requirement.

⁷²Oftel, Identification of significant market power for the purposes of the EU Interconnection Directive, *http://www.oftel.gov.uk/competition-/smpi1197.htm*, November 1997.

⁷³Only recently has the Commission attempted to impose the actual interconnection prices in the form of EU-wide benchmark prices. Commission of the European Communities, Commission Recommendation on Interconnection in a liberalised telecommunications market. Part 1 – Interconnection Pricing. 15 October 1997, 24 and 31. See also Public Network, EC Watch, 20 October 1997.

⁷⁴Analysys (1996), 1998 – A New Era for EU Telecoms Regulation. Analysys Publications, Cambridge, 1996, 48.

⁷⁵WIK and European-American Center for Policy Analysis, *Network Interconnection in the Domain of ONP*. Study for DGXIII of the European Commission, Final Report, November 1994, 30f.

⁷⁶The European Parliament and the Council of the European Union *op cit* Ref 24, Art. 7, 5 and Annex VII.

⁷⁷See for example France Telecom, *Services d'Interconnexion*. Catalogue de France Télécom, April 1997.

⁷⁸WIK and European-American Center for Policy Analysis op cit Ref 75, Recommendation 19, 35.

⁷⁹The European Parliament and the Council of the European Union *op cit* Ref 24, Preamble, (10). The recommendation to set interconnection tariffs according to long-run average incremental cost is restricted to operators with significant market power, since competitive operators have an incentive to do so anyway.

⁸⁰Commission of the European Communities *op cit* Ref 73, 24 and 31.

⁸¹Commission of the European Communities, Towards a European numbering environment, COM

⁶⁰Süddeutsche Zeitung of 20/21 April 1991.

⁶¹Sir Leon Brittan, EC Commissioner responsible for competition, *Communications Week International*, 15 October 1990, 8.

⁶²In the case of an international telephone call, only the operator in the country where the call originates collects money from the customer. This operator then compensates its counterpart in the country of destination for the delivery of the call to the addressee.

⁶³Amory, B., 'Telecommunications in the European Communities: The New Regulatory Framework. University of Namur'. Unpublished manuscript, 1991, 12.

⁶⁴Molony, D., 'Accounting rate battle hots up as EC plans to intervene'. *Communications Week International*, 24 November 1997, 1 and 42.

⁶⁵European Commission, 'Settlement reached with Belgacom on the publication of telephone directories – ITT withdraws complaint'. *Press Release IP/97/292*, 11 April 1997.

(96) 590, 20 November 1996.

⁹¹European Parliament and Council of the European Union *op cit* Ref 23, Art. 2 and Art. 3.

⁹²However, as noted above, any limitation of the number of licenses on the grounds of scarce frequencies and numbering resources have to be critically evaluated.

⁹³The European Parliament and the Council of the European Union op cit Ref 23, Section IV.

⁹⁴Commission of the European Communities, Proposal for a European Parliament and Council Directive on a Common Framework for general authorisations and individual licences in the field of telecommunications services. COM (95) 545, 14 November 1995.

⁹⁵Commission of the European Communities, Proposal for a Council Directive on the mutual recognition of licences and other national authorisations to operate telecommunications services, including the establishment of a Single Community Telecommunications Licence and the setting up of a Community Telecoms Committee. COM(92)254, 25 September 1992.

⁹⁶Analysys *op cit* Ref 25, 33–34.

⁹⁷Commission of the European Communities *op cit* Ref 33.

⁹⁸European Parliament and Council of the European Union op cit Ref 19.

⁹⁹Common Position (EC) No 27/97 adopted by the Council on 9 June 1997 with a view to adopting Directive 97/ /EC of the European Parliament and of the Council on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment, OJ C 234, 9.6.1997.

¹⁰⁰Commission of the European Communities, Green Paper on the Liberalisation of Telecommunications Infrastructure and Cable Television Networks, Part II. COM(94)682 final, 25 January 1995.

¹⁰¹European Parliament and Council of the European Union op cit Ref 19, Art. 5 (1).

¹⁰²Commission of the European Communities, Communication from the Commission on assessment criteria for national schemes for the costing and financing of universal service in telecommunications and guidelines for the Member States on operation of such schemes. COM(96) 608 final, 1996, 7. ¹⁰³Analysys op cit Ref 74, chapter 3.4.2.

¹⁰⁴European Parliament and Council of the European Union *op cit* Ref 19, Annex 3.

¹⁰⁵European Parliament and Council of the European Union op cit Ref 19, Art. 5 (2).

¹⁰⁶Commission of the European Communities op cit Ref 100, 85.

¹⁰⁷There are indications that particularly the more advanced Member States are concerned that such a universal service fund would become a new permanent transfer mechanism which obliges them to channel subsidies to less advanced countries.

¹⁰⁸The following scenarios illustrate the difference. In both cases, the competing operator bills the customer. In the case of terminating access, a competing operator provides the access part of the

⁸²Commission of the European Communities, Common Position adopted by the Council with a view to adopting Directive 98/ /EC of the European Parliament and of the Council amending Directive 97/33/EC with regard to Operator Number Portability and Carrier Pre-Selection. Interinstitutional File No 97/0250 (COD), January 1998.

⁸³See section 'Introducing competition' for a list of such countries.

⁸⁴Commission of the European Communities op cit Ref 81, 29.

⁸⁵Molony, D, 'Oftel lobbies MEPs over equal access'. Communications Week International, 24 November 1997, 9.

⁸⁶Crandall, Robert W, After the Breakup. U.S. Telecommunications in a More Competitive Area. Brookings, Washington D.C., 1991, 61.

⁸⁷Kiessling, Thomas, 'Market structure, standardization and exploitation of demand and innovation potentials in Telecommunications'. Information Economics and Policy, 1998, forthcoming.

⁸⁸Such services are for example provided by COLT. COLT Webside, www.colt-telecom.com.

⁸⁹The European Parliament and the Council of the European Union op cit Ref 23.

⁹⁰Kruse, Jörn, 'Access to the frequency spectrum'. Ernst-Joachim Mestmäcker (ed.), Kommunikation ohne Monopole II. Nomos, Baden-Baden, 1995, 449-472.

customer connection, interconnects to a predefined interconnection point on the incumbents' network, and pays the incumbent for terminating the call. In the case of originating access, the incumbent provides the access and interconnects to the operator's long-distance network who pays for the access.

¹⁰⁹ Commission of the European Communities *op cit* Ref 102, 16.

¹¹⁰WIK, Costing and Financing Universal Service Obligations in a Competitive Telecommunications Environment in the European Union. Study for DGXIII of the European Commission. Bad Honnef, October 1997, Executive Summary, 3.

¹¹¹Commission of the European Communities, Communication by the Commission to the European Parliament and the Council on the Status and Implementation of Directive 90/388/EC on Competition in the Market for Telecommunications Services. *COM 95/113*, 4 April 1995.

¹¹²This can be illustrated by the draft process of Commission Communication COM 95/113 (see Ref 111) that evaluates the Member State implementation record of EU level policy measures in telecommunications. Between the first drafts circulated in 1992 and the final version issued in 1995, most of the Commission's findings of unsatisfactory implementation of directives has been removed from the Communication as a result of Member States' resistance.

¹¹³This viewpoint has been expressed by Commission officials and policy observers alike. Public Network Europe, EU regulation: 'Judgement day approaches'. *Public Network Europe*, 1997, **7**(11), 32; Espicom, *European Telecoms Regulation, Leveling the playing field.* Espicom Business Intelligence Publications Limited, London, 1997, 48.

¹¹⁴For example in DGIV or in DGXIII. None of these DGs currently has an explicit mandate to act as an EU-level telecommunications regulator, DGIV being responsible for Competition Policy and DGXIII's role essentially being limited to the production of the regulatory core directives in telecommunications.

¹¹⁵The latter has repeatedly been called for since the beginning of the 1990s. Mansell, R., *Trans-European Telecommunication: User Perspectives on the Prospects and Problems*. European Network for Communication & Information Perspectives, Montpellier, 1993. WIK and European-American Center for Policy Analysis *op cit* Ref 75. Public Network Europe *op cit* Ref 113, 32.

¹¹⁶European Communities, *Treaty Establishing the European Community as Amended by Subsequent Treaties*, Rome, 25 March, 1957, Art. 2 in conjunction with Art. 4.

¹¹⁷In contrast, at the same time the Federal Communications Commission in the USA had between 200 and 250 staff working in the area of federal telecommunications regulation (this estimation includes the Common Carriers Bureau, the International Bureau and the Office for Plans and Policy).