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# EU TELECOMMUNICATIONS LAW

– its development and relevance in the light of  
converging fixed and mobile services

by

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# ABSTRACT

This work considers the legal fundamentals of EC telecommunications law.

The liberalization process in the telecommunications sector was mainly developed by three important Court of Justice cases. Firstly, the British Telecommunications case<sup>1</sup> was an early example of the application of competition rules in the telecommunications sector. Secondly, the Tetra Pak case<sup>2</sup> answered the question whether competition rules can be used to restrain anticompetitive practices in a particular market or market segment. The Court found that Tetra Pak was “in a situation comparable to that of holding a dominant position on the markets in question as a whole”. In the literature, this is referred to as Associated Market Dominance. Thirdly, the Oscar Bronner v. Mediaprint<sup>3</sup> case examined the essential facility doctrine, and that ruling, though restrictive, suggests that the doctrine may still be of relevance in the telecommunications field. In particular, the case showed that it is likely that an operator with strength on a related market (a mobile market compared to a fixed market) can be found to have control of an essential facility to which access is needed. In particular, incumbent fixed operators, which have benefited from a monopoly regime and its network, funded by the state through taxes, can be considered to control an essential facility.

The study examines EC telecommunications law on its way to full liberalization, from the 1987 Green Paper to the fully liberalized market, which was in place in 1998. The considerable achievement over this ten-year period must be acknowledged. It is also shown how Article 86 EC was used by the Commission to force the liberalization process.

The conclusion is drawn that “enforcement is the key to success”, with some consideration being given to the energy and postal services. Part I ends with a more practical discussion of interconnection, which is considered to be the key element of Community telecommunications policy.

In addition, the study examines consumer expectations in the converged fixed/mobile market. It shows that the majority of customers in the telecommunications market will actually subscribe to some form of converged service and that the regulatory regime for that kind of service needs, therefore, to be carefully tailored to this new environment. As a result, the distinction between fixed and mobile will be less clear, and this requires that the regulatory framework adopts a consistent approach towards the two markets.

The study further notes that given the complexity of the sector, consumer protection authorities seem to be willing to let specialist regulators handle the problems. It also discusses the possibility of applying competition rules in the area by, firstly, discussing the level of competition in the market for services and, secondly, the desirability of a market where operators and providers are encouraged to meet the needs of the customers in order to win their business. It continues by discussing the changeover from sector-specific regulation to the application of competition rules, with a special emphasis on significant market power. It also shows that the Commission needs to balance against the application of subsidiarity, the need for greater certainty, as the scope of the relevant product and service markets vary among the different member states.

Finally, the study argues that conversion to reliance on competition rules is dependant on the degree to which competition law can acquire the analytical tools to deal with the technical and commercial aspects of convergence in the field of mobile markets.

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<sup>1</sup> Case 41/83, *Italy v. Commission* [1984] ECR 873 (*British Telecommunications case*).

<sup>2</sup> Case T-83/91 *Tetra Pak v. The Commission* [1994] ECR-I-755; on appeal Case C-333/94P, *Tetra Pak International SA v. The Commission* [1996] ECR I-5951.

<sup>3</sup> Case C-7/97, *Oscar Bronner vs. Mediaprint Zeitungs-und Zeitschriftenverlag* [1998] ECR-I-7791.

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Thesis submitted for the degree of Doctor, Law Faculty.

I hereby declare that, except where otherwise stated, the research recorded in this thesis and the thesis itself was composed and originated entirely by myself at the Europa Institute, The Edinburgh Law School, Old College, the University of Edinburgh.

Nils H. Abrahamsson

*for my Children*

*Anna-Frida*

*Anna-Sofia*

*Nils-Filip*

*Anna-Linnea*

*For their loving support*



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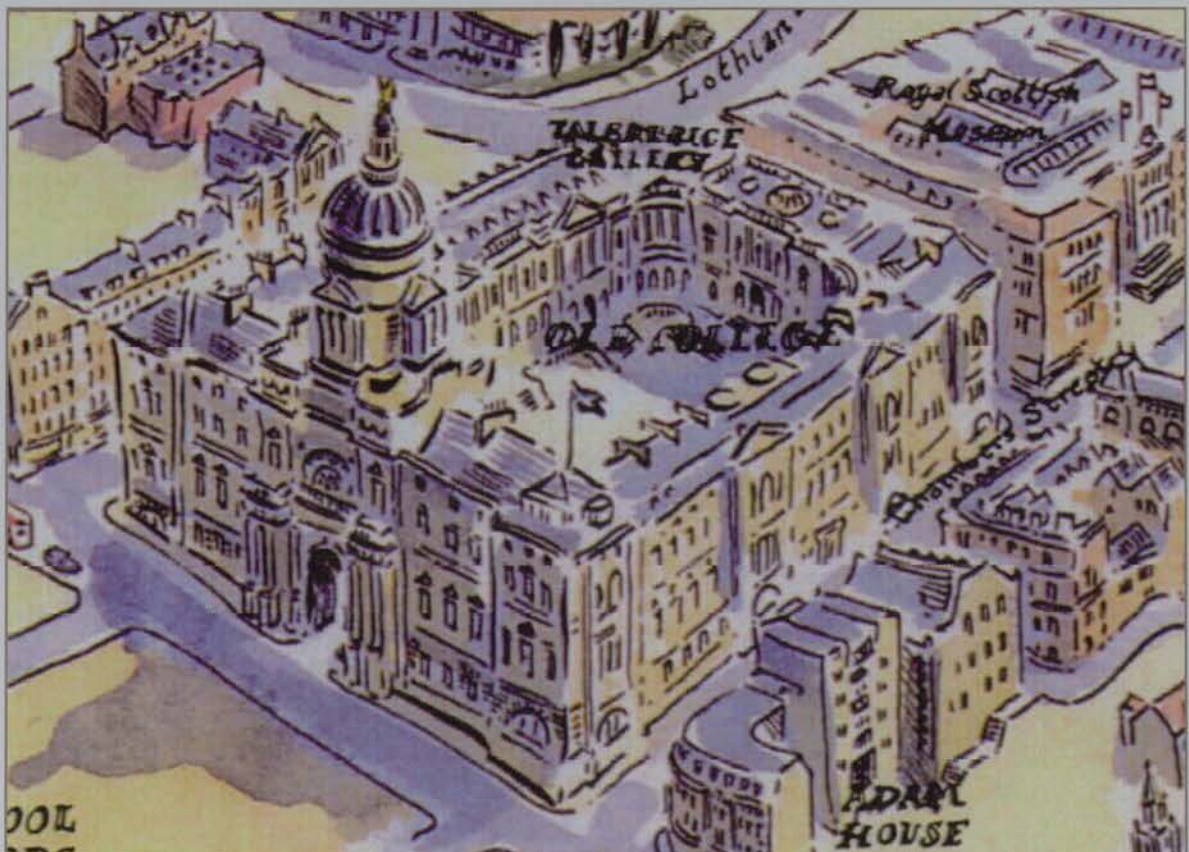
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## Acknowledgements

Staying at a university to write a thesis in telecommunications law might seem like a strange thing to do, when telecom lawyers are in demand in the private sector, has been said before. It is, however, very refreshing and very challenging to be in the academic world, where references, footnotes, and sources are of vital importance and where deadlines and timeframes seem to be of minor importance.

I have enjoyed my time at the University of Edinburgh very much, and I have found a very friendly and welcoming environment. The “Banana Room” will forever stay in my memory as my ground floor office. I have had a wonderful time in Scotland.

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## **INTRODUCTION TO THE STUDY**

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The Commission published, in 1987, its Green Paper on telecommunications<sup>1</sup> seeking to liberalize the market for telecommunications services and equipment, which were then exclusive rights of national telecommunications administrations. The Green Paper marked the point of departure for liberalization of the telecommunications markets and for EC legislation in the telecommunications field to improve and maintain competition in one of the most dynamic markets of the Community.

Within the regulatory framework adopted by the EC, the fixed and mobile sectors are treated as separate markets, with different regulatory requirements applying to each sector, admittedly, sometimes overlapping. A central objective of this framework is to imitate competition by the introduction of asymmetric *ex ante* regulation, which is meant to force operators with significant market power to undertake a number of obligations with regard to new entrants and consumers. *Ex post*, competition rules apply in parallel to this sector specific regulation as a corrective to any abusive practices.

This study will focus particularly on the challenges raised by the increasingly competitive market situation in telecommunications. Two significant aspects will be looked at:

- ◆ The level of sector specific European Community regulation that exists compared to the general consumer protection legislation in force in the Member States.
- ◆ Whether it is appropriate to continue to regulate the fixed and mobile services separately.

Convergence in this sector (the merging of fixed/mobile communications services into an integrated service package, where the consumer is offered both fixed and mobile services, using one terminal, one number, and receiving one bill) has been taking place over the last ten years with mergers, joint ventures, and alliances among some of the giants in the different sectors. Only recently have the converging services been offered commercially.

This study will address, therefore, whether there is a need for telecommunications specific consumer protection regulation, whether the regulatory framework should differentiate between voice and other services, and whether the regulatory obligations should be technologically neutral (regarding the provision of networks and services using fixed/mobile technologies and Internet telephony).

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<sup>1</sup> European Commission. (COM 87/290 final).

The study consists of three parts (apart from the Appendices):

Part I provides an introduction to the telecommunications sector, followed by a discussion of the origins of liberalization of the telecommunications market. This introduction describes developments in the telecommunications sector to date. Chapter 1 sets the scene for the study, beginning with the origin of liberalization. Chapter 2 considers the Open Network Provision Framework, which leads up to a discussion of the interconnection environment in Chapter 3.

Part II is intended to give an overview of the relevant market and of consumer drivers of fixed/mobile convergence. In chapter 4 a description of the increasing demand for mobile services is provided, as well as a discussion of the increasing utility of mobile services, the falling price of mobile services, emerging data mobile technologies, and a short review of the current market developments.

Part III introduces the regulatory and competition law challenges of fixed/mobile convergence. Chapter 5 focuses particularly on regulatory requirements of converged services and the differences between fixed and mobile sectors. Chapter 6 deals with the specific issues related to fixed and mobile convergence and considers the extent to which consumer expectations affect regulatory options and market entry issues (access to networks).

The conclusion sets out a proposed regulatory model, which seeks to identify relevant markets and how market power should be measured in a fixed/mobile converged environment. It concludes with a discussion of key elements of this preferred regulatory environment.

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**INTRODUCTION TO THE TELECOMMUNICATIONS  
SECTOR**

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This chapter gives an overview of the development of the telecommunications sector to date, describes briefly the liberalization and the harmonization of the European market, and considers whether there actually is a distinctive difference between the liberalization and the harmonization directives in the telecommunications sector<sup>2</sup>. This introduction is intended to provide a useful background to the study<sup>3</sup>.

Since 1 January 1998, the telecommunications markets have been fully liberalized in most of the European Union. The telecommunications regulatory process in the European Union (EU) should be seen as part of the wider process of the economic integration of Europe initiated by the Treaty of Rome<sup>4</sup>. This process was accelerated through the European Community's internal market programme<sup>5</sup>, which since the mid-1980s has provided a firm basis *inter alia* for the development of a common regulatory framework for the telecommunications sector. The broader political framework of the Maastricht Treaty, the Treaty on European Union, which entered into force in November 1993, has added an important new element to the legal basis for European integration in the area of telecommunications by means of its Title XII on Trans-European networks. The Amsterdam Treaty, which entered into force in 1998, does not have specific implications for telecommunications policy, but renumbered that section as Title XV.

The European telecommunications sector has historically been characterized by a strong public service monopoly tradition together with an industrial policy of creating

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<sup>2</sup> For an introduction to European Telecommunications Law see, for example: J. Bauer and C. Steinfeld, *Telecommunications initiatives of the European Communities*, Telecommunications in transition: Policies, Services and Perspectives in the European Community. C. Steinfeld and J. Bauer-Caby, eds. (1994); R. Ellger, *Telecommunications in Europe: Law and Policy of the European Community in a key Industrial Sector*, Singular Europe – Economy and Policy of the European Community in a key industrial sector. Adams, ed. (1992) 203 ff.; J.A.K. Huntley, *Recent Developments in European Telecommunications Law*, Computer Law and Practices. (1990) 49 ff.; S. Kamall, Telecommunications Policy (1996): 27 ff.; S. D. Lando, *The European Community's road to Telecommunications Deregulation*, Fordham Law Review (1994) 59 ff.; W. Sauter, *The Telecommunications Law in European Community*, ELR (1995) 92 ff.; and R. Schulte-Braucks, *Telecommunications Law and Policy in the European Community*, Fordham International Law Forum (1990) 234 ff.

<sup>3</sup> For political considerations leading up to the liberalization of the telecommunications sector see R. Kramer, *A faith that divides*, Competition Policy in European Telecommunications (1991), and W. Shepard, *Concepts of Competition and efficient policy in the Telecommunications Sector*, Telecommunications regulation today and tomorrow. Noam, ed. (1983), especially 79 ff.

<sup>4</sup> Founding Treaty on the European Economic Community, signed in 1957.

<sup>5</sup> Set up by the Single European Act, the first important reform of the Treaty of Rome, which entered into force on 01.07.1987.

“national champions”. This environment has created a strong national orientation for the sector, and consequently the loss of the potential opportunities of a Europe-wide market.

Within this context, a first phase of Community policy was initiated in 1984 with the aim to move the sector forward by establishing common lines of development. The most important aspects of this early phase were:

- ◆ standards development, to cope with the problem of national fragmentation created by different national specifications
- ◆ common research, under the form of shared programmes between operators and industry at the European level. The preparatory phase of the RACE<sup>6</sup> programme was started. Between 1987 and 1995, the main RACE programme was operational, under the second and third R&D framework programme. The ACTS<sup>7</sup> programme took over from RACE in 1994 under the fourth framework programme.
- ◆ special development programmes for the least developed regions of the European Union, in the context of structural funds. The STAR programme was adopted in 1986. The Telematics programme ran between 1992 and 1993.
- ◆ initial tentative steps towards common European positions in the international telecommunications arena

A second phase of Community policy was initiated in 1987 with the publication by the Commission of the Green Paper on the development of the common market for telecommunications services and equipment<sup>8</sup>. By issuing this Green Paper, the Commission started a Europe-wide debate on the telecommunications regulatory environment, with the basic aim to adapt it to the requirements of a single European Community market. The main direction of the common telecommunications policy has been set by the consultative process initiated by the Commission on the basis of the 1987 Green Paper and its successors, by key resolutions adopted by the Council and European Parliament, and by the European Court of Justice. The main steps since the 1987 Green Paper have been:

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<sup>6</sup> Research and Development in Advanced Communications Technologies in Europe.

<sup>7</sup> Advanced Communications Technology and Service.

<sup>8</sup> European Commission. Green Paper on the development of the common market for telecommunications services and equipment: Towards a dynamic European Economy . (COM 87/290 final). 30.07.1987.



- ◆ the Green Paper on Satellite Communications, published by the Commission in 1990<sup>9</sup>
- ◆ the Telecommunications Review of 1992<sup>10</sup>
- ◆ the Green Paper on Mobile and Personal Communications, published by the Commission in April 1994<sup>11</sup>
- ◆ the Green Paper on Infrastructure Liberalization published by the Commission in two parts, in October 1994 and January 1995<sup>12</sup>
- ◆ the Council Resolutions of June 1988, December 1991, July 1993, December 1994, June 1995, and September 1995<sup>13</sup>, which adopted the results of the consultative process carried out at each of the major steps
- ◆ the European Parliament Resolutions of April 1993, January 1993, April 1995, May 1995, and December 1996<sup>14</sup>, which gave Parliamentary support to the directions taken

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<sup>9</sup> European Commission. Green Paper on a common approach in the field of satellite communications in the European Community: Towards Europe-wide systems and services . (COM 90/490). 20.11.1990.

<sup>10</sup> European Commission. Review of the situation in the telecommunications services sector: Communication by the Commission . (SEC 92/1048). 21.10.1992.; European Commission. Communication to the Council and the European Parliament on the consultation on the review of the situation in the telecommunications services sector . (COM 93/159). 28.04.1993.

<sup>11</sup> European Commission. Green Paper on a common approach to mobile and personal communications in the European Union: Towards a personal communications environment . (COM 94/145). 27.04.1994.

<sup>12</sup> European Commission. Green Paper on the liberalization of telecommunications infrastructure and cable TV networks – Part I: Principle and Timetable . (COM 94/440). 25.10.1994.; European Commission. Green Paper on the liberalization of telecommunications infrastructure and cable TV networks - Part II: A common approach to the provision of infrastructure in the European Union . (COM 94/682). 25.01.1995.

<sup>13</sup> European Council. Resolution of 30 June 1988 on the development of the common market for telecommunications services and equipment up to 1992 . (88/C 257/01; OJC 257/1). 04.10.1988.; European Council. Resolution of 19 December 1991 on the development of the common market for satellite communications services and equipment . (92/C 8/01; OJC 8/1). 14.01.1992.; European Council. Resolution of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market . (93/C 213/01; OJC 213/1). 06.08.1993.; European Council. Resolution of 22 December 1994 on the principles and timetable for the liberalization of telecommunications infrastructures . (94/C 379/03; OJC 379/4). 31.12.1994.; European Council. Resolution of 29 June 1995 on the further development of the mobile and personal communications sector in the European Union . (95/C 188/02; OJC 188/3). 22.07.1995.; European Council. Resolution of 18 September 1995 on the implementation of the future regulatory framework for telecommunications . (95/C 258/01, OJC 258/1). 03.10.1995.

- ◆ the landmark rulings of the European Court of Justice in the British Telecom Case and on the Commission's use of Article 86 (ex-Article 90) of the EC Treaty in the sector<sup>15</sup>
- ◆ the Communication on Universal Service for Telecommunications in the perspective of a fully liberalized environment, published by the Commission in March 1996<sup>16</sup>
- ◆ the Commission's White Paper "Growth, Competitiveness and Employment"<sup>17</sup>, with the full political support of Council, and has placed the Union's telecommunications policy at the heart of the Union's general policy

As a follow-up to the White Paper, the Bangemann Group Report on "Europe and the global information society"<sup>18</sup> has confirmed the Union's telecommunications regulatory

<sup>14</sup> European Parliament. Resolution of 20 April 1993 on the Commission's 1992 review of the situation in the telecommunications services sector . (A3-0113/93; OJC 150/39). 31.05.1993.; European Parliament. Resolution of 19 January 1993 on a common approach in the field of satellite communications in the European Community . (A3-0424/92; OJC 42/30). 15.02.1993.; European Parliament. Resolution of 7 April 1995 on the Green Paper on the liberalization of telecommunications infrastructure and cable television networks - First part - principle and timetable . (A4-0063/95; OJC 109/310). 01.05.1995.; European Parliament. Resolution of 19 May 1995 on the Green Paper on the liberalization of telecommunications infrastructure and cable television networks - Part II: A common approach to the provision of infrastructure for telecommunications in the European Union . (A4-0111/95; OJC 151/479). 19.06.1995.; European Parliament. Resolution of 19 May 1995 on the Green Paper on a common approach in the field of mobile and personal communications in the European Union: Towards the personal communications environment. (COM 94/0145) . (C4-0061/94); European Commission. Communications to the European Parliament and the Council on the consultation on the Green Paper on mobile and personal communications. (COM 94/0492) . (C4-0046/95). (A4-0097/95; OJC 151/473). 19.06.1995); European Parliament. Resolution of 12 December 1996 on the Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on universal service for telecommunications in the perspective of a fully liberalized environment. (C4-0205/96).

<sup>15</sup> Case 41/83, *Italy v. Commission* [1984] ECR 873 (*British Telecommunications Case*). - where the Italian Government challenged a Commission decision under the competition rules taken against British Telecom. This case confirmed the full application of Treaty competition rules to the telecommunications sector.; Case 202/88, *France v. Commission* [1991] ECR I-1223. - This upheld European Commission Article 90 Directive on competition in the markets for telecommunications terminal equipment in all essential points .; Case 271/90, [1992] ECR I-5833 and Case 281/90, *Spain, Belgium, and Italy v. Commission* [1992] ECR I-5833. - This upheld the European Commission's Article 90 Directive on competition in the markets for telecommunications services in all essential points.

<sup>16</sup> European Commission. Communication to the European Parliament, the Council, the Economic and Social Committee, and the Committee of the Regions: Universal service for telecommunications in the perspective of a fully liberalized environment - an essential element of the information society . (COM 96/73 final). 13.03.1996. This Communication has now been complemented by two further Communications: one on costing and financing of universal service (European Commission. Communication of 27 November 1996 on assessment criteria for national schemes for the costing and financing of universal service in telecommunications and guidelines for the Member States on the operation of such schemes . (COM 96/608). 27.11.1996.); and the other in February 1998 assessing the current state of universal service in the EU (European Commission. First Monitoring Report on Universal Service in Telecommunications in the European Union . (COM 98/101). 25.02.1998).

<sup>17</sup> European Commission. White Paper on Growth, Competitiveness, Employment - The challenges and ways forward into the 21st century . (COM 93/700). 05.12.1993.

agenda. The report pleads for a break with the past, ending monopolies, and making rapid progress towards a fully liberalized environment. It advises the European Council on a strategic approach towards the information society in order “... to improve the quality of life of Europe’s citizens, the efficiency of our social and economic organization and to reinforce cohesion”. This strategic approach was delineated in the Commission’s Action Plan on Europe’s way to the Information Society adopted in 1994 and is still an underlying theme of the updated Action Plan adopted by the Commission in November 1996<sup>19</sup> and regularly updated.

Finally, reflections on the next phase of telecom policy, looking beyond 1998 when the Council agreed both to liberalize public voice telephony and accepted the Commission’s proposal to liberalize telecommunications infrastructure<sup>20</sup>, started with the Commission’s December 1997 Green Paper on the convergence of the telecommunications, media and information technology sectors, and the implications for regulation<sup>21</sup>. In November 1999 the Commission adopted a communication on the 1999 review of the telecommunications regulatory framework<sup>22</sup>, launching a public debate from which policy conclusions were drawn in spring 2000. At the same time, concrete proposals were made to adapt the existing rules to the needs of competitive, converging markets.

In a recently presented study by Pierre Larouche<sup>23</sup>, the development of the telecommunications sector is presented as four Models:

- ◆ the Starting Model (until 1990)
- ◆ the Regulatory Model of the 1987 Green Paper (1990-1996)
- ◆ the Transitional Model of the 1992 Review and the 1994 Green Paper (1996-1997)
- ◆ the Fully Liberalized Model (1998 - )

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<sup>18</sup> The Bangemann Group Report. Europe and the global information society - Recommendations to the European Council . 26.05.1994.

<sup>19</sup> European Commission. Communication on Europe's way to the Information Society . (COM 94/347 final). 17.07.1994.

<sup>20</sup> For a view of the liberalization model see the Infosoc presentation at [www.ispo.ccc.be](http://www.ispo.ccc.be). This presentation is regularly updated. Further, for a presentation of the fully liberalized model a recommendation is made to: P. Nihouls, *Droit européen des télécommunications*. (Bruxelles: Larcier in, 1999).

<sup>21</sup> European Commission. (COM 97/623). 03.12.1997.

<sup>22</sup> European Commission. (COM 99/539). 10.11.1999.

<sup>23</sup> P. Larouche, *Competition Law and Regulation*. (Oxford and Portland, Oregon: Hart Publishing, 2000).

The development is perhaps better viewed as an “evolution over time”<sup>24</sup>, rather than as “models”<sup>25</sup>. As mentioned earlier, the Council agreed pursuant to the 1992 Review, to liberalize public voice telephony by 1 January 1998, and after the consultation process on the 1994 Green Paper on the liberalization of telecommunications infrastructure and cable television networks<sup>26</sup>, the Council adopted the September 1995 Resolution<sup>27</sup> where the implementation timetable for the future regulatory framework was set out. Further, the 1995 Resolution listed, with timetables, the legislative measures that had to be adopted by 1 January 1998. According to the timetable, the Commission adopted Directive 96/19 on the basis of Article 86 (3). Admittedly, the revision of the ONP framework<sup>28</sup> was adopted much later than planned. Concerning universal service, which will be dealt with later in this study, it was not until 1996 that the Commission set out its vision on this matter<sup>29</sup>. Apart from these two exceptions, the timetable for the liberalization of the telecommunications sector has been followed with intervention developing over time as was intended in the 1992 Review.

Chapter 1 deals mainly with the regulatory aspects of telecommunications, covering only in a non-exhaustive way other areas related to telecommunications, such as developments regarding the Internet, convergence of telecommunications media and information technologies, and promotion activities.

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<sup>24</sup> Baker McKenzie, *Telecommunications Law in Europe*. J. Scherer, ed. (London: 1993).

<sup>25</sup> P. Ravaioli (Head of Unit, Telecommunications Market, Information Society) and P. Sandler (Legal Adviser on Telecommunications Regulatory issues in the Information Society), *Recent Developments in the field of Competition: The European Union and Telecommunications*. (Brussels: 1996).

<sup>26</sup> European Commission (COM 95/158 final). 03.05.1995.

<sup>27</sup> Resolution of 18 September 1995 on the implementation of the future regulatory framework for Telecommunications . (OJ C 258/1). 18.09.1995.

<sup>28</sup> Directive 97/51 of 6 October 1997 . (OJ L 295/23). 06.10.1997.; Directive 98/10 of 26 February 1998 . (OJ L 101/24). 26.02.1998. Adopted by the Council and the European Parliament on the basis of Article 95.

<sup>29</sup> European Commission. Universal Service for Telecommunications in the Perspective of a Fully Liberalized Environment . (COM 96/final). 13.03.1996.

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**PART I**

**THE DEVELOPMENT OF THE  
TELECOMMUNICATIONS SECTOR**

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**Chapter 1**

**The Origin of Liberalization**

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The liberalization of the telecommunications sector is based upon, firstly, the competition directive<sup>30</sup>, secondly, the ONP directive concerning the telecommunications services<sup>31</sup>, and, thirdly, the terminal equipment directive<sup>32</sup> concerning the liberalization of the terminal equipment market<sup>33</sup>. This chapter offers a background to the liberalization of the telecommunications market, starting with the British Telecommunications case and considers how this case relates to the EC Treaty rules. The discussion of the terminal equipment directive and the service directive at the end of the chapter should give a good understanding and basis for Chapter 3, the Open Network Provision Framework, which provides a legal framework for the medium to long term liberalization of the conditions for telecommunications services.

In the EC Treaty there is no mandate dealing with telecommunications, in contrast to areas such as transportation or the environment (Article 74-84 EC and Article 130R-T). The Treaty Competition rules:

- ◆ Article 81 (anti-competitive agreements)
- ◆ Article 82 (controlling monopoly abuse)
- ◆ Article 85 (regulation introducing competition)
- ◆ Article 86 (applying the Treaty rules to the public sector)

were at the beginning of the 1980s, only of limited application to regulated sectors such as telecommunications in Europe. The rules of competition of the EC Treaty<sup>34</sup> are contained in Articles 81 - 94. The rules of competition are designed to ensure that the objectives of the Treaty are effective and are not distorted<sup>35</sup>. The rules of competition are to be considered in the light of the Treaty provisions designed to establish a single market, in particular those

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<sup>30</sup> 90/338/EEC. (OJL 192/10). 24 07. 1990.

<sup>31</sup> 90/387/EEC. (OJL 192/01). 24 07. 1990.

<sup>32</sup> 88/301/EEC. (OJL 131/73). 27.05. 1988.

<sup>33</sup> For a descriptive article on this subject see: J. M. Naftel, 'The natural death of a natural Monopoly; Competition in EC Telecommunications after the Telecommunications Terminals Judgement', *European Competition Law Review* 3. (1993) 105.; and: S.M. Taylor, 'Article 90 and Telecommunications Monopolies', *European Competition Law Review* 6. (1994) 322. For a shorter analysis see: J. Scherer, ed., Introduction, *Telecommunications Laws in Europe*, by Baker and Mckenzie. (London: 1993).

<sup>34</sup> For the fundamental principles of the EC Treaty, see Articles 2 and 3.

<sup>35</sup> Case 85/76, *Hoffmann - La Roche & Co AB v. EC Commission* [1979] ECR 461.

establishing the freedom to provide services<sup>36</sup>. Without the rules of competition, numerous other provisions of the Treaty would be pointless.

Article 81:1 of the EC Treaty and Articles 36 and 53 in the Agreement on the European Economic Area address the problem of interference with the play of competition in the Common Market resulting from collusion between market participants over their business decisions<sup>37</sup>. The Articles (81:1 EC Treaty, 53 EEA Agreement) provide:

The following shall be prohibited as incompatible with the Common Market: all agreements between undertakings, decisions by associations of undertakings and concerted practices, which may effect trade between Member States (Contracting Parties) and which have as their object or effect the prevention, restriction or distortion of competition within the Common Market (territory covered by this Agreement), and in particular those which:

- ◆ directly or indirectly fix purchase or selling prices or any other trading conditions
- ◆ limit or control production, markets, technical development, or investment
- ◆ share markets or sources of supply

The Court of Justice has said “Article 81:1 seeks to achieve the same aim<sup>38</sup> on different levels; the maintenance of effective competition within the Common Market”<sup>39</sup>. The Commission has held that “Undertakings are in a dominant position when they have the power to behave independently...”<sup>40</sup>. The provisions of the Treaty, of course, determine the limit and the object of the Community’s competition activity in the telecommunications field. Secondary EC legislation is conceived, amended, and implemented taking account of the interpretation of EC Law by the European Court of Justice (ECJ). This case law has been useful in providing a framework for the Community legislation in such a very sensitive field as telecommunications. It should be remembered that it was through the ECJ case law that

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<sup>36</sup> Case 22/79, *Greenwich Film Production v. SACEM* [1979] ECR 3275.

<sup>37</sup> D. Wyatt and A. Dashwood, *The Substantive Law of the EC*. Oxford Press [1999] - regularly updated.

<sup>38</sup> As vertical supply arrangements foreclosing access to source of supply, horizontal cooperation agreements setting up certain facilities foreclosing or excluding access for third party (non-participating) competing undertakings, strategic alliances, separation agreements between undertakings with strong positions in up or downstream markets, agreements to create and operate trans-European networks.

<sup>39</sup> Case 6/72, *Enroemballage and Continental Can v. Commission* [1973] ECR 215 (*Continental Can Case*).

<sup>40</sup> Case 6/72, *Enroemballage and Continental Can v. Commission* [1973] ECR 215 (*Continental Can Case*).



the principle of full application of EC law to telecommunications was firmly established, concerning EC competition rules through the British Telecom case<sup>41</sup> and concerning the free movement of goods and services through the INNO case<sup>42</sup>. The ECJ has narrowed these limits but it was not until the 1985 decision in the British Telecommunications case<sup>43</sup>, that Articles 81 and 82 were enforced. Article 86 was first applied in 1991 in the terminal equipment case and the service directive case<sup>44</sup>.

There was immense commercial pressure for Community policy, due to the technological upheaval on a worldwide scale in telecommunications<sup>45</sup>. The Cecchini Report estimated that in 1982 the telecommunications equipment market was worth US \$17.5 billion of which terminal equipment accounted for 24%. The rest is made up of transmission equipment (13%) and central office equipment (47%). The Cecchini Report estimated further that standardization alone would lead to cost savings of over US \$1 billion in the telecom equipment market and US \$100 million in the terminal equipment market. The changes in the commercial world were principally:

- ◆ the convergence of information and Telecommunications technologies
- ◆ the emergence of optical fibre
- ◆ digitalization

These developments led to the creation of a multitude of enhanced telecommunications services. Both in Europe and in the United States new economic forces grew willing to provide these services in competition with the public operators, which in their Member States enjoyed monopolies over basic and other telephone services.

The European Commission responded to this by preparing a Green Paper on telecommunications<sup>46</sup>. This led to the adoption of the Community legislation<sup>47</sup> designed to

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<sup>41</sup> Case 41/83, *Italy v. Commission* [1985] ECR 873 (*British Telecommunications Case*).

<sup>42</sup> Case 18/88, *Regie des Télégraphes et des Téléphones v. GB-INNO-BM S.A* [1991] ECR 5941.

<sup>43</sup> ECJ Judgement of 20 March 1985, Case 41/83, *Italy v. Commission* [1984] ECR 873 (*British Telecommunications Case*).

<sup>44</sup> Case 202/88, *France v. Commission* [1991] ECR I-1223. (*The Terminal Equipment Case*); and Case 189, *Spain v. Commission* [1990] and Case 271/281, *Spain v. Commission* [1992] ECR I-5833 (*The Service Equipment Cases*).

<sup>45</sup> See European Commission. Cecchini Report on the Cost of Non-Europe. (Bruxelles: 1988).

<sup>46</sup> European Commission. Green Paper on the development of the common market for telecommunications services and equipment: Towards a dynamic European economy. (COM 87/290 final). 30.06.1987.

<sup>47</sup> For such details see footnote 52.

open the national Telecommunications markets both for terminal equipment and for the provision of enhanced services by providing a framework for competition through the abolition of statutory monopolies enjoyed by the telecommunications utilities in each Member State. More exactly to abolish the special and exclusive rights enjoyed by these utilities to ensure full application of the Treaty rules to public and private utilities. Before the Green Paper, it was generally thought that the telecommunications sector was an instance of natural monopoly<sup>48</sup> and it was in the British Telecommunications case<sup>49</sup>, which will be discussed in more detail in the next chapter, that the application of the competition rules<sup>50</sup> to the telecommunications sector has its roots. The action against British Telecom came at a time when a more detailed reflection of the aspects of the European Community's telecommunications sector was on track.

The speed of evolution of technology created pressure within the Community for the issue to be solved at a political level, as part of global review of the telecommunications policy in the European Union<sup>51</sup>. Not only the behaviour of statutory monopolies, but also their very existence, was an obstacle to the development of telecommunications in the European Community.

The debate focused around the Commission's 1987 Green Paper, which identified the bases of a common approach towards the telecommunications sector<sup>52</sup>. The Green Paper identified the need to allow full development of the supply of services and equipment, consequently making it possible for the industry to take full advantage of the technological and economic evolution of the world market. In addition, the Green Paper emphasized the

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<sup>48</sup> For a detailed discussion on this subject see: A. Ogus, Regulation – Legal Form and Economic Theory. (Oxford: Clarendon, 1994).

<sup>49</sup> Case 41/83, *Italy v. Commission* [1984] OJL 298/49 (*British Telecommunications Case*).

<sup>50</sup> For a brief overview see R. Whish, Competition Law. (London: Butterworths, 1993). 339 ff.

<sup>51</sup> The European Union was created by the Treaty on Political Union, which entered into force on 1 November 1993 (the Maastricht Treaty). That Treaty extended the areas of competence and cooperation of the European Member States, beyond a simple economic Community. From a legal standpoint, the European Community continues to exist within the Union, and the legal institutions and provisions in the field of telecommunications and competition remain those of the Community and the EC Treaty, rather than those of the European Union, which does not enjoy legal personality. References to the European Union refer to the political rather than the legal entity. The European Union groups the Member States of the European Community into a single economic area, sharing a variety of fields from foreign trade to aviation, environmental policy, research and development, and sex discrimination.

<sup>52</sup> For another view on this period see: Section II The Regulatory Model of the 1987 Green Paper (1990-1996) in P. Larouche, Competition Law and Regulation. (Oxford and Portland, Oregon: Hart Publishing) (2000), 3ff.

“role of telecommunications administrators in the provision of network infrastructure must be essentially safeguarded in order to allow them to fulfil their public service obligations”<sup>53</sup>.

On the issue of monopoly, the Green Paper accepted, within narrow limits<sup>54</sup>, that a combination of economic and legal considerations and the public interest led the Member States to reserve to one or more telecommunications administrations the right to provide the basic infrastructure and telecommunications services. Certain types of service could be opened to competition providing that competition did not undermine the ability of the operator to provide universal service. Greater emphasis was placed on the concept of universal service as a service and not as the provision of a physical network<sup>55</sup>.

The Green Paper was much welcomed in the telecommunications sector and the Commission set out a programme for its implementation on 9 February 1988, which was approved by the Council on 30 June 1988. Building on the Council Resolution and the Green Paper, two important directives<sup>56</sup> liberalizing, firstly, the supply of terminal equipment (the 1988 terminal equipment directive<sup>57</sup>) and, secondly the provision of telecommunications services (the 1990 service directive<sup>58</sup>) were passed.

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<sup>53</sup> European Commission. (COM 87/290 final). 30.06.1987. 177.

<sup>54</sup> European Commission. (COM 87 (290 final). 30.06.1987. 70-72, 74.

<sup>55</sup> European Commission 1992 Review of the situation in the telecommunications services sector . (SEC 92/1048 final). 21.10.1992.

<sup>56</sup> A Directive is a binding legal measure, which sets out specific goals and provisions which the Member States must implement into their own law by a specified time limit, usually 18 to 24 months after adoption. The Member States are generally free to decide how they implement the measure, through primary or secondary legislation or by administrative regulations. In most cases the power to adopt a Directive rests with the Council, acting on a proposal from the Commission. However, in the field of competition policy, Article 86 (3) of the Treaty gives the Commission the power to remedy structural competition problems by adopting Directives. Both the Terminal Equipment and the Services Directive were adopted under the Article 86 (3) procedure.

<sup>57</sup> European Commission. Directive 88/301 of 16 May 1988 on competition in the market for terminal equipment . (OJ L 131). 25.05.1988. 73.

<sup>58</sup> European Commission. Directive 90/388 of 28 June 1990 on competition in the markets for telecommunications services . (OJ L 192). 26.07.1990. 10.

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Chapter 1.1

British Telecommunications Case

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This chapter focuses on the British telecommunications case<sup>59</sup>, which is considered a landmark in the liberalization of the telecommunications sector. After the British telecommunications case, competition law was applicable to the sector, but very rarely used, mostly in cross-border telecommunications in the EC<sup>60</sup>. Before this, the Member States were in charge of their own telecommunications sector. The monopoly operator normally solved problems as they appeared. Any harmonization and coordination that might be necessary between Member States could proceed under Article 95 EC. As the Member States held a monopoly over the whole telecommunications sector, it was not necessary to use legislation. Recommendations were normally used<sup>61</sup>.

The British telecommunication case was the first example of the application of competition rules to the telecommunications sector. The initial decision of the Commission, applying EC competition rules, was that British Telecom was abusing its monopoly position in breach of Article 82. British telecommunications attempted in the early 1980s to curtail the activities of telex agencies in the United Kingdom. Some agencies that were using the most advanced technology were able to undercut, quite significantly, the tariffs charged by British Telecom for international telex transmissions.

British Telecom then introduced regulations which, complying with British Telecom international obligations within the International Telecommunication Union, strongly advised such agencies not to charge below the rates applied by British Telecom for such services. Because of complaints, the Commission issued the decision finding that British Telecom was abusing its dominant position over its United Kingdom network. A number of Member States challenged the Commission's decision because they were concerned about the application of the competition rules to a public sector service. Italy led the action and the

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<sup>59</sup> For an analysis of the Case 41/83, *Italy v. Commission* [1984] ECR 873 (*British Telecommunications Case*), see: J. Müller, Competition in the British telecommunications market: the impact of recent privatization/deregulation decisions, *Law and Economic Transborder*. Mestmäcker, ed. (1987). 279 ff.; and: Schultze-Braucks, European telecommunications law in the light of the British telecom judgement. (1986). 39 ff.

<sup>60</sup> See for instance: *Global Mobile Satellite Systems*, Press release (IP/95/549). 07.06.1995.; or: *Inmarsat-P*. Article 19(3), Notice of 15 November. (OJ C 304/6). 1995.; and the obvious British Telecommunications Case, Case 41/83, *Italy v. Commission* [1985] ECR 873. Decision of 10 December 1982. (OJ L 360/36). 1982.

<sup>61</sup> As an example: Recommendation 84/549 of 12 November 1984 concerning the implementation of harmonization in the field of telecommunications.

case established the benchmark for the future use of the competition rules in the telecommunications sector.

The ECJ found, firstly, that public entities were “undertakings” within the meaning of Articles 81 and 82 if they were carrying out an economic activity, irrespective of whether or not the undertaking itself was of a commercial nature. Italy claimed, however, that the British Telecom regulations, considered abusive by the Commission, constituted the exercise by British Telecom of regulatory power given to it under statute, which then could not be subject to competition rules. The Court did not say that the regulations were not of a regulatory nature, but that their content was the result of commercial activity. The terminal equipment and services directives, discussed in chapters 1.2 and 1.3, later solved this problem, which required the separation of regulatory and operational activities. Italy argued, thirdly, that statutory monopolies were compatible with the Treaty on the basis of Article 295 EC (“This Treaty shall in no way prejudice the rules in Member States governing the system of property ownership”), which stated that the effects of the Treaty are neutral as regards the Member States’ choice of property ownership, whether in the private or public sector. Member States were, according to Italy, free to create such monopolies; therefore, British Telecom had the right to protect its monopoly by preventing activities being carried on which were within its preserve. This argument was rejected by the Court, which stated that British Telecom monopoly rights concerned the provision of a network and not the services over that network, and, further, that British Telecom regulations aimed to restrict the activities of the agencies, not eliminate them, thus falling outside the scope of Italy’s argument. The question of the compatibility of British Telecom’s monopoly with the Treaty was dropped.

Finally, Italy argued that the challenged British Telecom regulations which, in the beginning had been introduced to restrict the activities of the international telex agencies, did not constitute an abuse under Article 82, considering they were made to prevent an improper use of the British Telecom network, over which it had been granted monopoly rights. It was claimed that the telex agencies wanted to bypass normal tariffs by using special equipment and advanced information technology to transmit a high volume of messages over a short period. The Court focused on the public interest in the use of new technology allowing fast message transmission, which could not be regarded as an improper use of the network, and thus rejected this argument as not being abusive under Article 82. The abusive nature of

British Telecom's behaviour lay in its attempt to prevent the use of new advanced technology, thereby limiting technical progress and the introduction of competition into a highly regulated market.

The objectives underlying Articles 81 and 82 serve as a corner stone for all Community legislation in the telecommunications sector and have been referred to in many of the Commissions decisions<sup>62</sup>. In the British telecommunications case, the ECJ left open the question of whether the statutory monopolies granted over telecommunications equipment services and infrastructure could be compatible with the Treaty. This issue created a tremendous pressure within the Community. It had to be solved at a political level as part of a global review of telecommunications policy in the EC. The very existence of statutory monopolies seemed to be a hurdle to the development of telecommunications in the European Community.

The debate focused in 1987 on the Commission's Green Paper on the Development of the Common Market for Telecommunications Services (the Green Paper)<sup>63</sup>. The Green Paper identified the basis of a common approach towards the telecommunications sector. It identified the necessity of allowing full development of supply of services and equipment and of making it possible for the industry to take full advantage of the new technological and economic evolution. Further, it emphasized "the role of Telecommunications Administrations in the provision of network infrastructure must be essentially safeguarded in order to allow them to fulfil their public service obligations"<sup>64</sup>.

On the monopoly issue, the Green Paper accepted a combination of legal and economic considerations, together with public interests, and allowed the Member States to preserve telecommunications administrations<sup>65</sup>, with the right to provide the basic network infrastructure and telecommunications services. It was decided that monopoly should be very narrowly defined<sup>66</sup>. The Green Paper accepted that a telecommunications

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<sup>62</sup> Case 85/86, *Rockwell/Iveco* [17.08.1983] OJ 1 224; Case 86/405, *Fibre Optics* [22.08.1986] OJ L 236/30; and *KSB/Gonlds/Lomva* [25.01.1991] OJ 1 19.

<sup>63</sup> European Commission. Green Paper on the development of the common market for telecommunications services and equipment: Towards a dynamic European economy. (COM 87/290 final). 30.06.1987.

<sup>64</sup> European Commission. (COM 87/ 290 final). 30.06.1987. 177.

<sup>65</sup> A government department with overall responsibility for telecommunications as well as the public telecommunications operator providing the network and services under that department's control.

<sup>66</sup> European Commission. (COM 87/290 final). 30.06.1987. 70-72/74.

administration must be able to draw on sufficient financial resources in order to operate a network that is public and has national coverage. This objective did not, however, justify monopoly rights over telecommunications services in the Member States; therefore, certain types of service could be open to competition, providing that competition did not undermine the ability of the operators to provide this universal service. Universal service is considered a service and not the provision of a physical network as a result of the 1992 review<sup>67</sup>. The Green Paper also indicated that the public operators should be allowed to compete in the liberalized services and terminal equipment markets. In order to prevent potential conflicts of interest and competition problems, the operational and regulatory functions of telecommunications administrations should be separated. The Green Paper was welcomed within the telecommunications sector, leaving the Commission to set out a work programme for its implementation on 9 February 1988<sup>68</sup>, which was approved by the Council on 30 June 1988<sup>69</sup>.

On the Council Resolution and the Green Paper were built two key directives. The first liberalized the supply of terminal equipment (the terminal equipment directive<sup>70</sup>), and the second concerned the provision of telecommunications services (the service directive<sup>71</sup>). To open the supply of terminal equipment to competition, the Commission adopted the terminal equipment directive under Article 86.3 EC in order to remove all the national monopoly rights enjoyed by the public operators in the Member States. Other legislative actions were also taken under Article 95<sup>72</sup>, designed to promote such terminal equipment and to develop harmonized European standards.

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<sup>67</sup> European Commission. 1992 Review of the Situation in the Telecommunications Services Sector . (SEC 92/1048 final). Brussels. 21.10.1992.

<sup>68</sup> European Commission. (COM 88/48 final).

<sup>69</sup> European Council. Resolution of 30 June 1988 on the Development of the Common Market for Telecommunications Services and Equipment up to 1992 . (OJ C 277).

<sup>70</sup> Terminal Equipment Directive: European Commission. Directive of 16 May 1988 on competition in the market for Terminal Equipment . (OJ L192). 27.05.88.

<sup>71</sup> Service Directive. Directive on competition on the Markets in Telecommunications Services . 90/388/EEC (OJ L192/10). 24.07.1990.

<sup>72</sup> European Parliament. Resolution of 23 November 1989 on competition in the telecommunications sector . (OJ C 323/118). 1989. - The European Parliament agreed with the Council that Article 95 EC would be the proper legal basis for all measures to achieve the goals of the 1987 Green Paper.



## Liberalization

By such landmark initiatives described above the Commission's Directorates-General (DG) for competition (formerly DG IV) and the Information Society Directorate General (formerly DG XIII) for telecommunications have been exercising a day-to-day oversight, establishing a slowly growing body of important decisions in the telecommunications sector. The need to provide a set of terms of reference for the growing number of telecommunications related cases led to the Commission's adoption of guidelines<sup>73</sup>.

The Commission's decisions define the conditions under which dominant telecommunications organizations may regroup themselves in new alliances with each other and with third parties without infringing the competition rules. Such new alliances were expected to play an important role in exploiting the coming liberalized market place which was in force at 1 January 1998. INFONET Services Corporation notified the first alliance for the provision of value-added network services to the Commission. INFONET is a company owned by five incumbent EC telecommunications organizations and six non-EC telecommunications organizations. The Commission's decision confirmed that even joint ventures among dominant telecommunications organizations will be cleared, provided certain conditions are fulfilled. Such conditions could be obligations by the Member States of the joint venture to avoid cross-subsidization and discrimination, as well as various recording and reporting obligations<sup>74</sup>.

The Commission took a similar approach to EIRPAGE, a joint venture between Board Telecom Eireann and MOTOROLA relating to a paging system in Ireland. This paging system was to be interconnected with the public telecommunications network<sup>75</sup>. The geographical scope was limited to Ireland, but even so the Commission concluded that it would have a considerable effect on trade. It was exemptible under 81 (3). The Commission accepted that the technological benefits for consumers created from the joint venture could not have been achieved as rapidly and to the same extent in the absence of the joint venture. In this case, EIRPAGE had undertaken to provide a service beyond the more profitable

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<sup>73</sup> Guidelines on the Application of EC Competition Rules in the Telecommunications Sector . (OJ C 233/02), 1991. 15.

<sup>74</sup> European Commission. (OJ C7). 11.101.1992.

<sup>75</sup> European Commission. Decision of 18 October 1991 . (OJ L 306). 07.11.1991.

urban areas and consumers would be guaranteed a choice because there would be competition at the agent's level. Further, the Board Telecom Eireann had given an undertaking ensuring fair market entry for third parties interested in interconnected paging, and both the parties undertook certain specified recording and reporting obligations.

In 1991, the Commission published guidelines<sup>76</sup> on the full application of EC competition rules (Articles 81 and 82 and the merger regulation). The guidelines are meant to clarify the application of the competition rules to the market participants in the telecommunications sector<sup>77</sup>. In a communication<sup>78</sup> between the European Electronics and Information Technology Industry and the European Commission, it was pointed out that the competition rules must be viewed "in the context of the special conditions of the Telecommunications sector and the overall Community Telecommunications policy will be taken into account in their application".

In several rulings<sup>79</sup> the ECJ ruled that Articles 81 and 82 of the Treaty concern the conduct of undertakings and not the laws of the Member States (by the intent of Article 5 (2), the Member States must not maintain in force any measures which could deprive those provisions of their effectiveness). The ECJ stated that such would be the case if a Member State were to require cartels or reinforce the effects thereof, or to encourage abuses by dominant undertakings. When this behaviour is imposed by a Member State measure, leaving no choice to the undertakings concerned, Article 86 may apply to the Member State involved. In such circumstances Articles 81 and 82 may also apply to the undertaking's behaviour, taking into account the constraints to which the undertakings are submitted by the mandatory Member State measure<sup>80</sup>. In addition, when the action or behaviour comes from the free choice of the undertakings involved, and the Member State has taken measures to encourage or has encouraged or strengthened the effects, Article 81 and/or Article 82

<sup>76</sup> Guidelines on the Application of EC competition rules in the telecommunications sector . (OJ C 233/02). 1991.

<sup>77</sup> Telecommunications embraces any transmission, emission, or reception of signs, signals, writing, images, and sounds, or intelligence of any nature by wire, radio, optical, and other electromagnetic systems. (Article 2 of WATTC Regulation of 9 December 1988).

<sup>78</sup> European Commission. The European Electronics and Information Technology Industry: State of Play, issues at stake and proposals for action . (SEC 91, 565). 03.04.1991.

<sup>79</sup> Case 229/83, *Leclerc / Gasoline* [1985] ECR 17; Case 299/83, *Leclerc / Books* [1985]; Cases 209 to 213/84, *Ministère public v. Asjes* [1986] ECR 1425; Case 311/ 85, *Vereniging van Vlaamse Reiskbureaus v. Sociale Dienst van de Plaatselijke en Gewestelijke Overheid diensten* [1987] ECR 3801.

<sup>80</sup> Guidelines on the Application of EC Competition rules in the telecommunications sector . (OJ C 233/ 02). 1991. 15.

apply to the undertaking's behaviour and Article 86 may apply to the Member State measure. This could be the case if the Member State has approved or legally endorsed the result of the undertaking's behaviour.

The guidelines and the Article 86 directives are intended to complement one another, to the extent that they cover the principles governing the application of the competition rules: Articles 81 and 82 on the one hand and Article 86 on the other. The text of Article 86 (2) reads:

Undertakings entrusted with the operation of services of general economic interest of having the character of a revenue-producing monopoly shall be subject to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or fact, of the particular tasks assigned to them. The development of trade must not be affected to such an extent as would be contrary to the interests of the Community<sup>81</sup>.

On the application of the competition rules to interconnection agreements in the telecommunications environment, one must note that there are four conditions required for the application of Article 86 (2). The undertaking concerned must have been entrusted with the operation of a service of general economic interest. Further, should the application of competition rules obstruct the performance of the service concerned, and then a balance must be made between the Community interest and the necessity of the beneficial results derived from exclusion of the application of the competition rules.

The obvious question concerning interconnection, concerns the possible application of Article 86 (2) to universal service obligations imposed on telecommunications organizations. There seems to be no problem with the application of the first two conditions. Universal service obligations are generally imposed on telecommunications organizations by a formal legislative or administrative act under national law, and universal services correspond to what the Court considers to be services of general economic interest. The conditions were set out in the *Corbeau* case<sup>82</sup> regarding postal services. The ECJ argued that it could not be disputed that the Belgian *Regie des Postes* was entrusted with a service of general economic interest consisting in the obligation to collect, carry, and distribute mail on behalf of all users

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<sup>81</sup> See Paragraph 84 of: Guidelines on the Application of EC Competition rules in the Telecommunications Sector. (OJ C 233/02). 06.09.1991.

<sup>82</sup> Case 320/91, *Continental Can v. Commission* [1991] ECR I-2533 (*The Continental Can Case*).

throughout the territory of the Member States concerned, at uniform tariffs and on similar quality conditions “irrespective of the specific situations of the degree of economic profitability of each individual operation”<sup>83</sup>.

In another case, the *Almelo*<sup>84</sup>, the ECJ further argued that the undertaking which had been given the task, through the grant of a non-exclusive concession governed by public law, of ensuring the supply of electricity in part of the national territory was entrusted with a service of general economic interest. The Court stated that the undertaking concerned had to ensure that throughout the territory in respect of which the concession was granted, all users, whether local distributors or end users, should receive uninterrupted supplies of electricity in sufficient quantities to meet demand at any given time, at uniform tariff rates and on terms which may not vary free in accordance with objective criteria applicable to all customers.

For the telecommunications sector, reference could be made to the *INNO*<sup>85</sup> case. In this judgement, the ECJ considered that the monopoly held by RTT (Belgian telecommunications organizations) for the establishment and operation of the Public Telecommunications Network constituted, at that stage of the development of the Community, a service of general economic interest within the meaning of Article 86 (2) of the Treaty. The Court referred to the fact that “such monopoly is intended to make a public telephone network available to users”<sup>86</sup>.

The third condition for the application of Article 86 (2) (that the application of the competition rules must obstruct the performance of the services concerned), as explained in the case law of the ECJ<sup>87</sup>, “essentially results in an economic test to be performed”. The Court said that restrictions on competition from other economic operators had to be allowed in so far as “they were necessary in order to enable the undertaking entrusted with the task of general interest to perform it”. In order to apply this test which was left to the national court, the Court stated that it was necessary to take into consideration the economic conditions in which the undertaking operates, in particular the costs which it has to bear and the legislation,

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<sup>83</sup> Case 320/91, *Continental Can v. Commission* [1991] ECR I-2533 (*The Continental Can Case*).

<sup>84</sup> Case 393/92, *Gemeente Almelo v. Commission* [1994] ECR 1477 (*The Almelo Case*).

<sup>85</sup> Case 18/88, *Regie des Télégraphes et des Téléphones v. GB-INNO-BM S.A.* [1991] ECR 5941.

<sup>86</sup> Case 18/88, *Regie des Télégraphes et des Téléphones v. GB-INNO-BM S.A.* [1991] ECR 5941.

<sup>87</sup> Case 393/92, *Gemeente Almelo v. Commission* [1994] ECR 1477 (*The Almelo Case*).

particularly the environment, to which it was subject. The Court was more explicit in the Corbeau<sup>88</sup> Case, with regard to the economic test to be performed for determining whether or not derogation from the application of the Treaty rules is warranted. The Court indicated in that case that it had to be determined whether the full application of the Treaty rules would compromise the economic equilibrium of the service of general economic interest performed by the undertaking entrusted with this service.

In a regulatory environment where the universal service obligations of the telecommunications organizations selected for such service provision is entirely financed by payments made out of a specific fund, it is hard to understand how there would still be place for invoking a derogation to the Treaty rules under Article 86 (2). The economic viability of the service of general economic interest could not be jeopardized by the application of the Treaty rules since it would be entirely financed through direct funding. If the universal service burden is not dealt with fully through a universal service fund, the arguments for invoking Article 86 (2) by the telecommunications organizations entrusted with the universal service appear to be much stronger.

The last condition for the application of Article 86 (2) involves a balancing of the requirements of the particular tasks entrusted to the undertakings concerned and the protection of the interests in the Community. This was analyzed in the Luxembourg v. Müller case<sup>89</sup> in 1971. This condition has not given rise, after the judgement in this case, to any important developments in the case law. It appears to be relatively clear that where certain restrictive practises by the telecommunications organizations, which are under the obligation of universal service, fulfil the other conditions of Article 86 (2) as outlined above, such practises would equally fulfil the last condition of this provision.

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<sup>88</sup> Case 320/91, *Continental Can v. Commission* [1991] ECR I-2533 (*The Continental Can Case*).

<sup>89</sup> Case 10/71, *Minister Public Luxembourg v. Muller* [1971] ECR 723 (*Port de Mertert*).

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**Chapter 1.2**

**The Terminal Equipment Directive**

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The terminal equipment directive removed the special and exclusive rights over terminal equipment (telephones, faxes.). The history behind this directive is interesting and is often referred to as “the compromise of December 1989”<sup>90</sup>. When the Commission ratified the directive, which removed the special and exclusive rights on the basis of Article 86 (3), this was challenged by a number of the Member States (France supported by Italy, Belgium, Germany, and Greece). This opposition would have been enough to block a proposal under Article 95 EC. In order to liberalize the telecommunications market in full, the Commission had to precede in the same way as with the liberalization of telecommunications services. This is why a draft directive<sup>91</sup> was adopted based on Article 86 (3) EC and at the same time a draft directive on ONP (Open Network Provision) was based on Article 95 EC. (A discussion of the relationship between directives adopted under Article 86 (3) (liberalization) and under Article 95 (harmonization) and the relevance of these terms is included at the end of Chapter 3.1).

Before enacting the terminal equipment directive, it was thought that the grant of special and exclusive rights to telecommunications operators was not as such incompatible with the EC Treaty. This view was based on the *Sacchi*<sup>92</sup> case of 1974.

As the background of the 1989 compromise has been discussed very thoroughly in the literature<sup>93</sup>, only the main focus of the disagreement between the Commission and the Council will be discussed: namely, basic data services. At that time, the late 1980s, the different Member States had different models for regulating the data communications sector. In the United Kingdom, the official policy was to leave it to the users to arrange for these services by buying it from private service providers (often referred to as the US Model)<sup>94</sup>. In other Member States, such as in France, a public service approach was taken and the services were entrusted to the PTO (telecommunications operators), granting them exclusive rights.

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<sup>90</sup> See for instance: C. Hacker, *Le compromis du 7 décembre 1989, Droit de l’informatique et des télécom* 73. (Council press release 196/89). 1990.

<sup>91</sup> See Bulletin EC 12-1988, paragraph 2.1.72 (the draft Service Directive).

<sup>92</sup> Case 155/73, *Sacchi v. Commission* [1974] ECR 409 (*The Sacchi Case*).

<sup>93</sup> See as examples: P. Ravaoli and H. Ungerer (Information Society Directorate), *Liberalization of European Telecommunications*. 1991.; and: S.M. Taylor, *Article 90 and Telecommunications Monopolies*. (ECLR 322 at 325-8). 1994.; and P. Larouche, *European Telecommunications Law*. (Oxford and Portland Oregon: Hart Publishing, 2000).

<sup>94</sup> For a description of the different models in the Member States P.A. David and Steinmullers, *Economics of combatility standards and competition in the Telecommunications sector*. (1994) can be recommended.

In Larouche's work "European Telecommunications Law", the UK model is described as "not very developed"<sup>95</sup>, which is difficult to understand, since the United Kingdom was the first of the Member States to fully liberalize the telecommunications market. With the Internet<sup>96</sup>, which the United Kingdom saw coming, the US model (with interconnection to private networks) seemed to be the right way to go, and the US model was retained and proved to be successful<sup>97</sup>.

The directive required equipment to be approved by an independent body and publication of all network technical specifications necessary to manufacture interconnecting equipment (Articles 5 and 6). It also required the termination of long term lease and maintenance contracts in force at the date of adoption of the directive (Article 6). This provision was however annulled by the ECJ<sup>98</sup>, in the Telecommunications Equipment Case, as the scope of Article 86 (3) is limited to Commission action against State measures that breach the competition rules, whereas the length of the contract was the result of a commercial agreement between the user and the telecommunications operator.

The directive is based on the presumption that a state monopoly over the manufacture for sale of terminal equipment would constitute a state measure in the sense of Article 86 of the Treaty, which is incompatible with EC Treaty provision which guarantees undisturbed competition, free trade in goods (Article 28), and free trade in service (Article 49). The directive presupposes anticompetitive effects from the creation of monopolies<sup>99</sup>. EC telecommunications monopolies required users to hire telephones and PABXs (for line connection), and thereby prevented them from buying their own terminal equipment. This is an example of abuse of a dominant position, identified in Article 82 (d).

The Member States responsibility was invoked through the combination of Articles 3 (f), 10, 82, and 86. The directive also stated a separation of regulatory from operational activities, in order to avoid the conflict of interests which would arise if the

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<sup>95</sup> 40 ff.

<sup>96</sup> For a good view of the history of Internet, see: All about the Internet: A brief history of the Internet, Federal Networking Council. Resolution 10/24/1995. This work can be downloaded from [www.isoc.org/internet/history/brief.html](http://www.isoc.org/internet/history/brief.html).

<sup>97</sup> In some Member States the discussion concerning basic data services and voice telephony concerned cream-skimming by new service providers.

<sup>98</sup> Case 202/88, *France v. Commission* [1991] ECR I-1223. 1226 ff. (*The Terminal Equipment Case*).

<sup>99</sup> For a discussion on the *Terminal Equipment Case*, Case 202/88, *France v. Commission* [1991] ECR I-1223 and a background study, see: K. Platteau, Article 90 EC Treaty after the Court Judgement in the *Telecommunications Terminal Equipment Case*. De Brandt van Hecke & Lacgac. (3 ECLR).



telecommunication operator should act as both a provider of a network and as an equipment supplier. The telecommunication operator would otherwise be in a position to approve competing equipment for connection to its network. In order to provide public access to the technical information necessary to open the terminal equipment market, the directive also provided for the Member States to publish their technical specifications and type-approval procedures for equipment.

Article 86 (3) was thus used to solve problems such as conflict of interest, and this was at the time very controversial. The article gives the Commission the power to ensure that the Member States comply with their obligations under Article 86 by means of either a decision or a directive. That the Commission chose a directive is of vital significance in the development of Article 86. It allowed the Commission to evade the necessity of Council approval (the political consensus was absent for such liberalization) and the Commission was using the competition rules to eliminate a statutory monopoly instead of regulate the manner in which it operated. The Member States contested the directive on the grounds of lack of competence. The case was brought before the ECJ and the Member States argued that the Commission was not empowered to limit or abolish exclusive rights. The Court delivered its judgement<sup>100</sup> in the Terminal Equipment Case and upheld the directive strengthened the Commission's endorsing powers.

The directive focused strongly on the technical progress in terminal technology as the reason for liberalization and the need for users to be allowed a free choice for the full benefit of such new technologies. As a consequence the directive was based on the hypothesis that a state monopoly over the manufacture of sale of terminal equipment constitutes a state measure, in the sense of Article 86, which is incompatible with the EC Treaty provisions which guarantee undistorted competition between Member States, free trade<sup>101</sup> in goods (“quantitative restrictions on imports and all measures having equivalent effect shall without prejudice to the following provisions, be prohibited between Member States”), and free trade

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<sup>100</sup> Case 202/88, *France v. Commission* [1991] ECJ I-1223 (*The Terminal Equipment Case*). See also: Cases 71, 281, 289/90, *Spain v. Commission* [1992] ECR I-5833 (*Service Equipment Case*). Directive 88/301 (the Terminal Equipment Directive) dealt with the liberalization of the telecommunications equipment market. The two cases are known for having confirmed the power of the Commission to order the removal of special and exclusive rights on the basis of Article 86(3) EC.

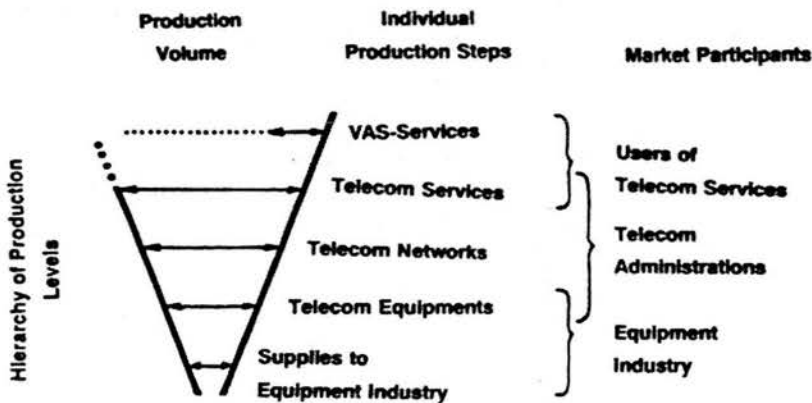
<sup>101</sup> Article 28 EC.

in service<sup>102</sup>, (“within the framework of the provisions set out below, restrictions on the freedom to provide services within the Community shall be progressively abolished during the transitional period in respect of nationals of the Member States who are established in a state of the Community other than that of the person for whom the service is intended”).

Another effect of increased competition in the telecommunications terminal equipment market is the vertical interlinkage with other sectors. To look at those effects it is necessary to differentiate between the various vertical levels of the production chain in the telecommunications industry. The terminal equipment market amounts to approximately 25% of the expenses made annually by telecommunications services. From the amounts spent on equipment, two-thirds concern terminal equipment and one-third network equipment. The two categories of terminal equipment accounting for the largest share in the market are telephone sets (12%) and PABXs (Private Branch Exchange, private switching equipment) (34%). All other equipment relates to smaller shares: telefax (8%), modems (7%), and telex machines (4%). The trend in the terminal equipment market is that the relative share of telephone sets and PABXs will decrease and that all other terminal equipment will increase considerably.

**HIERARCHICAL PRODUCTION CHAIN OF TELECOM MARKETS**

**Figure 1.**



<sup>102</sup> Article 59 EC. (The Transitional Period mentioned ended in 1968).

This is illustrated<sup>103</sup>, in figure 1, on page 40, to show the effects of a liberalized terminal equipment market. The diagram starts with component production at the bottom and ends up with value added services (VAS), where the accumulated value added from previous production steps has widened the cone considerably.

A study on liberalization in the telecommunications market<sup>104</sup> has shown that the long gestation period and the large investment needed to establish a new generation of digital exchange makes the financing of sufficient research and development in the telecommunications industry a major problem. Most European carriers have provided support by buying prototypes built to their national specification, but some<sup>105</sup> have preferred to acquire in the world market the technology that has been paid for by others.

Related to these industrial policy objectives, maintaining a technological base is also an employment issue. Given the political opposition to the necessary restructuring in the industry, it can be seen that increasing the competitive pressure at the next market level, the network services, only eliminates such slowdown in adjustment and restructuring policies. The procedure by which this comes about can be illustrated by a number of confrontations that are being enacted between unions, equipment manufacturers, and telecommunications administrations both nationally and amongst each other internationally.

The result is obvious: the nationally oriented procurement policies are inefficient because of unexploited economies of scale in production and integration. A result of Italian telecommunications protective policy was seen in the buyout of Olivetti by the German industrial and telecommunications group, Mannesmann. The Mannesmann group agreed to buy 49% shares in Olivetti Mobile Telephony Service Holdings (OMTS), a telecommunications holding company created by the former Italian computer giant Olivetti. Mannesmann acquired an initial 25% of OMTS worth 560 million ECU at the end of 1997 and a further 24.9% worth 660 million ECU before March 2000. Olivetti transferred, in November 1997, all of its telecommunications assets to OMTS, including its 25.5% share

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<sup>103</sup>The IBM International Chair in Computer Science at its ten-year anniversary, celebrated in Brussels 1986. This issue is from a speech by Professor J Muller, INSEAD, Fontainebleau, France 1990, presented in: *Natural Monopoly, Deregulation and Competition*, Schaaf. Elsevier Science Publication. 1990.

<sup>104</sup>L. Foremaan, F. Peck, and T. Müller, *Liberalizing the European Telecommunications Market*. 1988.

<sup>105</sup>Norway and Denmark. See further: L. Foremaan, F. Peck, and T. Müller, *Liberalizing the European Telecommunications Market*. 1988.

holding in the cellular operator Omnitel Pronto Italia (OPI), in which Mannesmann also own a stake, and its 67% share holding in the fixed network operator Infostrada. The two companies also agreed that all their future investments and initiatives in the Italian telecommunications market would be realized through OMTS. Omnitel's major shareholders are the US telecommunications groups Bell Atlantic and AirTouch.

The way out of this dilemma is to explore more fully the potential of a larger market within the European market and from there to an open world market for telecommunications equipment. The keys to successful policy in the equipment sector are financial incentives to encourage productivity advances and technical change on the equipment side, combined with a situation of competitive supplies, independent of where in the Community the producers are located. Reducing barriers to entry through an extension of more international competitive procurement rules, as the Commission is attempting, must be quick to be effective.

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**Chapter 1.3**

**The Services Directive**

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The opening to competition of the telecommunications services market was initiated by the so-called services directive adopted by the Commission on 28 June 1990 (also under Article 86)<sup>106</sup>. This provided for the removal of special and exclusive rights granted by Member States to telecommunications organizations (TOs) for the supply of value-added services by the end of 1990 and data services by 1 January 1993<sup>107</sup>. The directive permitted on a temporary basis the maintenance of exclusive rights over the supply of public voice telephony service, considering that immediate liberalization of this service could damage the financial stability of the incumbent TOs and thus preventing them from ensuring the provision of a universal network. As mandated by the directive, it was this continuing monopoly, which was the principal subject of the policy review during 1992.

In view of the introduction of competition, this directive also required the separation of operational and regulatory functions, which were at the time accumulated by the TOs. This has now been implemented in almost all Member States, through, for example, the creation of government departments and/or independent agencies to handle regulatory matters, with day to day operation of the business firmly in the hands of the TO. This separation is often supported by the conclusion of management contracts between the State and the TO. Further provisions on the separation of operational and regulatory functions have been included in the ONP framework.

## Satellite

Building on the large consensus achieved on the basis of the Satellite Green Paper on 13 October 1994, the Commission adopted a directive abolishing special and exclusive rights for the provision of satellite services and equipment by the end of 1994<sup>108</sup>. According to this directive, licensing and declaration procedures may only be justified by the compliance with essential requirements, including avoidance of harmful interference and effective use of

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<sup>106</sup> European Commission. Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services. (OJ L192/10). 24.07.1990.

<sup>107</sup> This Directive, by defining very narrowly the scope of the monopoly over voice telephony, has also liberalized voice telephony services other than those provided for the general public (e.g. voice service for corporate communications or so-called closed user groups).

<sup>108</sup> European Commission. Directive 94/46/EEC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC in particular with regard to satellite communications. (OJ L 268/15). 19.10.1994

frequency spectrum. Licenses must be granted pursuant to objective, proportional, and non-discriminatory criteria.

### **Cable TV**

On 18 October 1995, the Council adopted a directive lifting restrictions on the use of cable TV networks throughout the Union of already liberalized telecommunications services (all telecommunications services except public voice telephony)<sup>109</sup>. In particular, this directive allowed new multi-media telecommunications services to be offered over cable TV networks throughout the European Union from 1 January 1996. The measure removes national regulations preventing the use of cable TV networks for anything other than simple, one-way television broadcasting services. These regulatory restrictions thus effectively prevented cable TV operators from offering carriage or provision of any of the new interactive multimedia services. Examples of such new services include: tele-shopping and tele-transaction packages, interactive games and education services, and on-line databases including detailed/moving images.

The cable directive (and the 1996 full liberalization directive) also required a Commission review, by the end of 1997, of the impact on competition of the joint provision of telecommunications and cable TV networks by a single operator, and the restrictions on the use of telecommunications networks for the provision of cable TV capacity. The results of this review are contained in a Commission Communication adopted on 17 December 1997<sup>110</sup>. In that review, the Commission found that the joint ownership of telecommunications and cable TV networks by the same company stifled the development of telecommunications markets, discouraged innovation, and prevented the full exploitation of the benefits of convergence between telecommunications, media, and information technology markets.

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<sup>109</sup> European Commission. Directive 95/51/EC of 18 October 1995 amending Directive 90/388/EEC with regard to the abolition of the restrictions on the use of cable television networks for the provision of already liberalized telecommunications services. (OJ L 256/49). 26.10.1995.

<sup>110</sup> European Commission. Communication (98/C 71/04) concerning the review under competition rules of the joint provision of telecommunications and cable television networks by a single operator and the abolition of restrictions on the provision of cable television capacity over telecommunications networks. (OJ C 71/04) 07.03.1998.

As a follow-up, the Commission adopted on 23 June 1999 a directive<sup>111</sup> under Article 86 (the former Article 90) of the Treaty, which addresses the problem of “cross-ownership” between the telephone network and cable networks, i.e., the ownership by incumbent telephone operators of both networks in the same market.

The directive therefore requires, as its main provision, that the telephone network and the cable networks within the same market must not be operated by a single legal entity. Such legal separation is the minimum condition to reduce the conflict of interest and to open the way to the development of both networks towards multi-media applications, and introduce necessary competition safeguards. This will encourage the development of both networks to carry broadband services such as high-speed Internet access.

### **Mobile Communications**

Building on the large consensus achieved on the basis of the Mobile Green Paper and, in particular, the support of the Council and the European Parliament, on 16 January 1996 the Council adopted a directive amending the services directive to include mobile communications<sup>112</sup>, previously specifically excluded from its scope. Besides requiring the removal of any remaining special and exclusive rights by February 1996, the Commission’s directive provided for:

- ◆ an early liberalization of infrastructures, so that mobile operators could build their own fixed or microwave transmission networks (subject to availability of frequencies) or use networks owned by third companies
- ◆ the right for mobile operators to directly interconnect (with the public network and with mobile operators in other Member States) by the same date
- ◆ required Member States to consider license requests to operate digital mobile services using DCS 1800 technologies from 1 January 1998

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<sup>111</sup> European Commission. Directive 99/64/EC of 23 June 1999 amending Directive 90/388/EEC in order to ensure that telecommunications networks and cable TV networks owned by a single operator are separate legal entities. (OJ L 175/39), 10.7.1999.

<sup>112</sup> European Commission. Directive 96/2/EC of 16 January 1996 amending Directive 90/388/EEC with regard to mobile and personal communications. (OJ L 20/59). 26.01.1996.



The Commission considered that the lack of progress on these issues would effectively slow down the development of mobile and personal communications and, particularly, the further development of roaming between different networks in different Member States. More recently then, in some cases again after Commission intervention, DCS 1800 (nowadays called GSM-1800) was introduced in most Member States by several new license holders.

### Full Competition

Following the political agreement among Member States to liberalize all telecommunications services (including voice telephony) and telecommunications infrastructure by 1 January 1998, with transition periods for certain Member States, on 13 March 1996 the Commission adopted a directive<sup>113</sup> amending the directive of 28 June 1990 on full competition (90/388/EEC). This directive called on Member States to take the necessary steps in order to ensure that markets were fully open by 1 January 1998<sup>114</sup>. In addition, it specified that restrictions on use of alternative infrastructure for services already liberalized (all telecommunications services except public voice telephony) should be lifted by 1 July 1996.

Harmonization aspects of licensing are covered by the licensing directive (see section 2.5).

Another important factor to safeguard the introduction of competition in these areas is effective interconnection. Therefore, the directive requires interconnection to the voice telephony service and public switched telecommunications networks to be granted on non-discriminatory, proportional, and transparent terms, and based on objective criteria. In particular, the directive required Member States to publish, by 1 July 1997, the terms, and

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<sup>113</sup> European Commission. Directive 96/19/EC of 13 March 1996 amending Commission Directive 90/388/EEC with regard to the implementation of full competition in telecommunications markets. (OJ L 74/13). 22.03.1996.

<sup>114</sup> Transition periods have been granted for Member States with less developed and very small networks. In accordance with Commission decisions: No 114/97/EC (on Ireland) of 27.11.1996. (OJ L 41/8). 12.02.1997.; No 310/97/EC (on Portugal) of 12.02.1997. (OJ L 133/19). 24.05.1997.; No 568/97/EC (on Luxembourg) of 14.05.1997. (OJ L 234/7). 26.08.1997.; No 603/97/EC (on Spain) of 10.11.1997. (OJ L 243/48). 05.09.1997.; and No 607/97/EC (on Greece) of 18.06.1997. (OJ L 245/6). 09.09.1997., temporary derogations have been granted with deadlines for full liberalization of 1.7.1998 for Luxembourg, 1.12.1998 for Spain, 1.1.2000 for Portugal and Ireland (the Irish government has announced that full liberalization will be achieved by 1.1.1999), and 1.1.2002 for Greece. The decisions include detailed timetables for the gradual abolition of various remaining restrictions and for the fulfilment of regulatory requirements under Community law, before the final deadlines (see texts for more detail).

conditions for interconnection to the basic functional components. More detailed provisions on interconnection are included in the European Parliament and Council directive of 30 June 1997 harmonizing interconnection conditions (see chapter 2.4), whilst guidance on the application of the competition rules in Articles 81 and 82 (ex-85 and ex-86) of the Treaty to access and interconnection agreements, is provided by the Commission's Notice published on 22 August 1998.

The 1996 directive also provides for the required measures for safeguarding universal service in the Member States (see chapter 4.1.2.). Specifically, Member States are required to allow tariff re-balancing taking account of specific market conditions and the need to ensure the affordability of universal service. In particular, current rates which are not in line with costs and which increase the burden of universal service provision should be adapted, in order to achieve tariffs based on real costs. When such tariff re-balancing is not completed before 1 January 1998 (in time for liberalization), Member States shall report to the Commission on the future phasing out of the remaining tariff imbalances, including a detailed timetable for implementation. The purpose of this directive is to create early certainty with regard to national legislation and the rights and obligations of market players in the liberalized telecommunications environment. Its provisions aim to give full effect to the commitment to the 1998 date for full liberalization.

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**Chapter 1.4**

**Summary**

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The EC legislative achievements in the telecommunications field since the 1987 Green Paper and after the British Telecom case must be acknowledged. The evolution of EC telecommunications law during a period of just ten years is impressive. PART I of the study showed that the political compromises leading to a fully liberalized telecommunications market had and still have their weaknesses. Many of the terms used, such as “interconnection”, “telecommunications services”, and “market power”, to mention just a few, still have to be defined.

In chapter 2 the Open Network Provision framework will be discussed . It starts with a description of the various directives under the ONP framework, adopted under the Open Network Provision directive.

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**Chapter 2**

**Open Network Provision Framework**

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Regulations implementing Articles 81 and 82 in application of Article 83 of the EC Treaty constitute law in force and are enforceable throughout the Community. It is obvious that Community acts adopted in the telecommunications sector are to be interpreted in a way consistent with competition rules, to ensure the best possible implementation of all aspects of the Community telecommunications policy.

This applies to the relationship between competition rules applicable to undertakings and the ONP rules. ONP comprises the “definition by the Council directives, of technical conditions, usage conditions, and tariffs principles for Open Network Provision, starting with harmonized conditions for the use of leased lines”<sup>115</sup>. The ONP principles have been fixed<sup>116</sup> on the establishment of the internal market for telecommunications services through the implementation of ONP, adopted by the Council on 28 June 1990 under Article 95 of the EC Treaty. ONP has a fundamental role in providing Europe-wide access to Community-wide interconnected public networks, and when Open Network Provision is implemented, any network user will be offered harmonized access throughout the Community, whichever country they address. The harmonized access will be ensured in compliance with the competition rules as mentioned above, as the Open Network rules provide.

After 1 January 1998, the time for the deregulated market, ONP can only be defined by reference to general competition law principles, for instance, dominance based on market shares rather than statutory privileges, and on the other hand full liberalization of services and infrastructure will require the full adoption of ONP principles.

The adopted ONP focuses on interoperability and interconnection as the main issues requiring regulation and supervision. It also recognizes that interoperability and, more so, interconnection are likely to be the most controversial day-to-day issues in the new liberalized environment. Another challenge for ONP will be to re-define the possible scope of specific national requirements relating to essential requirements, which are security of network operations, maintenance of network integrity, and interoperability of service and data protection. Data protection may soon be harmonized to an extent that would anticipate any need to deal with it separately, as an issue in the framework of ONP.

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<sup>115</sup> European Council. Resolution of 30 June 1988 on the Development of the Common Market for Telecommunications services and equipment up to 1992. (OJ No C 257/01). 04. 10. 1988

<sup>116</sup> European Commission. Directive 86/ 387/ EC. (OJ L 192/1). 24.07.1990.

The adopted ONP policy should draw a clear distinction between service and infrastructure.

The challenge of implementing fair competition may be even more daunting when the Community liberalization measures reach the core of the telecommunications organization activity, namely public voice telephony and the control of the basic infrastructure. These are not new markets, but traditional and mature ones. The total dominance of incumbent telecommunications organizations is consolidated. Experience of full liberalization in the US, the UK, and Japan shows that established local market dominance stands a good chance of persisting in the foreseeable future, even when the legislative and administrative mechanisms protecting it are removed by appropriate Community legislation.

To be able to handle such a situation Stanbrook and Hooper in a study<sup>117</sup> suggest two lines of action: the first is encouraging infrastructure competition to weaken the incumbents' control over bottleneck facilities and the second involves imposing specific conditions on incumbent dominant players. The study further examines whether Community law and policy offer the basis for asymmetrical measures that would favour new entrants by imposing appropriate restrictions on dominant players. Such asymmetric measures must, though, respect the principle of equality as developed by the ECJ<sup>118</sup>. Such objective justification must be related to one of the objectives of the EC Treaty.

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<sup>117</sup> Stanbrook and Hooper for the European Commission, *Legal and Institutional Issues Raised in Preparing for the Full Liberalization of the Telecommunications Sector*. 09.1994.

<sup>118</sup> See: Case 152/81, *Ferrario* [1983] ECR 2357/2367; Case 162/82, *Cousin* [1983] ECR 1101; and Case 234/82, *Ferriere di Roe Volciano SpA* [1983] ECR 3921.

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**Chapter 2.1**

**Leased Lines**

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The original directive on the application of ONP to leased lines<sup>119</sup>, adopted by the Council on 5 June 1992, aimed to ensure the availability throughout the European Union of a minimum set of analogue and digital leased lines up to 2Mbit/s with harmonized technical characteristics. It also aimed at eliminating technical restrictions for the interconnection between leased lines and public telecommunications networks.

Additional relevant provisions concern:

- ◆ availability of information on technical characteristics, tariffs, supply and usage conditions, licensing and declaration requirements, and conditions for the attachment of terminal equipment
- ◆ establishment of common ordering and billing procedures throughout the Union
- ◆ implementation of cost accounting systems by TOs in order to assess compliance with the basic principle of cost orientation of tariffs
- ◆ setting up of a conciliation procedure involving the Commission, to deal with disputes related to the implementation of the directive to be used when requested by users

In 1997 the leased lines directive was revised<sup>120</sup> to ensure that, in a competitive market, all users continue to have access to leased lines from at least one operator, under harmonized conditions of access and use, including access to a mandatory minimum set of leased lines. This revised directive of 6 October 1997 had to be transposed into national law by 1 January 1998. This harmonized offering is expected to act as a benchmark in terms of quality, price, and service levels, which other operators and service providers will seek to better. The decision as to which organization(s), separately or jointly, will carry this obligation-to-provide will be taken at the Member States' level. Obligations are normally to be placed only on organizations with significant market power. However, if no organization has significant market power in a given Member State, obligations must still be placed on at least one organization to ensure full territorial coverage. In a market where competition is fully effective, the need to apply the principle of cost orientation diminishes. The revised leased

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<sup>119</sup> European Council. Directive of 5 June 1992 on the application of open network provision to leased lines 92/44/EEC. (OJ L 165/27). 19.6.1992.

<sup>120</sup> Directive 97/51/EC of the European Parliament and of the Council of 6 October 1997 amending Council Directives 90/387/EEC. Directive 92/44/EEC for the purpose of adaptation to a competitive environment in telecommunications. (OJ L 295/23). 29.10.1997.

lines directive, therefore, provides for tariff regulation to be set aside by the NRA once no organization has significant market power in a specific market.

Price ceilings based on the lowest costs in the EU are recommended for the monthly leasing of a transmission circuit by an incumbent to another telecommunications operator, enabling the latter to link a user to its backbone network under competitive conditions. An incumbent operator charging more than the recommended price would have to justify why he is required to do so. In response, the national regulatory authority can oblige the operator to reduce its prices to a competitive cost-oriented level.

As leased lines are only one means of access to the customer, the recommendation also invites Member States to take other measures to stimulate competition and technical innovation in local access networks, which constitute a bottleneck. The recommended measures may aim to mandate unbundled access to the local loop of the incumbent operator, and encourage the rapid deployment of emerging access technologies such as digital subscriber loops and allocate spectrum for wireless local loops.

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**Chapter 2.2**

**Voice Telephony**

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The original directive on the application of ONP to voice telephony services was adopted by the European Parliament and Council on 13 December 1995<sup>121</sup>. A new directive<sup>122</sup> on Voice Telephony was adopted on 26 February 1998 and has replaced the 1995 directive. The aims of this ONP voice telephony directive are to ensure the availability throughout the Community of good quality telephone services, and to define the services available to all users, in the context of Universal Service.

In view of the close link between the scope of the voice telephony service and universal service, the directive addresses detailed service issues, such as:

- ◆ definition at national level of targets for supply time and quality of service
- ◆ provision of advanced facilities
- ◆ discounts, low-usage schemes and other specific tariff provisions
- ◆ availability of itemized billing
- ◆ access to and use of directory services
- ◆ provision of public pay-telephones
- ◆ specific conditions for disabled users and people with special needs
- ◆ numbering issues

The revised directive also takes account of the competitive market and was due to be implemented in Member States by mid-1998. It identifies the telephone services and associated facilities to be publicly available to all users in the context of universal service, reflecting the Commission Communication on Universal Service of March 1996. It ensures that all users can on request gain access at an affordable price to the fixed public telephone network, at a fixed location, for communication by voice, data or facsimile, and have access to a basic range of facilities including itemized billing and tone dialling. The decision as to which organization(s), separately or jointly, will carry these obligations-to-provide will be taken at the Member States' level.

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<sup>121</sup> European Parliament and Council. Directive 95/62/EC of 13 December 1995 on the application of open network provision (ONP) to voice telephony. (OJ L 321/6). 30.12.1995.

<sup>122</sup> Directive 98/10/EC of the European Parliament and of the Council of 26 February 1996 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment (replacing European Parliament and Council Directive 95/62/EC, 98/10/EC). (OJ L 101). 01.04.1998.

There is also a legal requirement for affordability, to be defined at a national level, allowing account to be taken of particular national situations and priorities. Affordability exists alongside the requirement for cost orientation, which is driving of the current process of tariff re-balancing. The principle of affordability ensures that tariff re-balancing proceeds at a pace which is consistent with the introduction of competition, but which at the same time does not result in unacceptably steep price rises for users.

The revised directive calls upon Member States to set up consultative mechanisms with users, consumers, suppliers, and manufacturers at the national level on issues related to the level, quality, and affordability of universal service. The Commission will provide regular reports on the evolution of tariffs throughout the Community.

In three specific areas:

- ◆ concerning directories
- ◆ consumer contracts
- ◆ access to emergency numbers

the directive also applies to mobile telephony.

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Chapter 2.3

Packet Switched Data Services

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The Council recommendation of 5 June 1992 on the application of ONP to public packet-switched data services (PSDS)<sup>123</sup> called upon Member States to ensure that on their territory, a minimum set of packet-switched data services with harmonized technical characteristics is provided, taking into account market demand. This recommendation also dealt with transparency of information, harmonized tariff principles, and quality of service issues.

Although packet-switched data services and ISDN are liberalized, they are still subject to ONP recommendations. They are placed under the Open Network Provision framework, mainly because of the ongoing debate between the Commission and a number of Member States over the scope of liberalization in basic data services. Until the result of that debate has been determined, it will be placed under ONP harmonization. A discussion on this subject is carried out in Chapter 2.6.

Annual statistical reports were prepared up to 1995, when it became clear that the availability of PSDS offerings, including level of penetration, had reached an appropriate degree throughout the Union with regard to the objectives of the ONP framework directive.

## ISDN<sup>124</sup>

The Council recommendation of 5 June 1992 on the application of ONP to ISDN<sup>125</sup> calls upon Member States to ensure that on their territory an ISDN with harmonized access arrangements and a minimum set of ISDN offerings according to ETSI standards are provided, together with adequate and efficient interoperability between ISDN networks in order to allow for Community-wide operation. As for PSDS, this recommendation deals with transparency of information, harmonized tariff principles, quality of service issues and, in addition, numbering.

Annual statistical reports have been prepared in order to examine the results of the application of the recommendation. Since they seem to indicate that the availability of ISDN

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<sup>123</sup> European Council. Recommendation 92/382/EEC of 5 June 1992 on the harmonized provision of a minimum set of packet-switched data services (PSDS) in accordance with open network provision (ONP) principles. (OJ L 200/1). 18.7.1992.

<sup>124</sup> The 1997 ISDN report can be viewed at the Internet address:  
<http://www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm>

<sup>125</sup> European Council. Recommendation 92/383/EEC of 5 June 1992 on the provision of harmonized integrated services digital network (ISDN) access arrangements and a minimum set of ISDN offerings in accordance with open network provision (ONP) principles. (OJ L 200/10). 18.7.1992.

offerings, including level of penetration, has reached an appropriate degree throughout the European Union with regard to the objectives of the ONP framework directive, 1997 was the last year for which such a report was produced.



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**Chapter 2.4**

**Interconnection**

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Interconnection is seen as a key element of a competitive market, allowing new market entrants access to existing end users, on a basis which will encourage increased investment and market growth in the telecommunications services sector. The interconnection directive was adopted by the EP and Council on 30 June 1997<sup>126</sup>. Its objectives are to ensure “any-to-any communication” and to guarantee the rights of market players to obtain interconnection with the networks of others where this is reasonably justified.

The harmonized framework for interconnection is characterized by:

- ◆ application of the open network provision principles of transparency, objectivity, and non-discrimination, in accordance with the principle of proportionality
- ◆ priority given to commercial negotiations between interconnecting parties within a framework established a priori by national telecommunications regulatory authorities in accordance with the principles of the directive
- ◆ clear responsibilities for national regulatory authorities, in accordance with the principle of subsidiarity, including effective mechanisms for dispute resolution.

The directive aims to strike an appropriate balance between the rights and obligations of players in accordance with their relative positions in the market. For this reason, it provides for designated organizations providing publicly available telecommunications networks and services (as defined in its appendix) to have rights and obligations to negotiate interconnection with each other, on a non-discriminatory basis, in order to ensure national and Europe-wide services.

Obligations for organizations with significant market power include requirements for non-discrimination, for publication of a reference interconnection offer, including interconnect price lists, for cost-oriented interconnection tariffs supported by transparent cost accounting systems, and for accounting separation in certain cases.

As well as providing a framework for interconnection, the directive is central in establishing the rules for the costing and financing of universal service in a competitive environment. It allows Member States to decide which organizations have an obligation to provide universal service, and describes the conditions governing the mechanisms that

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<sup>126</sup> European Parliament and European Council. 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). 26.07.1997.

Member States may implement for the sharing of any unfair burden that arises from such an obligation.

An amendment to the interconnection directive was adopted on 24 September 1998<sup>127</sup>, in order to bring forward the date for introduction of operator number portability to 1 January 2000<sup>128</sup> and to extend its coverage to the entire fixed network. Moreover, this amending directive requires the introduction of carrier preselection by at least all fixed network operators with significant market power, also as of 1 January 2000. In addition to the directive, the Commission has adopted a recommendation on Interconnection in a liberalized telecommunications market<sup>129</sup>. Part 1 of the recommendation, dealing with interconnection pricing, was adopted on 8 January 1998.

The recommendation has been updated on 29 July 1998<sup>130</sup> to provide the latest figures on interconnection charges throughout the EU.

Part 2 of the recommendation adopted on 8 April 1998<sup>131</sup> deals with accounting separation and cost accounting systems for implementation of interconnection obligations with particular regard to the principles of transparency and cost orientation. It recommends that NRAs require operators with significant market power to provide cost-oriented interconnection and the disaggregation of operating costs, capital employed and revenues of their integrated operations into at least the following broad business lines: core network (e.g., interconnection services), local access network (e.g., local loops), retail, and other activities (e.g., mobile, cable TV).

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<sup>127</sup> European Parliament and European Council. Directive 98/61/EC of 24 September 1998 amending Directive 97/33/EC with regard to number portability and carrier pre-selection. (OJ L 268). 03.10.1998.

<sup>128</sup> Member States with derogation for the full liberalization of telecommunication services are granted additional periods of two years after their respective full liberalization dates.

<sup>129</sup> European Commission. Recommendation 98/511/EC of 29 July 1998 amending Commission Recommendation 98/195/EC of 8 January 1998 on Interconnection in a liberalized telecommunications market. (OJ L 28/30). 15.08.1998.

<sup>130</sup> European Commission. Recommendation 98/511/EC of 29 July 1998 amending Commission Recommendation 98/195/EC of 8 January 1998 on Interconnection in a liberalized telecommunications market. Part 1 - Interconnection Pricing. (OJ L 228/30). 15.08.1998.

<sup>131</sup> (OJ L141/06). 13.5.1998.

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**Chapter 2.5**

**Licensing**

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Directive 97/13/EC on a common framework for general authorizations and individual licenses in the field of telecommunications services was adopted by the European Parliament and by the Council on 10 April 1997<sup>132</sup>. It had to be implemented by 1 January 1998. In an open environment telecommunications operators have to comply with a number of requirements relating both to predominantly technical issues (essential requirements) as well as to public interest objectives. Authorization (or licensing) regimes provide an appropriate means to supervise access to the market and to monitor compliance with the requirements which are imposed on operators. At the same time, the development of competition will be served best by authorization regimes which do not impose undue burdens on operators, whether through conditions or through procedures.

The key elements of the directive are:

- ◆ the prohibition of any limitation in the number of new entrants, except to the extent required to ensure an efficient use of radio frequencies and, under limited circumstances and for a temporary period, of numbers
- ◆ the priority given to general authorizations (characterized by the absence of prior approval by the national regulatory authority), as opposed to individual licenses. Although the scope of individual licenses has been extended by the Council, the signal sent and the principles set out by the directive are very clear : national licensing regimes must adopt the least onerous system possible, and one of the means to achieve that aim is to resort as much as possible to general authorizations.
- ◆ the definition of harmonized principles: The directive offers important guarantees to organizations applying for a telecommunications license in the EU, especially for new entrants, by setting up time limits and other procedural requirements, and by establishing principles with which national licensing regimes will have to comply, in particular with regards to conditions which may be attached with licenses.
- ◆ a procedure allowing harmonization of licensing conditions. This procedure associates CEPT/ECTRA/ETO and CEPT/ERC/ERO in the technical

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<sup>132</sup> (OJ L 117/15). 07.5.1997.

preparation of harmonized conditions and should result in Community decisions creating rights for undertakings<sup>133</sup>.

- ◆ the establishment of a one-stop shopping procedure to facilitate simultaneous applications for and granting of licenses in several Member States. The Commission has granted a mandate to CEPT to put this procedure into place.

The directive has also established a licensing committee, composed of representatives of the Member States and chaired by the Commission, to assist the Commission in executing the various tasks which the directive has created. The licensing committee also deals with matters following from the S-PCS Decision.

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<sup>133</sup> The Commission has concluded a Memorandum of Understanding with the European Committee for Telecommunications Regulatory Affairs (ECTRA), an inter-governmental organization comprising EU Member States as well as other European states, including those from Central and Eastern Europe. Under that MoU, the Commission entrusts certain work orders, in particular in relation to the harmonization of licensing conditions, to ECTRA's European Telecommunications Office (ETO).

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Chapter 2.6

**The Factual and Legal Background of the ONP Framework**

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The Commission adopted the approach<sup>134</sup> that EC law should at least allow a compromise solution for the introduction of asymmetrical Community measures. An example of this could be the market dominance enjoyed by an incumbent operator. Dominance would then be measured by an SMP (Significant Market Power) test. The market share 50%, would then be interpreted in the light of how dominance is assessed under Article 82 EC. This approach requires telecommunications organizations and Member States to prove, in a certain amount of time, that certain specified practices or arrangements listed in the asymmetrical measures comply with EC law. A shift in the burden of proof is a heavy requirement affecting only certain categories of undertakings determined for instance by their market share. Undertakings are deprived of the benefits of automatic exemption of certain of their contractual clauses if their market share exceeds certain limits.

In this area, it must be remembered that ensuring universal service is of vital importance in fulfilling the challenge to reach full liberalization. Ensuring compliance with the 1990 service directive and Article 86 (2) of the Treaty is entrusted to the dominant incumbent telecommunications organizations.

As explained in the transparency directive<sup>135</sup>, where a public service obligation is imposed, some form of compensation is normally provided for the serving of unprofitable areas or the provision of otherwise economically nonviable services, the assurance of which is deemed to be in the general interest. There was a debate in the Community telecommunications sector<sup>136</sup> as to what form compensation should take after the liberalization in 1998 and even what in fact the scope of the universal service should be<sup>137</sup>. With political emphasis on solidarity, integration, and the social dimension of the internal market it must be seen as clear that the solution to the universal service question must be found at the same time as liberalization.

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<sup>134</sup> European Commission. Regulation on the Application of Article 85 (3) of the Treaty to certain categories of technology transfer agreements. (OJ C 178). 30.06.1994.

<sup>135</sup> European Commission. Directive of 25 June 1980 on the transparency of financial relations between Member States and public undertakings 80/723/EC. (OJ L195). 29.07.1980.

<sup>136</sup> The fora for this discussion are mainly Information Society Directorate and Competition Directorate.

<sup>137</sup> For a description of this debate see: P. Larouche. Competition Law and Regulation in European Telecommunications, (Oxford and Portland, Oregon: Hart Publishing, 2000). 31 ff.



As stated in the Council resolution<sup>138</sup>, elements of universal service are contained in the ONP directives, the Council recommendations on packet-switched data, and<sup>139</sup> the ISDN offerings. The point for the Member States is to define what should constitute universal service. The resolution called on the Member States to “establish and maintain an appropriate regulatory framework and set appropriate targets.... In order to ensure, in the light of specific national circumstance...universal service throughout their territory”. This approach would appear to be confirmed in the Corbeau<sup>140</sup> case.

Following the resolutions, the Commission undertook comprehensive studies and consultations on these points. The Commission is currently reviewing the detail of national schemes for universal service, which had to be notified to the Commission in early 1997 for review as to their compatibility with Community law. Looking beyond the voice telephony directive under the ONP principles and the legal framework for the costing and pricing of universal service, the Commission published in March 1996<sup>141</sup> a communication examining the scope on universal service, how it might be adapted to the needs of the fully liberalized telecommunications market in 1998 and, of course, the issue of affordability. The broader political issue of promoting public access to new information services was also considered and the Commission announced “a further proposal to amend the ONP Voice Telephony Directive of December 1995 to create an obligation of affordability, require the provision of certain additional voice telephony features, such as touch-dialling, call - barring and itemized billing and to strengthen consumer rights and provide better service for disabled users”.

Further the Commission announced a communication on the criteria<sup>142</sup> which the Commission is using when examining national schemes for the costing and financing of universal service as well as guidelines for their practical operation and a first monitoring

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<sup>138</sup> European Council. Resolution of 7 February 1994 on universal service principles in the Telecommunications sector. (OJ C 48). 16.02.1994.

<sup>139</sup> European Council. Directive 90/387/EC. (OJ L192). 24.07.1990.

<sup>140</sup> Case 320/91, *Continental Can v. Commission* [1991] ECR I-2533 (*The Continental Can Case*).

<sup>141</sup> European Commission. Communication to the European Parliament, the Council, the Economic and social Committee and the Committee of the Regions: Universal Service for Telecommunications in the perspective of a fully liberalized environment - an essential element of the Information Society . (COM 96/73 final). 13.03.1996.

<sup>142</sup> European Commission. Communication of 27 November 1996 on the assessment criteria for national schemes for the costing and financing of universal service in Telecommunications and guidelines for the Member States on the operation of such schemes. (COM 96/608).

report at the end of 1997 to assess the scope, level, quality, and affordability of universal service.

On 11 September 1996 the Commission adopted its<sup>143</sup> proposal to adapt the existing ONP voice telephony, whilst on 27 November 1996, the Commission adopted also the communication on the assessment criteria for universal service schemes. The communication represents an important step for the Commission in that it is designed not only to provide concrete guidance on how the existing legislation should be applied by the Member States, but also to provide guidelines for many of the detailed aspects of universal service. Guidelines on calculating the costs of universal service, based on a long run average incremental cost methodology and the practical operation of universal service funds or other financing mechanisms determining who contributes and in what proportion to any burden associated with universal service.

After the introduction of the different directives, the integration of Articles 86 (3) and 95 of the EC Treaty will be discussed. The common view is that directives adopted under Article 86 (3) are called liberalization directives and those adopted under Article 95 are called harmonization directives<sup>144</sup>. A summary of the directives is presented in figure 2 on page 84.

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<sup>143</sup> European Commission. Proposal for a European Parliament and Council Directive on the application of Open Network Provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment. (Replacing European Parliament and Council Directive 95/62/EC); (COM 96/419 final). 11.09.1996.

<sup>144</sup> See as example the [www.ISPO.be](http://www.ISPO.be) - A. Bartousch, *Europäisches Telekommunikationsrecht in Jahr 1988*. (1999). The Status Report of EU Telecommunications Policy, updated occasionally at the INFOSOC Web site. This WEB site changes its looks far too frequently, so it might take some effort to find the quoted material.

Figure 2.

<p style="text-align: center;"><b>COMMISSION DIRECTIVES</b> <b>Article 86 (3)</b> <b>"LIBERALIZATION"</b></p> <p style="text-align: center;">◆</p>	<p style="text-align: center;"><b>EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVES.</b> <b>Article 95</b> <b>"HARMONIZATION"</b></p> <p style="text-align: center;">◆</p>
<p><b>Directive 90/388</b> (On competition in the market for Telecommunications services). Amended by:</p> <p><b>Directive 94/46</b> (Amending Directive 88/301, (on competition in the markets in telecommunications terminal equipment), and Directive 90/388 in particular with regard to satellite communications).</p> <p><b>Directive 95/51</b> (Amending Directive 90/388 with regard to the abolition of the restrictions on the use of cable television networks for the provision of already liberalized telecommunications services).</p> <p><b>Directive 96/2</b> (Amending Directive 90/388 with regard to mobile and personal communications).</p> <p><b>Directive 96/19</b> (Amending Directive 90/388 with regard to the implementation of full competition in telecommunications markets).</p>	<p><b>Directive 90/387</b> (Establishment of the internal market for telecommunications services through the implementation of open network provisions (ONP)). Amended by:</p> <p><b>Directive 97/51</b> (Amending Directives 90/387 and 92/44 (on the application of open network provision to leased lines).</p> <p><b>Directive 92/44</b> <b>Directive 97/33</b> (On Interconnection in telecommunications with regard to ensuring universal services and interoperability through application of the principles of ONP).</p> <p><b>Directive 98/10</b> (On the application of ONP to voice telephony and on universal service for telecommunications in a competitive environment).</p> <p><b>These four Directives are referred to as the Open Network Provision Framework.</b></p> <p><b>Directive 97/13</b> (On a common framework for general authorizations and individual licenses in the field of telecommunications services).<sup>145</sup></p>

The packet-switched data services and the ISDN are not placed in either of the two categories although they are liberalized, but still under ONP recommendations<sup>146</sup>.

<sup>145</sup> This Directive is not regarded as falling under the ONP framework as it is also based on articles 47(2) and 55 EC Treaty.

As actions were taken to liberalize the telecommunications market towards 1998, the overlaps between the two directive categories seem to have increased<sup>147</sup>, as the original purpose of the ONP framework was lost with the removal of the rest of the special rights over telecommunications infrastructure and the ONP directives were seen more as a regulatory framework for telecommunications<sup>148</sup>. The players in the market could be identified as falling into three categories:

- ◆ operators with significant market power
- ◆ operators of public telecommunications networks
- ◆ telecommunications service providers

Gradually the liberalization directives<sup>149</sup> and the harmonization directives began to cover similar ground. In fact the Commission introduced all its proposals under Article 86(3). The Commission made its proposal for the new ONP framework under Article 86 (3) with regard to the implementation of full competition in telecommunications market (Directive 96/19). It is interesting to notice that the full competition directive was in force during the process that led to the adoption of the ONP framework and the licensing directives. The Commission then, with the terminal equipment directive discussed earlier, extended the scope of Article 86 (3) to include the power to abolish special and exclusive rights. The Court of Justice upheld this<sup>150</sup>. As discussed in chapter 1.1 the full competition directive was used to:

- ◆ abolish exclusive rights on telecommunications services (apart from voice telephony)
- ◆ regulate the access and use of telecommunications infrastructure and voice telephony

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<sup>146</sup> It is thought that the reason for this is that a number of Member States are not in agreement with the Commission about the scope of liberalization concerning the basic data service.

<sup>147</sup> When the removal of special and exclusive rights over telecommunications infrastructure and voice telephony took place, the purpose of the ONP framework disappeared.

<sup>148</sup> For a similar view see P. Barouche, Competition Law and Regulation European Telecommunications. (Oxford and Portland, Oregon: Hart Publishing, 2000). chapter I: 4.

<sup>149</sup> A detailed examination of the two types of directives was done by P. Inhaul, EC Telecommunications: Towards a new Regulatory Paradigm, 1998, and was presented in an article Convergence in European Telecommunications: A case study on the relationship between regulation and competition law. This article can be downloaded from [www.digital-law.net](http://www.digital-law.net). Furtif, sexe: Dr P. Nihilismes thermal, Les télécommunications en Europe: concurrence ou organisation de marché? (Louvain-la-Neuve, 1997).

<sup>150</sup> See Chapter 1.1.2, supra.

- ◆ separate the operational and regulatory functions of the telecommunications operators (TO)<sup>151</sup>

With the full competition Directive 96/19, the Commission took a further step to strengthen its powers under Article 86 (3), by moving into the competition environment, as a result of the abolition of special and exclusive rights. This meant in practise that the harmonization directives under Article 95 were overlapped by the liberalization directives under Article 86 (3).

As mentioned earlier, a detailed discussion of the distinction between the two categories of directives has been done by Nihoul in his doctoral thesis<sup>152</sup>, which is why only his conclusions will be mentioned here. He concludes that, at least in the EU context, it is not possible to make a hard distinction between competition and regulation. He bases his argument on different elements where competition law and regulation would supposedly be different. He mentions:

- ◆ the time when the intervention takes place (ex post for competition law and ex ante for regulation)
- ◆ the form of obligations (negative for competition law, positive for regulation)
- ◆ the effect on the firm (protective of freedom for competition law and restrictive of freedom for regulation)
- ◆ the scope and precision of intervention (broad general and simple for competition law and narrow, detailed and complex for regulation)
- ◆ the aims (efficiency for competition law and redistribution for regulation)
- ◆ the circumstance of intervention (specific events for competition law and no restrictions for regulation)
- ◆ the object of intervention (market power for competition law and market parameters for regulation)
- ◆ the directness of intervention in the functioning of firms (indirect for competition law and direct for regulation)

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<sup>151</sup> This was an important issue since, as the telecommunications markets would be liberalized and the TOs should come into those markets, it was obvious that the TOs could no longer have any regulatory powers.

<sup>152</sup> See P. Nihoul, Les télécommunications en Europe: concurrence ou organisation de marché? (Louvain-la-Neuve, 1997).

Therefore<sup>153</sup>, the distinction between competition, as is mentioned in the liberalization directives, and regulation, as is mentioned in the harmonization directives does not stand.

This would, however, be the case in the USA<sup>154</sup>. (As the US rules are of limited relevance in the European debate, one must be careful in using them when discussing EU position.) Competition in the USA means the natural state of the market, free from regulatory mechanisms that get in the way of the free play of the market, and regulation would then be a state of affairs where government intervention replaces some or all mechanisms of competition.

To summarize the two views one can argue that:

- ◆ In the USA, regulation is seen as unfavourable to competition law, so either competition law or regulation would apply<sup>155</sup>.
- ◆ In the EU, competition law and regulation are not seen as incompatible<sup>156</sup>. As liberalization overtakes state interventions with sector-specific regulation, competition law will continue to be applicable to the liberalized sectors even when sector-specific regulation is in place.

Directives adopted under Article 86(3) played an important, if not vital, role in the liberalization of the telecommunications sector. The major reason for this was that the Commission used them to push through the liberalization process. As shown on page 55 the full competition Directive (90/388) and the four directives amending it, were used as a reference to support the new regulatory framework as it is described in the directives ratified by the European Parliament and the Council under Article 95.

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<sup>153</sup> As P. Nihoul concludes, supported by P. Larouche in his work European Telecommunications law Chapter II: E in fine.

<sup>154</sup> For a discussion on US regulation, see Supreme Court Judge S. Breyer, Regulation and its Reform. (Cambridge: Harvard University Press, 1982).

<sup>155</sup> A view that is supported by Supreme Court Judge Breyer, in Regulation and its Reform. (Cambridge: Harvard University Press, 1982).

<sup>156</sup> This is mirrored in Article 86(3), (competition law can be allied to the State and to State owned or controlled undertakings).

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**Chapter 2.7**

**The Numbering Environment**

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In the Green Paper on liberalization of telecommunications, infrastructure numbering was recognized as a “key factor -a pivot in market liberalization and the introduction of competition”<sup>157</sup>. It was further seen as necessary to ensure that the “development of telecommunications networks and services are not hampered on numbering grounds” and that “this challenge needs to be addressed by careful management of the overall numbering schemes, at a global, European and national level”. According to Article 129b of the Treaty, “the Community shall aim at promoting the interconnection and interoperability of national networks as well as access to such networks”.

Since the early 1990s the European Commission, the Council, and the European Parliament have been active in developing and opening a unified numbering environment within Europe:

- ◆ a Europe-wide access code for emergency services (112) to operate from 1992 and only in justified cases from 1996 alongside existing national emergency codes<sup>158</sup>
- ◆ a Europe-wide access code for the international dialling (00) to be introduced between 1992 and 1998<sup>159</sup>.

The administration of national numbering will remain a national function to be carried out by an authority independent from the operators.

The goals set out by the Council call for the development of a cooperation framework based on CEPT<sup>160</sup> coordination mechanisms, similar to that for radio frequencies. In September 1994, a Memorandum of Understanding (MoU) and a framework contract were signed with the CEPT European Committee for Telecommunications Regulatory Affairs (ECTRA) and the European Telecommunications Office (ETO), which has been set up in Copenhagen, under ECTRA. ECTRA adopted in November 1996 a decision on the establishment of a European Telephony Numbering Space that was approved by the Member States in June 1997 and adopted by the Commission<sup>161</sup> in its Green Paper.

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<sup>157</sup> Green Paper on the liberalization of telecommunications infrastructure and cable television network - Part II, A . (COM 94/682 final). 28.01.95.

<sup>158</sup> European Council. Decision of 29 July 1991 on the introduction of a single European emergency call number 91/396/EC . (OJ L 217/31). 06.08.91.

<sup>159</sup> European Council. Decision of 11 May 1992 on the introduction a standard International telephone access code in the Community 92/264/EC. (OJ L 137/21). 20.05.92.

<sup>160</sup> The European Confederation of Postal and Telecommunications Administrations.

<sup>161</sup> The European Commission Green Paper on a Numbering Policy for Telecommunications Services in Europe: Towards a European Numbering Environment. (COM 96/590 final). Brussels. 20.06.1997.



In order to shape Europe's future numbering environment and establish the political priorities in political objectives, the Commission has made the regulatory basis for the framework from the requirements in a competitive environment for control of national numbering schemes to be the responsibility of National Regulatory Authorities (NRAs). Regulatory numbering responsibilities are set out in the ONP open voice telephony directive<sup>162</sup>, the interconnection directive,<sup>163</sup> and the Commission directive on full liberalization<sup>164</sup>. The Green Paper was welcomed<sup>165</sup> and the issues addressed were recognized as crucial for the development of effective competition in a single European telecommunications market. It was pointed out that for all numbering changes and number mechanisms, the need of the user should be the point in focus. Changes to numbering plans always impose considerable burden on both business and public subscribers, and should therefore only be envisaged if the benefits clearly outweigh the costs<sup>166</sup>.

Consumer organizations and various service providers stressed the importance of an objective information campaign, to inform the subscribers in due time of the new possibilities which would be available, in particular number portability, carrier selection<sup>167</sup>, and Europe-wide service numbers. The subscriber should obtain clear information on how to benefit from any of these new options. The Green Paper proposed the introduction of carrier selection in two steps: call-by-call carrier selection to be introduced by 1 January 1998, and carrier pre-selection by 1 January 2000.

The increase of competition as potential effects of carrier selection was widely recognized, both by those who therefore advocated a rapid and general introduction and by those who for the same reasons insist that a more cautious and limited approach should be chosen.

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<sup>162</sup> European Council. Directive 95/62/EC. (COM 896/419 final).

<sup>163</sup> European Council. Directive 97/33 EC of 30 June 1997 on Interconnection in Telecommunications... of the Principles of ONP. (OJ L 199/32). 1997.

<sup>164</sup> European Commission. Directive 96/19/EC of 13 March 1996 with regard to the full implementation of full competition in the Telecommunications Markets. (OJ L 74/13). 1996.

<sup>165</sup> Around 80 written comments were received from residential and business users associations, telecommunications service and network providers, equipment and software manufacturers, and NRAs and their associations. A public hearing, with more than 100 participants, took place on 5 February 1997.

<sup>166</sup> European Commission. Communication from the Commission to the European Parliament and the Council regarding the Consultation on the Green Paper on a Numbering Policy for Telecommunications Services in Europe. (COM 97/203).

<sup>167</sup> The possibility for customers to choose their long-distance or international operator, e.g. by dialling a code or by determining the default carrier.

Concerning the issue of mobile versus fixed, the mobile operators argued that no form of carrier selection should be imposed to the mobile sector as sufficient competition already exists. Some of the operators also invoked technical complications for the implementation of carrier selection in mobile networks for which standardized solutions need to be developed first. On the other hand, long distance service providers insisted that all local loop access providers, both wired and mobile, should be obliged to offer carrier selection. The reason for this discussion was a presentation made by ECTRA<sup>168</sup> estimating that the direct costs for numbering changes would be within the following ranges: “the cost of a subscriber number change 10 - 50 ECU, the change in national destination code 1-10 ECU, and the cost of a country code change at least 0.5 ECU”. A reasonable estimate of the total direct costs would amount to approximately 2 billion ECU<sup>169</sup>. The most important issue on numbering is the issue of ensuring effective competition. In addition to general application of competition rules under the EC Treaty, the legal framework for telecommunications establishes obligations for Member States with regard to numbering<sup>170</sup>.

The Commission directive required that adequate numbers are made available for all telecommunications services before 1 July 1997. The interconnection directive<sup>171</sup> reiterates this requirement and stipulates further that “National Regulatory Authorities shall ensure that numbering plans and procedures are applied in a manner that gives fair and equal treatment to all providers of publicly available telecommunications services”, and that there shall be no “undue discrimination in the number sequences used to give access to the services of other telecommunications operators”.

As indicated earlier ECTRA estimated the costs for numbering changes in the European Community. These estimates were based on four options for a European Strategy towards a long term numbering strategy:

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<sup>168</sup> ECTRA (European Committee for Telecommunications Regulatory Affairs) Project Team on Numbering, Report on Costs of Number changes . 10 July 1995.

<sup>169</sup> This is estimated with about 200 million subscriber lines at a cost of 10 ECU per line. The Council Decision on the introduction of the common emergency number 112 and the consequential review of a number of national numbering schemes has significantly facilitated the introduction of other short codes starting with 1.

<sup>170</sup> European Commission. Directive 96/19/EC of 13 March 1996 amending Directive 90/388/EC with regard to the implementation of full competition in Telecommunications Markets. (OJ L 74/13). 22.02.1996.

<sup>171</sup> European Parliament and European Council. Directive 97/33/EC 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). 1997.

- ◆ Option 1 was a continuation of the present situation and should only be reactive to market forces or ITU<sup>172</sup> developments.
- ◆ Option 2 would implement a European Telephony Numbering Space (ETNS) for special pan-European services such as free-phone, premium-rate, or shared-cost service without making changes to country codes<sup>173</sup>.
- ◆ Option 3 issued the creation, in addition to providing numbers for special services, of a clear European numbering identity<sup>174</sup> by using the number 3 to proceed current national country codes, for example 333 for France, 344 for the United Kingdom or 346 for Sweden. The reason for this Option was that it would liberate up to 50 new country codes within Europe and allow the current country codes starting with number 4 to be recycled within the world-wide numbering plan.
- ◆ Option 4 was the creation of a single digit country code for Europe<sup>175</sup>, within a unified European numbering scheme, which would over time merge with national schemes.

In the consultation period following the ECTRA suggestion<sup>176</sup> it showed that Option 1 was widely rejected, but there was support for rapid progress on Option 2. There was a clear division of opinion between incumbent operators and new market players with regard to the need for rapid progress on Option 3 and on Option 4.

This division of opinions was confirmed by the contributions received on the consultation on the Green Paper on the liberalization of telecommunications infrastructure and cable TV networks<sup>177</sup>. The reason for these differences is mainly that alternative fixed local loop<sup>178</sup> access providers believe that the debate on carrier selection is based on the, in their view, wrong presumption that the local loop is a utility rather than a competitive product.

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<sup>172</sup> International Telecommunications Union. (ITU).

<sup>173</sup> The implementation was initially foreseen via the allocation of a virtual country code by ITU. Country code 388 was set aside and marked unavailable until mid 1997 pending further study in Europe on the set up of an ETNS.

<sup>174</sup> A three digit numbering code.

<sup>175</sup> Similar to the use of 1 to call North America from other parts of the world, or 1 + the local area code to call long-distance within North-America.

<sup>176</sup> Report on the consultation on strategic options for numbering of Telecommunications services in Europe, by ECTRA PTN, 10 July 1995.

<sup>177</sup> (COM 94/682). 25.01.1995.

<sup>178</sup> A line connecting a customer's telephone equipment with the local telephone company exchange.

The consultation process arguments were countered by long distance and international service providers who believe that the regulatory framework “should not favour one particular structural outcome of the competitive process, like infrastructure or service based competition”. The long distance providers added that “carrier selection will also provide an incentive to invest in the local loop given the importance of customer ownership”.

As to the mechanism of carrier selection, a view was held that easy access<sup>179</sup> is a sufficient instrument to facilitate competition in order to lower long distance and international tariffs. This group insisted that where easy access already exists, the cost for mandatory migration to equal access would not outweigh the benefits. A majority of the comments, however, from the new entrants in the long distance and international service market, the business and residential users associations, the majority of incumbents, and the national regulatory authorities supported the need for full equal access. Various international service providers expressed strong misgivings concerning the risk that easy access is wholly inadequate in bringing about effective competition, given its strong bias in favour of the incumbent operator.

The international service providers advocated that “experience shows that customers find it difficult to make the additional dialling effort required for selecting a different carrier than the one determined by default by the local access provider”. The latter will, in most cases, be the incumbent even in a fully liberalized market. In the context of competition, incumbent operators argued the need for harmonized and synchronized introduction of pro-competitive number mechanisms throughout the European Community in order to avoid competitive distortions. Some of the operators, however, felt that a gradual introduction would be more appropriate in order to allow operators to integrate the introduction of number portability capacity in their regular network update programme.

The timetable proposed in the Green Paper suggested the implementation of European Telephony Numbering Space by 1 January 1998 at the latest. Pan-European carriers and operators with pan-European strategic vision, expressed very strong support for

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<sup>179</sup> Easy access in relation to carrier selection refers to the situation where the default long distance carrier is determined by the local access operator with the possibility of override through dialling of a short code by the user on a call-by-call basis. Compare with equal access, which in relation to carrier selection refers to the situation where the long distance carrier is pre-selected by the customer with the possibility of over ride through dialling on a call-by-call basis.

the development of a European Telephony Numbering Space and felt that it would create opportunities for the development of pan-European services. Furthermore, there was broad support for implementation of a European Telephony Numbering Space on the basis of the 388 country code.

On the basis of the consultations on priorities for action, the timetable for the availability of carrier selection and pre-selection, number portability and pan-European numbers eventually was agreed as follows<sup>180</sup>.

By 1 January 1998: Call-by-call carrier selection to be offered by all fixed local access providers with significant market power, in all Member States, where full liberalization is required by that date, and in Member States where additional transition periods have been agreed, by the end of those periods.

By 1 January 1999: Establishment of a European Telephony Numbering Space on the basis of country code 388.

By 1 January 2000: Carrier pre-selection, with default to be determined by the subscriber and with call-by-call override for the user, to be offered by all fixed local access providers with significant market power in all Member States. Operator number portability to be offered by all operators for non-geographic special service numbers (freephone, shared costs, premium rate services). The Green Paper also suggested in order achieving these objectives actions, which will be needed.

By end of 1997: Proposal for appropriate legislative measures to ensure the availability of facilities for carrier pre-selection and number portability throughout the Community by 1 January 2000. The Commission trusted that ETSI would endeavour to adopt common standards, both on alphanumeric dialling and the \* and # codes by the end of 1997<sup>181</sup>. ETO Report with detailed description of national numbering plans. Launch studies on possible minimum criteria and standardization requirements in view of a long term number portability solution, and alternative, on-screen/on-line means, for tariff information, for the user.

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<sup>180</sup> European Commission. Communication from the Commission to the European Parliament and the Council regarding the consultation on the Green paper on a Numbering Policy for Telecommunications Services in Europe . (COM 97/203).

<sup>181</sup> European Commission. Communication from the Commission to the European Parliament and the Council regarding the Consultation on the Green Paper on a Numbering Policy for Telecommunication Services in Europe . (COM 97/203). 23.

By end of 1998: Examine possible extension of carrier selection and number portability requirements to mobile operators.

By early 1999: Appropriate legislative measures to be adopted to ensure the availability of facilities for carrier pre-selection and number portability throughout the Community by 1 January 2000. Member state to implement 388 for the European Telephony Numbering Space. The Commission is to issue common guidelines on fair and pro-competitive arrangements for sharing costs of number portability. Commission recommendations on further restructuring of national numbering plans in view of competition requirements and gradual convergence.

By end of 1999: Examine desirability of extension of carrier selection requirements to fixed local access providers without significant market power.

By early 2000: Further study, in the light of experience with a liberalized single market in telecommunications and with the ETNS, of the need for and costs/benefits of unified European numbering environment. A long term view on a European numbering environment to be developed, on the basis of experience gained with a liberalized market and with the European Telephony Numbering Space. A communication<sup>182</sup> was presented on the 1<sup>st</sup> October 1997 for a proposal for a European Parliament and of the Council amending Directive 97/33/EC (the interconnection directive) with regard to operator number portability and carrier pre-selection.

All of this was achieved and the timetable was followed.

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<sup>182</sup> (COM 97/480).

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Chapter 2.8

The Licensing Environment

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A proposal for a common framework<sup>183</sup> for general authorization and individual licenses in the field of telecommunications was adopted in November 1995. The proposal replaced two previous proposals, one on the mutual recognition<sup>184</sup> of licenses and other national authorizations for telecommunications services, and one on a policy for the mutual recognition<sup>185</sup> of licenses and other national authorizations for the provision of satellite network services and satellite communications services

In an open environment telecommunications operators have to comply with a number of requirements relating both to predominantly technical issues (essential requirements) as well as to public interest(s) objectives. Authorization or licensing regimes provide an appropriate means to supervise access to the market and to monitor compliance with the requirements which are imposed on operators. At the same time, it has become clear that the development of competition will be served best by authorization bodies that do not impose undue burdens on operators, whether through conditions or through processes.

After the European Parliament suggested certain amendments, a directive on a common framework for general authorizations and individual licenses in the field of telecommunications services was agreed by the Council<sup>186</sup> and shows key elements in the licensing field. The directive was intended to be implemented by the Member States in time for full liberalization on 1 January 1998.

The directive prohibits any limitation in the number of new entrants, except to the extent required to ensure an effective use of radio frequencies, and under limited circumstances and for a temporary period, of numbers. Further the priority given to general authorizations characterized by the national regulatory authority as opposed to individual licenses. Although the Council has extended the scope of individual licenses, the signals sent and the principles set out by the directive are very clear. National licensing bodies must adopt the least onerous system possible, and one of the means to achieve that aim is to resort as much as possible to general authorizations.

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<sup>183</sup> European Commission. Proposal for a European Parliament and Council Directive on a common framework for General authorizations and individual licenses in the field of Telecommunications Services. (COM 95/545; OJ C 90/5). 27.03.1996.

<sup>184</sup> (COM 92/254 final).

<sup>185</sup> (COM 94/41 final).

<sup>186</sup> European Parliament and European Council. Directive 97/13/EC on a common framework for general authorizations and individual licenses in the field of Telecommunications services. (OJ L 117/15). 07.05.1997.



Concerning the definition of harmonized principles, the directive offers important guarantees to organizations applying for a telecommunications license in the European Union, especially for new entrants, by setting up time limits and other procedural requirements, and by establishing principles with which national licensing regimes will have to comply, in particular with regard to conditions which may be attached to licenses. As an example, the directive forbids certain kinds of illegitimate licensing conditions, or requires that license fees only cover the administrative costs and be proportionate to the work involved in issuing and monitoring the license.

In a study by N/E/R/A<sup>187</sup>, reflecting the discussions behind the two proposals<sup>188</sup> in order to put the licensing directive in context, they argued that the need to obtain separate licenses or authorizations in the Member States was harmful to a true single market, time consuming, and a barrier to entry. When the service proposal was introduced, the concept of a single European telecommunications license was replaced by a watered-down procedure for mutual recognition of national authorizations, under a simplified and, as claimed, more efficient procedure, based on prior harmonization of national conditions for authorization of telecommunications services.

Both proposals envisaged the creation of a Community telecommunications committee. The Proposals stated that the Committee was to have an advisory role, leaving final decision making power to the Commission. The Economic and Social Committee recommended that the Committee should have greater powers, which was, however, resisted by the Commission. In general the NRAs would have retained the right to issue, monitor and enforce licenses to provide telecommunications services, both proposals contained powers for the Commission and in certain cases to overturn national licensing decisions.

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<sup>187</sup> National Economics Research Associates, A Marsh & D. McLennan Company, London, The Proposed Community Position on Licensing and Interconnection. Report made for DG XIII, April 1997.

<sup>188</sup> The Services Proposal: European Commission. The amended Proposal for a European Parliament and Council Directive on the mutual Recognition of Licenses and other National Authorization for Telecommunications Services. (COM 92/254, as amended by COM 94/41). The Services Proposal: European Commission. The Proposal for a European Parliament and Council Directive on a Policy for the mutual recognition of Licenses and other National Authorization for the Provision of Satellite Network Services and/ or satellite Communications Services. (COM 93/652).

This caused great concern in the Member States and these powers are not repeated in the Common Position<sup>189</sup> on the licensing directive.

The main difference between the licensing directive and the two withdrawn proposals is that the Community moved away from the idea of mutual recognition of licenses and thereby further away from pan-European licensing in favour of national harmonized procedures for the granting of authorizations and the conditions attached to authorizations. In a way to promote deregulation, the Commission also promotes the grant of general authorizations by Member States, thereby removing the need for individual national licenses in many cases.

The new proposed licensing directive does retain certain elements from the previous withdrawn proposals. For instance, it requires that ECTRA and ERC/ERO develop harmonized license conditions and that a one-stop-shopping procedure for individual licenses be set up to assist undertakings to provide trans-European services. If this procedure is fully implemented, it may facilitate simultaneous delivery of individual national licenses following a single application. In a parallel study by ETO<sup>190</sup>, they have 1995 set up a type of one-stop-shopping regime envisaged by the licensing directive, however, only for data transmission and value-added services.

Another feature of the original proposal was that operators, intending to operate in more than one Member State, may request the relevant NRAs coordinate their authorization procedure in order to ensure that they issue the necessary authorizations on substantially the same conditions, but this provision was removed in the Common Position.

Finally, a common position was reached on 9 December 1996 under which the use of licenses is limited in Article 7 to:

allowing access to radio frequencies or numbers, granting licensees particular rights with regard to access to public private land, further to imposing obligation and requirements relating to the mandatory provision of publicly available Member States services and/or public Member State networks, including obligations under ONP legislation and/or relating to universal service provision and imposing specific obligations related to competition rules on players with significant market power in

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<sup>189</sup> Common Position adopted by the Council on 9 December 1996, Brussels 2 December 1996.

<sup>190</sup> European Telecommunications Office, One-Stop-Shopping on, Bearer Data Services and Other Liberalized Services. Copenhagen. 1995.

relation to publicly available Member State services and/or public Member State networks.

In addition to this, individual licenses may be used in relation to the provision of voice telephony services, the establishment and provision of public Member State networks, and of other networks involving radio frequencies. According to Article 10 (1) of the Common Position, the number of licenses may be limited for any category of services for the establishment and operation of networks “only to the extent required to ensure the efficient use of radio frequencies for the time necessary to make available sufficient numbers in accordance with Community Law”.

In the cases where licenses are required, the NRAs are put under stringent obligations and a new Licensing Committee is to be set up, comprising representatives of Member States in order to assist the Commission to monitor the application of the licensing directive and to promote exchanges of information. A recent development in the field of licensing was a discussion in the Council of a proposal by the Commission<sup>191</sup> to introduce S-PCS in the Community in a coordinated fashion. An important issue, was the need for action at Community level, on the grounds that coordination on frequency allocation and licensing already takes place via organizations such as ITU and the CEPT.

In a consultation round, the Member States, or at least most of them, rejected provisions in the proposal, allowing the Commission together with a Committee of Member State representatives to develop criteria for licensing operators for the EU Market and for selecting the operators, which suggests political concern over expansion in the role of the Commission in the area of licensing and that the subsidiarity argument could be deployed against further pre-emption in this area. Concerning the involvement of a European regulatory authority, there was support among the Member States for such a body. The strongest support came, obviously, from companies wishing to operate across Europe. These companies considered the case for a single license to operate across Europe and issued by a single European body, to be very strong. One company, which was interviewed<sup>192</sup>,

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<sup>191</sup> European Commission. Proposal for a European Parliament and Council Decision on an action as a Union Level in the field of Satellite Personal Communications Services in the European Union . (COM 95/529).

<sup>192</sup> Issues Associated with the Creation of a European Regulatory Authority for Telecommunications *Survey Results in the consultation on the Creation of a European Regulatory Authority for Telecommunications* NERA and Denton Hall for the European Commission.

stated, "How can you envisage a single market for Telecommunications, when there is no one to give you a European License?"

The difficulties faced concerning licenses in the Community originate mainly from the fact that the licensing procedure differs widely from country to country within the European Community. The two extremes are the United Kingdom and Germany. Under the United Kingdom system<sup>193</sup>, which uses the license conditions as the principal instrument of regulation, very detailed licenses are issued. Even guidelines to the license are introduced<sup>194</sup>:

As soon as reasonably practical on or after 1 August 1997 and in any event no later than 31 December 1997 the Licensee shall introduce and make generally available a scheme complying with the guidelines to be agreed between the Director and the Licensee in accordance with which the Licensee will provide to every person who is, or wishes to become, its residential customer and who requests such provision, voice telephony services under which no outgoing calls can be made except as a consequence of the requirements on the Licensee under Condition....

In Germany, the approach is the opposite. The licenses are much shorter than in the United Kingdom. For example, in Germany an operator just agrees to have the status of a public telecommunications operator in very broad terms<sup>195</sup>. Rights, restrictions, and obligations are established for that category or organization in the legislative and regulatory measure accompanying telecommunications liberalization in Germany.

There are also differences between Member States in the levels of compliance and enforcement. This is an important issue, as even if the formal rules are harmonized, different levels of enforcement will mean that harmonization is not achieved in practise.

In addition to this, differences in license conditions between the Member States can impose extra costs on those who are trying to establish a seamless network across Europe, rather than a patchwork on national networks. Operators arguing against the involvement of a European regulatory authority in the issuing of a European Community license, the setting

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<sup>193</sup> Statement issued by the Director General of Telecommunications in *Interconnection and Interoperability*, and in the OFTEL's Management Plan for 1997/ 98 and beyond, June 1997.

<sup>194</sup> See, for instance, Draft British Telecom License condition and Guidelines for the Lifeline Scheme. These can be downloaded from the OFTEL web site. (Due to frequent changes of the WEB site it might be difficult to find).

<sup>195</sup> Gesetz zur Neuordnung des Postwesens und der Telekommunikation – Postneuordnungsgesetz, The Postal Reform Package II on September 14, 1994. Published by the German NRA.

of license conditions, and the monitoring of compliance, believe that the costs of multiple license applications and of compliance with different sets of license conditions, have been greatly exaggerated, and that European measures are currently on the table that will deal with a number of the problems raised.

One such solution could be the one-stop-shopping available through the ETO as a way of minimizing the costs of multiple license applications. It was pointed out, however that ETO only deals with the licensing of services and has no authority to impose binding license conditions or to oblige licenses to be granted by the NRAs concerned.

Under mutual recognition or single European licensing, service providers will need to apply for one license instead of fifteen. Under the class licenses administration, service providers will not need to make any license applications.

The supporters of a single European license argue that the licensing directive is insufficient to meet the needs of those wishing to establish pan-European operations. It is a common view that the impact of the licensing directive would be relatively limited<sup>196</sup>. The Council Resolution on the review of the situation in the telecommunications Sector and the need for further development in that market<sup>197</sup>, together with the resolution of 22 December 1994 on the principles and timetable for the liberalization of telecommunications infrastructure<sup>198</sup>, as well as the European Parliament resolutions of 20 April 1993, 17 April, and 19 May<sup>199</sup>, all supporting the process of full liberalization of telecommunications services and infrastructure by 1 January 1998, ended up in the directive on a common framework for general authorizations and individual licenses in the field of telecommunications services.<sup>200</sup> The directive shows no significant changes, apart from a contribution to the entry of new operators into the Market, which can be considered as a part of the information society.

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<sup>196</sup> OFTEL's Management Plan for 1997/ 1998 and beyond, June 1997. See further Universal Telecommunications Services, Detailed Explanatory Notes to the Consultative Document, February 1997.

<sup>197</sup> (OJ C 213). 06.08.1993.

<sup>198</sup> (OJ C 379). 31.12.1994.

<sup>199</sup> (OJ C 150). 31.05.1993.; (OJ C 109). 01.05.1995.

<sup>200</sup> European Parliament and European Council. Directive 97/13/C of 10 April 1997 on a common Framework for General Authorizations and Individual Licenses in the field of Telecommunications Services. (OJ L 117/15). 07.05.1997.

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**Chapter 2.9**

**Economic Welfare of Market Liberalization**

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The effect of market liberalization on economic welfare<sup>201</sup> is significant. The welfare gain to the British economy of the changes in British Telecom's prices over the period 1983 - 1992 shows that the increase was £2 billion per annum (0.5% of GDP)<sup>202</sup>. The study shows that it was mainly from the substantial reductions in the price of national and international calls over the period (from 8.3% to 6.7% per annum). When studying the United States economic welfare gain on liberalization, the welfare benefit to customers from changes<sup>203</sup> in prices, shows a gain of \$0.7 - 1.6 billion per annum. These findings show that when looking to the future "complete liberalization of telecommunications and information services in the United States would add 0.5% per annum to US growth over the next ten years (1993 - 2003)".

Not only prices can be a ground for economic growth. A fast introduction of new technologies and services brings other benefits. It has been estimated that if there had been a two year delay in the introduction of PCN services, GDP would have been £300 million less than would otherwise have been the case, and around 7.300 jobs would have been lost<sup>204</sup>. As a result of the 10 - 15 years delay in licensing cellular telecommunications in the United States, due to political reasons, a study estimates the loss of economic welfare in the United States reached \$86 billion<sup>205</sup>. These studies show that competition and liberalization have had beneficial effects on prices, productivity, costs, and an overall economic welfare. Perhaps not on direct employment in the telecommunications service sector, but the wider effects on employment seem to be positive.

This effect has not only been beneficial for centralised regions or large countries. Smaller countries and less developed countries in the telecommunications services area have been equally favoured<sup>206</sup>. One can argue that the benefits of new telecommunications technology, and investments following liberalization in these countries, will be substantial. It

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<sup>201</sup> Welfare equals in this context the difference between consumer's willingness to pay, and the marginal cost of supply equals profit.

<sup>202</sup> N. Attenborough, R Foster, and J. Sandbach, *Economic effects of Telephone Prices in the UK*. Toic No 8. 1992.

<sup>203</sup> R. Crandall, *After the break - up: US Telecommunications in a more competitive area*. (Washington DC: Brookings Institution, 1191).

<sup>204</sup> Smith systems Engineering and NERA, *The Economic impact of the use of Radio in the UK*. 1995.

<sup>205</sup> J Rolhs, C. Jackson, and T. Kelley, *Estimate of Loss to the United States Caused by the Delay in Licensing Cellular Telecommunications*. 1991.

<sup>206</sup> The European framework for competition in telecommunications. *Telecommunications Policy* Vol. 19 No 4. 1995.

is partly for these reasons that the implementation of the Open Networks Provision and EU liberalization and harmonization issues are being rapidly implemented in the Member States.<sup>207</sup>

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<sup>207</sup> NERA Analysis based on Phase 2 Interviews in the Country Study made for DG XIII in the European Commission.



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**Chapter 2.10**

**Summary**

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The Open Network Provision framework contains, as shown in this chapter, substantive procedural and organizational rules for the Community wide harmonization of the conditions for an “open and efficient access to and use of public telecommunications networks and, where applicable, public telecommunications services”<sup>208</sup>.

In its fundamental nature, the Open Network Provision is meant to facilitate the access of private companies to public telecommunications network and to assure public telecommunications services.

The other goal of the Open Network Provision is to achieve harmonization of technical interfaces, and to seek to remove discrepancies in conditions of use and tariffs, thereby facilitating the provision of pan-European telecommunications services.

These issues were discussed in chapter 2, ending with a discussion of the economic welfare of market liberalization.

In chapter 3, the interconnection area will be discussed from a more practical perspective, as interconnection is seen as the cornerstone of the liberalization of the telecommunications market.

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<sup>208</sup> Article 1.1 of the ONP Directive: Directive 90/387 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). 1990.

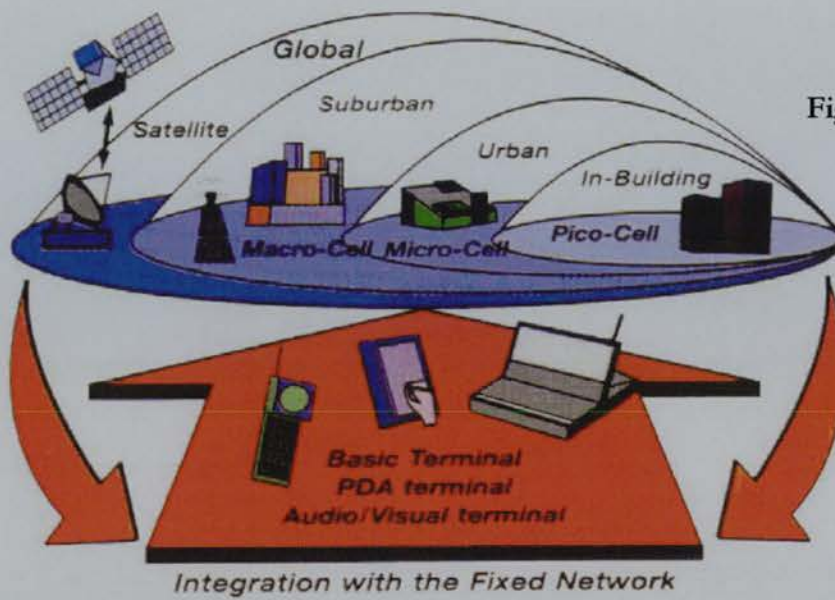
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**Chapter 3**

**Interconnection**

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The development of the directives on interconnection leading up to the fully liberalized telecommunications market has been discussed in chapter 2.4. In this chapter interconnection from a technical and economic perspective will be discussed. An understanding of these technical and economic aspects will be of value when the consumer market of fixed/mobile convergence is discussed in chapter 4.

As interconnection is seen as a cornerstone of the liberalized market (without interconnection the other rules would have been pointless), it is of value to define, or to try to define, some of the terms used in the ONP framework. As said earlier in chapter 2.4, the ONP framework relates to public telecommunications network and public telecommunications services. In Directive 90/387<sup>210</sup> and Directive 90/388<sup>211</sup> the definition of public telecommunications network was modified. In fact, no definition at all was given. In addition, in Directive 97/13<sup>212</sup> the term “publicly available telecommunications services” is used. This has created some uncertainty regarding the meaning of publicly available.

<sup>209</sup>The picture, figure 3, is taken from WIK, Network Interconnection in the Domain of ONP. Nov. 1994, and is only used as an illustration of the practical side of interconnection.

<sup>210</sup> Establishment of the internal market for telecommunications services through the implementation of ONP. (OJ L 192/1). 1990.

<sup>211</sup> On competition in the market for Telecommunications services. (OJ L 192/10). 1990.

<sup>212</sup> On a common framework for general authorizations and individual licenses in the field of telecommunications services. (OJ L 117/15). 1997.

By Directive 96/19<sup>213</sup> the Member States must enforce many obligations on the former monopoly holders; the most important are<sup>214</sup>:

- ◆ to provide interconnection to the public voice telephony service and to the public switched telecommunications network to other providers
- ◆ The telecommunications operators must implement accounting systems for public voice telephony and for public telecommunications networks in order to calculate the cost for interconnection.

This is also applicable concerning licenses. An individual license can only be imposed for public voice telephony and for public telecommunications networks (and other networks using radio frequencies)<sup>215</sup>. On the other hand contributions to universal service funds can only be required from providers of public telecommunications networks<sup>216</sup>. These providers are also entitled to the rights of way<sup>217</sup>.

Public voice telephony seems therefore to play a very central role under Directive 96/19, as it is under a heavier regulatory framework than the other concepts. Directive 96/19 further defined public telecommunications network as “a telecommunications network used inter alia for the provision of public telecommunications services” that is “telecommunications services available to the public”. Unfortunately the directive does not define what it means by “available to the public”. Perhaps it means “for the public” as in the definition of public voice telephony? It could be debateable if there is any agreement amongst decision makers and other interested parties as to what the terms mean. These phrases, however, are not repeated in the definition of telecommunications services.

Finally, concerning packet-switched data services, which, as said earlier, are liberalized but under a number of ONP provisions, these could then be considered as public telecommunications network as it is obviously available to the public. As a consequence of

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<sup>213</sup> Amending directive 90/388 with regard to the implementation of full competition in Telecommunications markets. (OJ L 74/13). 1996.

<sup>214</sup> Directive 96/19, Article. 1(6). (OJ L 74/13). 1996.

<sup>215</sup> Directive 96/19 of 13 March 1996 amending Directive 90/388 with regard to the implementation of full competition in telecommunications markets, Article 1 (2 and 3). (OJ L 74/13). 1996.

<sup>216</sup> Directive 96/19, Article 1(6). (OJ L 74/13). 1996.

<sup>217</sup> See Article 7(1) of Directive 97/13 On a common framework for general authorizations and individual licenses in the field of telecommunications services, b) the grant of ways over public and/or private land.

this packet-switched data services could then be under heavier regulation than they were before the liberalization.

It is vital that the fully liberalized market is defined perhaps through the route of decision making by case law.

Interconnection is the major element for the fully liberalized market. Interconnection between public networks and services should be ensured<sup>218</sup>, and operators with significant market power have to give access to their networks<sup>219</sup> while respecting the principles of non-discrimination, proportionality, transparency, and objectivity<sup>220</sup>. The rest of this chapter will describe the more practical side of interconnection.

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<sup>218</sup> Directive 97/33 On Interconnection in Telecommunications with regard to ensuring universal services and interoperability through application of the principles of ONP, Articles 3 and 4. (OJ L 199/32). 1997.

<sup>219</sup> Directive 97/33, Article 4(2). (OJ L 199/32).

<sup>220</sup> Directive 97/33, Articles 6 and 7. (OJ L 199/32).

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**Chapter 3.1**

**Interconnection from a Technical Perspective**

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Interconnection between networks divides into two separate categories:

- ◆ symmetric relationships (exist between TOs that interconnect for international service at national frontiers and between two mobile operators who are directly connected)
- ◆ asymmetric relationships (exist where the two parties are substantially unequal in size or technical conditions)

Most interconnection relationships between TOs and other operators and service suppliers are asymmetric. Technically different facilities must be assimilated, and the traffic and services of the two networks are often proportionate. Further, the incumbent network operator is often the dominant supplier, whereas an entrant demands interconnection for technologically advanced services.

Therefore interfaces that provide access to “bottlenecks” (defined by the European-American Centre for Policy Analysis as “involving a situation where a competitor, in order to produce its own service, absolutely requires as an input a resource that is produced by the dominant operator and the competitor is unable to produce this input itself”), may enable the incumbent, by controlling the technical arrangements of interconnection, to affect the competitor’s viability, products, or costs.

Another vital area in interconnection concerns the technical requirements that are<sup>221</sup> necessary to achieve equal access and thus contribute to conditions for fair competition, both between two or more competitors, and between new network operators and an incumbent operator, are known to all parties.

A telecommunications network contains a large number of interfaces at which components are attached or interconnected. The network operator manages these connections by coordinating its staff and by establishing specifications from the external suppliers of components. The operator and the suppliers must rely on international technical standards to define portions or even all aspects of an interface. The national TO has modified these standards or has developed interface requirements, which have to be met by all of the TOs suppliers. Consequently, network relationships have to be represented by a series of layers.

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<sup>221</sup> Wissenschaftliches Institut für Kommunikationsdienste (WIK), Network Interconnection in the domain of ONP. November, 1994.



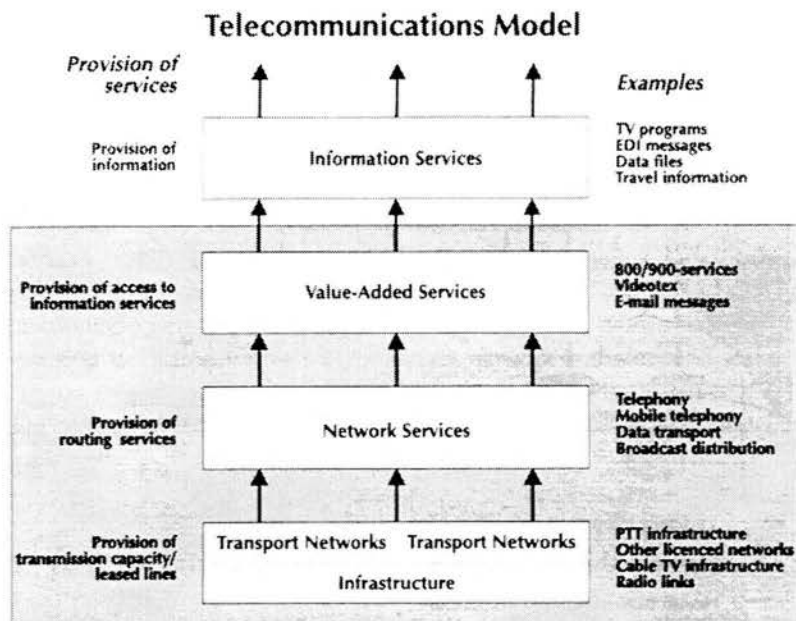


Figure 4.

As described in figure 4, the bottom layer, “Infrastructure”, gives Bandwidth (capacity). It is built from levels of transport facilities such as cables, radio links, and more interestingly, satellite facilities. This layer incorporates the transport facilities of different entities such as TOs, television, distribution companies, and television broadcasters.

In the layer “Network Services”, the technology provides for the routing of signals and messages through the infrastructure. It consists of network switches and control facilities. At this level the network services include voice telephony service, X25 data service, and television distribution.

At the “Value-Added Services” layer, the networks provide access to information and communication services, which can be reached and selected by the individual user e.g., cashless calling, freephone, videotext, and E-mail messages.

At the top level layer “Information Services” provide the information, such as data files, travel information, and television programmes.

The two lower layers are “Basic Services” and the two top layers are “Enhanced” or “Value-Added” services. These two layers require high-level features. It is interesting to notice that this technological distinction is found in the regulatory administrations of some

Member States, often to separate monopolistic provision from competitive provision of services<sup>222</sup>.

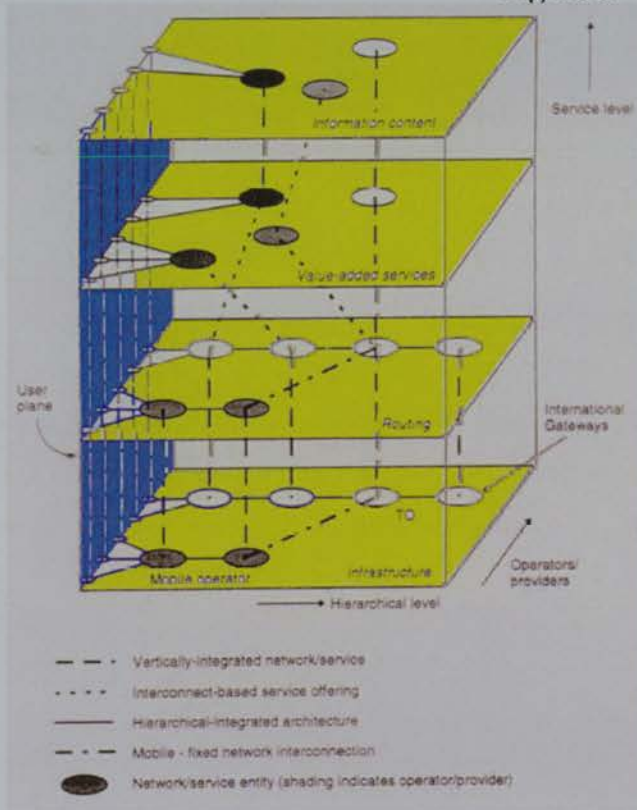
The European-American Centre for Policy Analysis put forward the view that this model could be expanded into three dimensions, where it shows more explicitly the possibility of competitive provision of resources.

To be able to distinguish between the different competing providers at each level, the four layers can be expanded into four service planes. In each service plane, the competitors are spaced apart in a horizontal direction, and the vertical direction indicates the hierarchical distance to the end user in the delivery chain of network components.

The figure 5 shows the three dimensional “Interconnection Space” with the four service planes. This interconnection space contains an overflow of internal

interfaces where network components belonging to a single telecommunications firm might be interconnected. The difficulty in selecting the best way of internal interconnection is a classical economic problem for every telecommunication company. In the classical monopolistic supply of telecommunications resources, the telecommunications organizations encompassed much of the interconnection space shown in the figure. The TO supplied all of the infrastructure components between the international gateways from the bottom level up, even including the end user’s terminal equipment. IBM used for this purpose an “end user certification”. In the early days of interconnection there only existed a few

Figure 5.



<sup>222</sup> Wissenschaftliches Institut für Kommunikationsdienste (WIK), Network Interconnection in the domain of ONP. November, 1994.

“international gateways”. Transit switches at the highest level, and, later, interfaces for user-access, entered the market as the terminal market gradually become liberalized. Obviously, these interfaces have become the most standardized and the TOs were also vertically integrated and supplied not only routing capability, but also value-added services.

Strong technological and economic forces make new external interfaces accessible. As an example, in the infrastructure plane of the figure an independent mobile operator, shaded in the figure, is interconnected to the TOs infrastructure at an intermediate or higher level of the architecture. The operator may also supply some of the routing services needed for mobile calls, interconnecting the signalling facilities with the TOs signalling network in another plane. The figure 5 also shows independent service providers in the value-added services and information level, which are interconnected to the TO for routing and infrastructure services.

The policy issues facing the European Union are to what extent the operation of a free market will lead to the benefits of a particular path through the interconnection area, and to what extent regulations are required to enforce these interconnection paths. As suggested earlier, regulatory intervention might be necessary to remove bottlenecks.

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Chapter 3.2

Interconnection from an Economic Perspective

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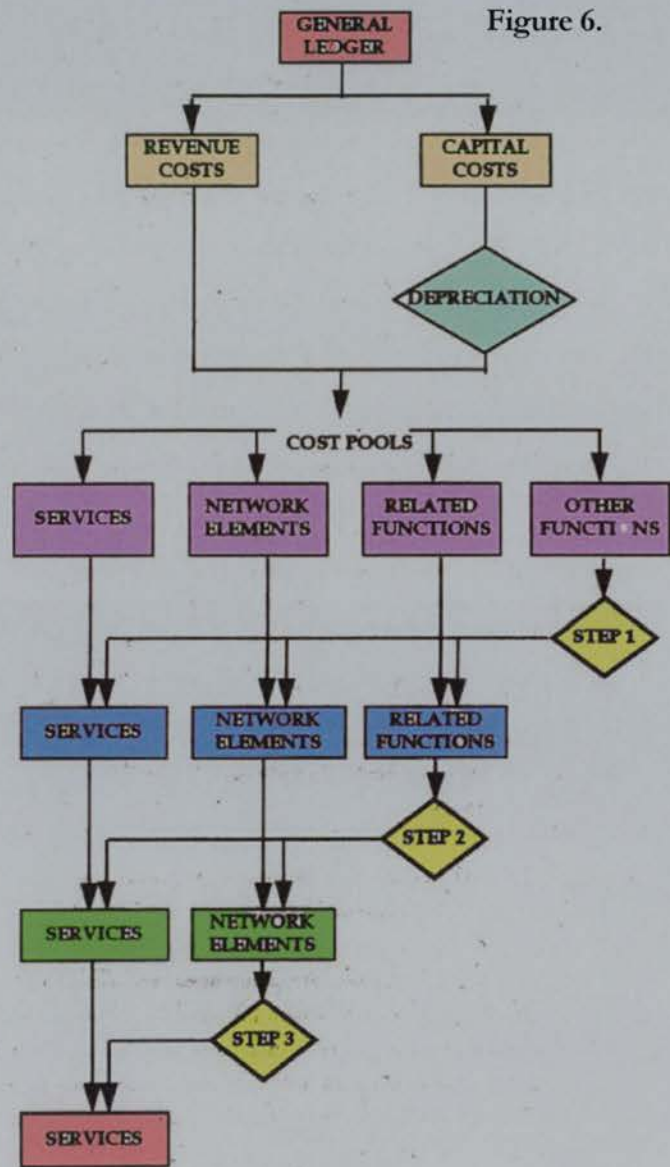
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Interconnection always involves a service rendered by one operator to another. This presupposes that the second operator wants to place a product on the market. Thereby, interconnection functions as almost any market transaction in everyday life. A firm wants to buy a product because it needs it.

Interconnection issues arise in relation to the category that has not specialized. A demander who has not specialized buys the input from a specialized producer. There are differences from the normal way the goods or services are exchanged in other areas. Interconnection is often seen as rising the problem of bottlenecks where the demander can not produce its own service and for legal and technological reasons can not produce the input itself. Further, the demander and the producer often compete with each other in the telecommunications sector. This leads to ongoing cooperation between the two parties that is far wider than that of a simple demander and producer.

Interconnection is highly desirable, but requires a significant degree of cooperation. The environment of this cooperation

takes place in a competitive situation between the parties. Too much cooperation will lead to an easy way of solving the technical problems, but results in an unwanted lack of competition, while too much competition, would lead to no pricing agreement ever being



reached. In a mature situation one can expect that the former monopolies will subside, and that the market for interconnection will offer a wide choice of interconnectors.

The problem of bottlenecks in the field of interconnection has received a lot of attention in many studies<sup>223</sup>. Bottlenecks have received careful examinations in USA antitrust policy. This evolved from a railroad case in 1912. Railroads had controlled the only bridge into St. Louis and denied competitors access. The Supreme Court decreed the bridge a bottleneck and declared that denial of access would be a restraint of trade in violation of the Sherman Act (essential facility). A bottleneck was described as the control of a facility by a single firm, which facility is essential for production, and where others are unable to duplicate the facility. Further, that denial of access would substantially harm competition, with an absence of valid business reasons for not providing access.

To solve the problem of bottlenecks, governmental intervention is necessary, but as it does not cater for all types of interconnection, this intervention has to be on a case-by-case basis. Cost accounting and cost information will play an important role in this regulatory environment. Costs will always be an important feature in interconnection regulation, especially in the development of tariffs. The more liberated the telecommunications market continues to be, the more vital is the information reflecting the costs. In the customer protection area, it will prevent customer exploitation and prevent anti-competitive pricing in business areas, thereby promoting customer choice through competition. Concerning social obligation, the special service prescriptions for TOs will fulfil public policy obligations.

The Commission carried out a study<sup>224</sup> on cost accounting methods and changes planned by TOs and NRAs. This study looks, in detail, at the telecommunications industries in the USA, Japan, Australia the UK, France, and Germany. Arthur Andersen<sup>225</sup> argued against such a study, since interconnection charges have developed differently in the various countries, depending mainly on the structure of the industry at the time competition was introduced and the different government objectives for the future structural development of

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<sup>223</sup> One of the most important: EAC (European-American Centre for Policy Analysis), Multilevel Regulation in Telecommunications. November, 1994.

<sup>224</sup> Wissenschaftliches Institut für Kommunikationsdienste GmbH, Regulatory Requirements on Cost Accounting Systems within the Framework of ONP. DG XIII Final Report. (February, 1992)

<sup>225</sup> Arthur Andersen, Study on Cost Allocation and the General Accounting Principles to be used in the Establishment of Interconnect Charges in the Context of Telephone Liberalization in the European Communities. Study for the European Commission. October, 1994.

the national telecommunications sector. Since the Commission used the study in developing the interconnect charges<sup>226</sup>, this work is, nevertheless, based on their study.

Interconnection develops as the market develops. This was clearly shown in the UK. “Issues concerning interconnection have been brought sharply into focus by the Government’s decision in 1991 to end the duopoly in wirelines and to open the UK Telecommunications Markets to greater competition”<sup>227</sup>.

To achieve a costing system one needs the cost data. The figure 6, on page 129, shows the flow of costs, from a company’s view, through the cost accounting system presented to the Commission by Arthur Andersen. This is traditionally done via the general ledger. The costs will then be identified as either revenues costs, costs which relate solely to the period covered by the statement, and capital cost, those costs which pertain to network plants, other fixed asset categories, and other costs for which the cost is spread over several years.

When the revenue and capital costs are identified they will be grouped into four cost pools:

- ◆ The Services pool can be directly identified with a service, such as wages of staff, cost of cell stations in mobile services, and depreciation of international gateway switches.
- ◆ The Network Elements pool contains the costs relating to the various components of transmission, switching and other network plant and systems. Consideration will be given to the network components which cannot be allocated directly to a particular service.
- ◆ The Related Functions pool contains the costs of functions necessary for the provision of service to the customer, such as billing, maintenance, and customer service.
- ◆ The Other Functions pool contains the costs of functions which are not related to the provision of service, but which are an important part of the operations of the company. For example planning, personnel and general finance.

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<sup>226</sup> The ONP Directive, Section VII 4.4: Principles for Interconnect charges to Public Networks.

<sup>227</sup> OFTEL Consultative Document issued by the Director General of Telecommunications: Interconnection and Accounting Separation. June, 1993.

The general rules for the process of cost attribution follows those set out in the leased line<sup>228</sup> directive, especially Article 10. (2). At step 2 of the figure 6, other function costs are allocated to either services, network elements, or related functions, and, finally, in step 3, the accumulated network elements costs are allocated to services to arrive at individual service costs. The recommendation given by Arthur Andersen and followed by the Commission said that:

Activity-Based Costing principles should be encouraged for use by TOs as a method for understanding the underlying costs and cost drivers, where Fully Distributed Costs or Embedded Direct Cost standards are used. The industry should agree the cost drivers and cost allocation and attribution methodologies to be applied. TOs should be encouraged to develop long run incremental cost information for pricing decisions. Until such time as long run incremental costs are practicable, interconnect charges should be based on Embedded Direct Cost plus a margin to contribute to the joint and common costs of the interconnected Operator. The size of the margin, above the embedded Direct Cost, should be determined by negotiation between the parties to interconnect. Only when there is a dispute should the Member States NRA become involved. A process for eliminating inefficiencies should be agreed between the NRAs and incumbent Operators. The Costs of inefficiencies in incumbent Operators should be calculated where a Fully Distributed Cost approach is used for interconnect charges. Such calculations should either be scrutinised by the NRAs or carried out by them. The cost of such inefficiencies should not be passed on to interconnecting Operators in the Interconnect charge and should only be shared where this is felt by the NRA.

Charges efficiency concerning interconnection is defined using a tripartite definition of economic efficiency<sup>229</sup>. Firstly, technical efficiency, which means that the operators in the telecommunications industry should use the telecommunications network resources as efficiently as possible to provide any given volume of traffic. Interconnection agreements

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<sup>228</sup> Council of the European Communities, Directive 92/44/EC of 5 June 1992 on the application of Open Network Provision to Leased Lines. (OJ L165/27).

<sup>229</sup> The European Commission DG XIII (Information society Directorate), Study on cost Allocation and the General Accounting Principles to be used in the establishment of Interconnect Charges ion the Context of Telephone Liberalization in the European Community.



should encourage efficient investment in network resources. The operators should discourage ineffective entry into the market and unnecessary duplication of resources.

There are many different definitions of efficiency. In the context of interconnection charges efficiency, the definitions used by the Commission in the interconnection directive<sup>230</sup>, which originated from the study<sup>231</sup> by Arthur Andersen will be applied. Three types of efficiency are used:

- ◆ The Dynamic Efficiency means that the telecommunications industry increases its level of productivity, through the use of new technologies and/or new management procedures, and responds rapidly to market needs. Concerning interconnection, it involves setting interconnect conditions, which do not constrain technical and market innovation, and setting interconnection charges which give incentives to the incumbent to improve its efficiency.
- ◆ The Static Allocative Efficiency requires the telecommunications industry to act in such a way that the economy as a whole uses resources efficiently, not just in creating services but also in consuming the services. This means that the customer or the end user prices should reflect costs of provision, so that the customer or end user will act in an economically efficient manner. The interconnect charges should reflect the relative cost of providing the interconnect services. The new entrant's cost structure, of which interconnect charges are a major part, will then reflect the incumbent's cost of provision, and the new entrant will have a strong incentive to reflect its cost in its end user prices.
- ◆ The Static Technical Efficiency requires that the operators which make up the telecommunications industry, use network resources as efficiently as possible to provide any given volume of traffic. In particular, interconnect agreements should encourage efficient investment in network resources. They should discourage both inefficient entry into the market and unnecessary duplication of resources. Interconnect charges which are set to low will encourage inefficient entry by operators who will be able to make money, not because they are more efficient than

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<sup>230</sup> The Interconnection Directive: Directive 97/33/EC. (OJ L 199/32). 1997.

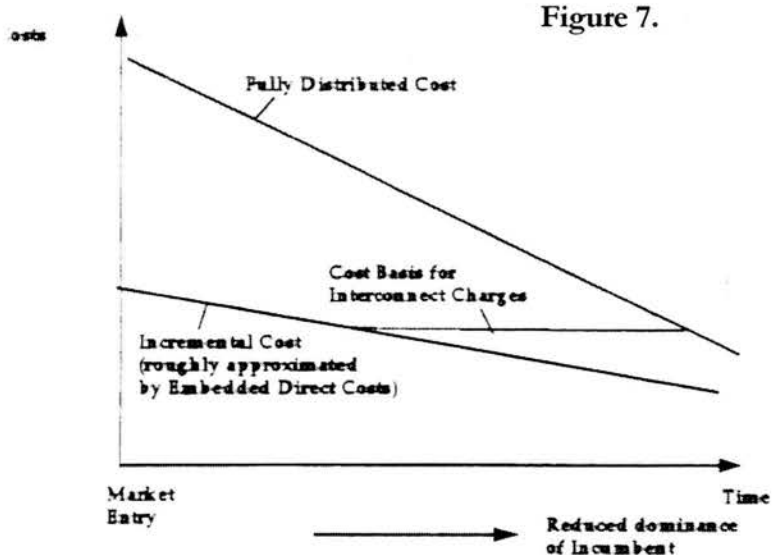
<sup>231</sup> Arthur Andersen Study on cost Allocation and the General Accounting Principles to be used in the establishment of Interconnect Charges ion the Context of Telephone Liberalization in the European Community. Study Prepared for the Commission of the European Communities DG XIII.

the incumbent, but because they are subsidized through low interconnect charges. On the other hand, interconnect charges which are set too high will discourage entry, or lead to unnecessary duplication of resources. The new entrant will build its own facilities and the country will lose the economies of scale which could be achieved through the incumbent providing the same facilities and providing them to the new entrant.

Furthermore, price rebalancing could help to remove historical discrepancies between tariffs and costs. This will then improve the allocative efficiency, and privatization can ensure, that the telecommunications organization needs to account to its shareholders for the profitability which it achieves. Particularly if coupled with price control regulation, the effect of privatization is to create further pressure within the telecommunications organizations, to drive costs down, and increase dynamic efficiency.

When studying these measures there seems to be very little scope to use interconnect charges directly to improve telecommunications organization efficiency. Interconnection with other operators will only have a marginal impact on the incumbent's business even after several years post liberalization, 1998. The level and structure of interconnect charges will not therefore affect the telecommunications organizations efficiency, at least not in the short term, however in the long term it will be a matter of survival. If the interconnection charges are set so as to enable competition, then they will have an indirect major influence on the efficiency of the incumbent telecommunications

organization. Subsequently, if the charges are set in a manner that discourages competition, they will indirectly have contributed to the continuation of the telecommunications organizations inefficiency.



In a competitive market the difference between the fully distributed costs and the long run incremental cost must be minimized<sup>232</sup>. This compromise is suggested in a study<sup>233</sup> by Ovum. This compromise encourages market entry and competition and puts incentives on the incumbent telecommunications organization to reduce costs through increased efficiency. The interconnection cost could be set on costs set below fully distributed cost.

The figure 7, on page 134, shows that the use of historical information from the incumbent operator's audited fully distributed costs, will allow interconnect charges to be determined in advance and provide transparency in the relationship between costs and charges. Initial interconnection at below fully distributed cost will put pressure on incumbents to become more efficient and redress any structural imbalances in the Interconnect administration, such as unequal access. The margin above embedded direct costs (the cost basis for interconnect charges) to be applied in the early stage of liberalization, should be established through negotiation between the interconnecting parties. Where this does not give rise to any agreement, the national regulatory authority should determine the appropriate margin.

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<sup>232</sup> The capital costs associated with changes in fixed assets capacity, often using a capacity cost approach.

<sup>233</sup> Ovum, *Interconnect: The key to Effective Competition*. October, 1994.

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**Chapter 3.3**

**Involvement of NRAs in Interconnection Agreements**

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The NRAs apply, on a day-to-day basis, the EU's telecommunications policy, and legislation of the terminals<sup>234</sup> and services<sup>235</sup> directives. The NRAs' responsibility covers front-line supervision of licensing, interconnection, type-approval, allocation, and assignment of frequencies, surveillance of usage conditions, and dispute resolution. The aim of the Community's deregulatory policy was that supply of telecommunications goods and services should be separated from the regulation of the telecommunications sector and such a separation of the NRAs, at least as a formal matter, from all public and private undertakings in the Telecommunications Sector has now been achieved in all Member States<sup>236</sup>.

Concerning the involvement of the NRAs in Interconnection agreements, at least four possible levels of involvement can be identified:

- ◆ on the request of either party, the imposition of contract terms for matters not agreed between the parties
- ◆ on the request of either party, the imposition of contract terms omitted from arrangements negotiated by the parties
- ◆ assistance from the NRA during the course of negotiations
- ◆ on the initiative of the NRA itself, after-the-event-intervention by the NRA to challenge or impose particular terms of interconnection

Coudert Brothers, in a study<sup>237</sup>, discuss a situation where the NRA has imposed particular terms. This is the question of the impact of Articles 81 and 82 of the EC Treaty. It seems to them that the articles should apply in a normal way to the agreement embodying such terms. It could also be argued, that if, as a result of the NRAs actions, the agreement contains terms which are anti-competitive, the Member State where the NRA is active may be in breach of Articles 3 and 5 of the EC Treaty.

Under such circumstances, the Commission could, of course, challenge such a practise of the Member State, through launching an action for failure to fulfil the European Community obligations pursuant to Article 226 against that Member State. In a decree, it

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<sup>234</sup> European Commission. Directive 88/301/EC. (OJ L 131/73). 27.05.1988.

<sup>235</sup> European Commission. Directive 90/388/EC. (OJ L 192/10). 24.07.1990.

<sup>236</sup> A list of the names and addresses of the NRAs can be found in the Commission publication regarding the conciliation procedure provided for under the Open Network Provision Leased Lines Directive, OJ C 214, 04.08.1994.

<sup>237</sup> Coudert Brothers. Competition Aspects of Interconnection Agreements in the Telecommunications Sector. Study for the European Commission. June, 1995.

was confirmed that the Commission could envisage the adoption of a decision under Article 86 (3) addressed to the Member State in question, although only in certain limited circumstances<sup>238</sup>. Such circumstances could be where the measures imposed by the NRA require an undertaking, which has exclusive rights to abuse its dominant position.

The Communication sees the NRAs as the front line in regulatory intervention concerning interconnection agreements. In some<sup>239</sup> of the Member States this intervention has already taken place. The majority of the telecommunications laws in the different Member States provide that whilst the parties should, in the first instance, endeavour to negotiate and agree terms and condition between them, where they fail to do so the matters in dispute may be referred to the NRA for resolution in some way. In at least four Member States interconnection agreements are subject to the approval of the NRA, whether or not they have been involved in the settlement of the applicable terms and conditions. Only two of the Member States go further than this, the United Kingdom and Greece, where the terms and conditions to be negotiated and ultimately determined by the NRA are set out in great detail.

At present, there is no requirement for uniformity of approach between the NRAs, and the focus is likely to be more on national, rather than EU Regulations<sup>240</sup>. The proposed directive<sup>241</sup> suggests more independent NRAs in the Member States. There could, therefore, be a possibility that an agreement will successfully pass the process of a NRA test and yet contain provisions that infringe Articles 81 and 82. In the case of Article 81, such agreements should be notified and if not they will be illegal and void of effect. Where properly notified it would be for the Commission to decide whether or not an agreement merited an exemption or a negative clearance. This is called by the Coudert Brothers, the "Double Jeopardy", where interconnection agreements need to pass through different screening processes which are applied by different authorities. There is a need for harmonization of the institutional approach to interconnection.

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<sup>238</sup> Joined Cases 48/990 and 66/990, *The Netherlands and Others v. Commission* [1992] ECR I-565.

<sup>239</sup> The United Kingdom, Germany, France, and Sweden.

<sup>240</sup> For a detailed discussion on this subject see: Institutional Aspects of EU Regulatory reforms in the Telecommunications Sector: An Analysis of the Role of National Regulatory Authorities, *Journal of Network Industries* 1:5-32. 2000. Kluwer Law International.

<sup>241</sup> European Commission. Proposal for European Parliament and Council Directive amending Council Directives 90/387/EC and 92/44/EC for the purpose of adaptation to a competitive environment in Telecommunications. (COM 97/236).

This double jeopardy also exists in the two-stage in the NRA-Commission, concerning agreements of national competition law and Treaty competition rules. For instance, agreements in the telecommunications industry which are subject to validation requirements under national competition law, may also come to be reviewed by the Commission under Article 81. Further, the interplay between NRAs for telecommunications and NCAs<sup>242</sup> generally is something that is dealt with at a national level. Where telecommunications regulation is inadequate in certain areas, the national competition law may fill in what is missing. This is the case in the United Kingdom, obviously to avoid the double jeopardy situation. In the United Kingdom, the Director General of telecommunications may consider the legality of provisions which are restrictive of competition, and which otherwise have rendered the agreement liable to registration with the NCA, which, in the United Kingdom case, is the OFT (Office of Fair Trading).

The solution to this problem could perhaps be that NRAs should (continue) to have responsibility for setting rules for interconnection at the local level, and for assisting in resolution of the disputes where the parties so require, but that the NRAs should be required to conform these rules to principles based on the competition rules and the Open Network Provision, to be set by the Commission.

An interesting discussion on institutional aspects of EU Regulatory reforms in the telecommunications sector, more specifically, an analysis of the role of the NRAs was presented by Damien Geradin<sup>243</sup>. He argues that the regulatory duties entrusted to the NRAs can be divided into four main categories:

- ◆ controlling access to the market
- ◆ controlling the behaviour of operators on the market
- ◆ ensuring the performance of universal service obligations
- ◆ settling disputes

This shows that the NRAs will play a crucial role in the implementation of the EU telecommunications regulatory package. Therefore, the creation and functioning of competitive telecommunications markets will in great part depend on the effectiveness with

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<sup>242</sup> National Competition Authorities.

<sup>243</sup> D. Geradin, Institutional aspects of EU Regulatory Reforms in the Telecommunications sector: An Analysis of the Role of National Regulatory Authorities . *Journal of Network Industries* 1: 5-32.

which NRAs exercise their regulatory duties. This was recognized by the Commission, which stated in its Fifth Report on Implementation “the new entrants have expressed fears that the concentration in the same hands of ministerial, regulatory and shareholder functions may lead to conflicts of interest, and they question the extent to which these tasks are being exercised independently”<sup>244</sup>.

Geradin concludes in his article, very rightly, that while the substance of the rules generally receives a great deal of attention, implementation aspects are often ignored despite their importance. The risk of such lack of attention is that, although in theory fully liberalized, the EU telecommunications markets will remain divided across national lines because of the remaining existence of inconsistent regulatory frameworks. Greater effort should thus be made at both national and EU level to ensure consistent implementation of the telecommunications regulatory framework by the NRAs.

It has been said by the operators, when discussing interconnection deals with BT, that BT requires the new entrants to present a united approach when negotiating with BT. If this is the case, it could well be that BT are forcing the new entrants, who obviously are competitors in the market, to give away their business strategy or, at least, to be forced to discuss it with their competitors. This could lead to higher prices for the customers as the interconnection charges will be negotiated through a united approach. If this is the case, it seems that OFTEL in the UK market is a weak player.

When considering the degree of centralization that is required for the implementation of EU telecommunications law, the approach adopted by the Commission is once again a compromise, this time between the current system which relies on the application of sector-specific regulation and a system whereby sector-specific regulation is phased out and replaced by competition law. This is also the conclusion reached by Damien Geradin in his study<sup>245</sup>.

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<sup>244</sup> European Commission. Annex III to the Fifth Report on Implementation, *Effective Application – Analysis by Member State*. 2000. 3.; Further for a good analysis on this issue see: W. Smith, *Utility Regulators – The Independence Debate* p. 127: Independence needs to be reconciled with measures to ensure that the regulator is accountable for its actions. Checks and balances are required to ensure that the regulator does not stray from its mandate, engage in corrupt practises, or become grossly inefficient.; For a discussion contrasting the differences between the continental and UK approaches in terms of administrative review see: *The gavel and the robe*. *Economist*: 7 August 1999, p. 27.

<sup>245</sup> D. Geradin, *Institutional Aspects of EU Regulatory reforms in the Telecommunications sector: An analysis of the Role of National regulatory Authorities*. *Journal of Network Industries* 1:5-32.



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**Chapter 3.6**

**Summary**

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This first part of the study examined the EC telecommunications law on its way to full liberalization, mainly from the 1987 Green Paper to the fully liberalized market, which was in place in 1998. The considerable achievement over this ten-year period must be acknowledged. The 1989 compromise between the Commission and the Council played an important role, but, as it was a compromise, it is inevitable that it had its weaknesses. Such terms as “services” (public/publicly available telecommunications services), “networks” “public telecommunications networks”, and, more importantly, “interconnection”, “access”, and “significant market power” are not, as yet, precisely defined. There can be no doubt that this will be clarified in the course of decision-making, by case law.

Further, part I examined how Article 86 was used by the Commission to force the liberalization process. It also showed how, regarding the 1987 Green Paper, the Commission on the one hand and the Council (and European Parliament) on the other, did not agree on the legal basis to carry out the Community’s objectives. Liberalization was the main objective for the Commission, by removing special or exclusive rights (from service other than voice telephony). The Commission removed the special and exclusive rights under Article 86 (3), as it considered the rights to be incompatible with the Treaty. Harmonization was the main objective for the Council and the European Parliament, which saw liberalization as a consequence of harmonization. They considered that all measures should therefore be based on Article 95. The Council disliked the fact that the Commission acted alone under article 86 and, eventually, a political solution took place, known as the Compromise of 1989. In the compromise, the Commission agreed to obtain the Member States support before enacting any directives under Article 86. The terminal equipment judgement later strengthened this link. Directives under Article 86 were then the instruments, in some literature called the “sword of Damocles”, for the set up of the ONP framework.

A conclusion that can be drawn therefore, is that “enforcement is the key to success”. If one looks at other sectors, such as energy and postal services, where the European Community is proceeding under Article 95, one realizes that in those sectors the progress is far slower and far less ambitious. The protest from the Member States, which was anticipated by the Commission, did not take place, at least not on the scale expected.

Further, and perhaps more interesting, is that after liberalization there is little room to apply Article 86 to the telecommunications sector, short of to the financing of the universal service. This can lead to the European Community relying, again, on Article 95 or, which is

preferable, replacing Article 86 (3), with Articles 81 and 82 and the merger control regulation, for the coming evolution of the Telecommunications policy. This will be discussed more closely under part III of the study.

Part I ended with a practical discussion of interconnection, the key element of Community telecommunications policy. The next part of the study will examine the position of the consumer in the telecommunications sector: what they expect, their demands, how the substitution of the fixed to mobile market is progressing, and how the consumer market has developed over time. This is by way of general background to the discussion that follows on mobile communications.

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**PART II**

**THE CONSUMER MARKET OF FIXED/MOBILE  
CONVERGENCE**

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**Chapter 4**

**The Consumer Market of Fixed/Mobile Convergence**

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The growth in mobile communication subscriptions during the 1990s has been remarkable and looks to remain rapid, although a slight downfall has been noted from the end of year 2000. Indeed, penetration rates which have been realized in Scandinavia, show that there is capacity for considerable further growth in the rest of Europe<sup>246</sup>.

As the penetration of mobile telephony in the consumer market rises, the issue of fixed mobile convergence will become increasingly important. Consumers are realising that they are paying different bills for fixed, mobile and Internet communications, even when the same company is delivering these services. Consumers would benefit in terms of convenience and cost if a single communications source were to deal with all their communications requirements.

The growth of fixed telephony in Europe during the 1990s has been steady but unexceptional, as shown in figure 8, on page 152. The demand for fixed telephone lines has been driven by business requirements and the needs of householders (the consumer sector). Growth in demand for new residential lines has been restricted by the limited growth in the number of households and the fact that penetration rates are above 90% in most European Union Member States. In recent years, some homes have been installing second lines for Internet and fax usage, but these are still in a small minority. The diagram below shows the development of fixed telephony of the 1990s.

By contrast, the growth in the number of mobile subscribers has grown dramatically throughout the decade, as shown in figure 9, on page 152. In 1990, the mobile telephone was the tool of senior executives and the rich. Currently, the mobile telephone is becoming a mass-market product, with penetration among the general public growing very rapidly indeed. The diagram below shows the growth of mobile subscribers over the decade.

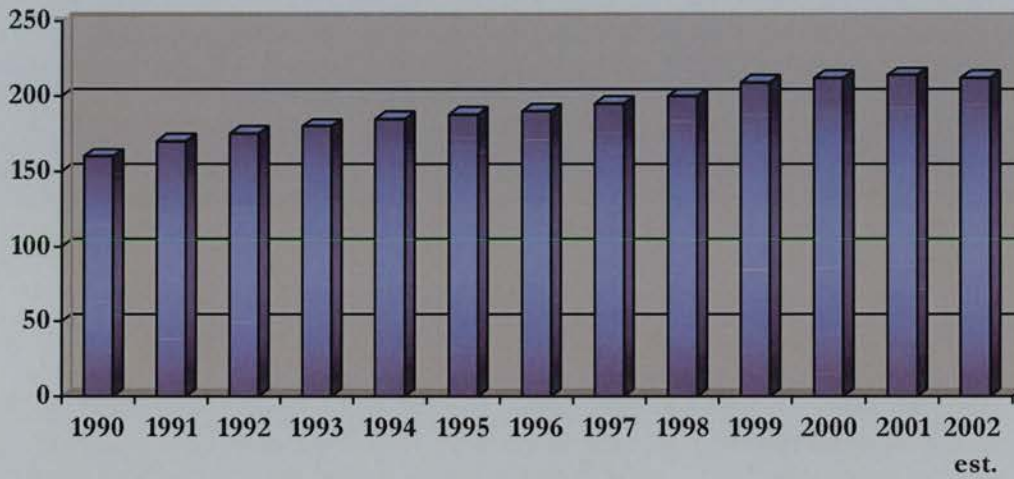
The market for mobile telephones is growing quickly and will soon be larger than the market for fixed telephone lines, which has already happened in Finland, where the penetration of mobile telephones, at 70%, is the highest in the world.

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<sup>246</sup> For a regular update of the consumer market penetration see [www.ispo.be](http://www.ispo.be), especially the Interconnection Atlas (web based only). The WEB site is undergoing a reconstruction, why it might be difficult to find the Interconnection Atlas.

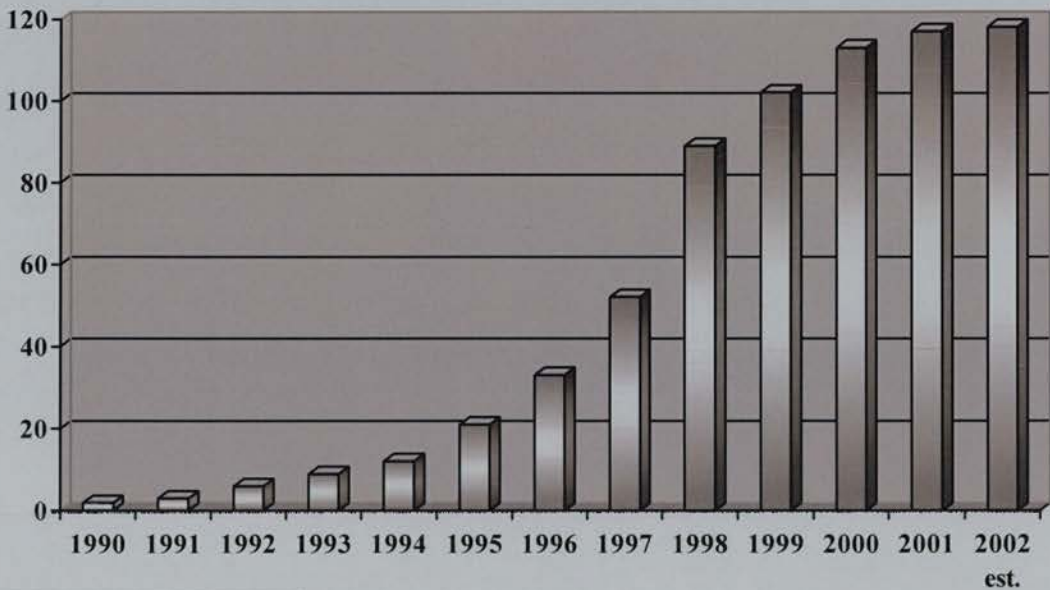
Fixed telephone lines installed in the EU, 1990 to 2002 (Millions) <sup>247</sup>

Figure 8.



Mobile telephone subscribers in the EU, 1990 to 2002 (Millions).

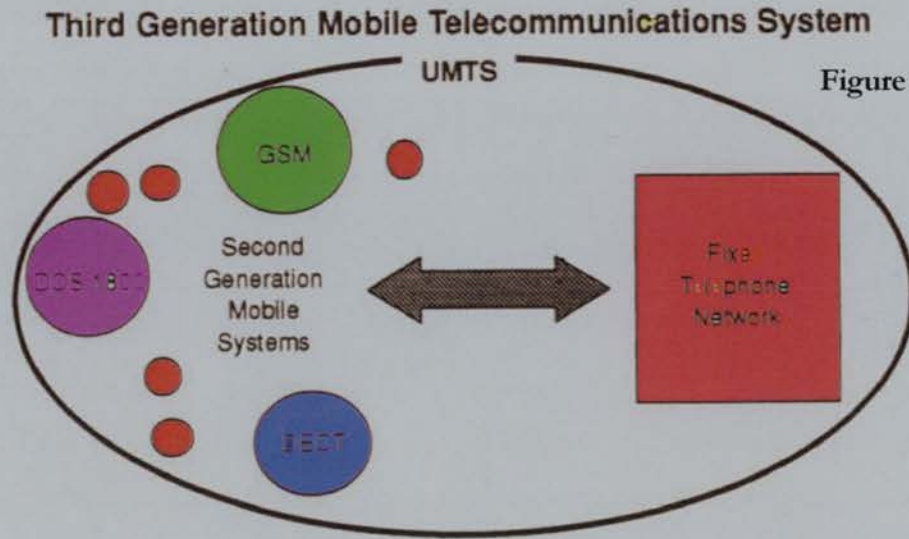
Figure 9.



<sup>247</sup> The two diagrams are from Consumer Demand for Telecommunications Services, Squire, Sanders & Dempsey. January, 2000. (The updates of the years 2001, 2002 are from the NUA Web site)

Until the mid-1990s, the prices for mobile services were high, and the operators did not market services to consumers, but as the business market began to slow down, mobile operators turned to the consumer market, marketing packages designed to appeal to the private individual.

Consumers responded, slowly at first, to the attention of the mobile operators. Innovation in tariff packages encouraged subscription, and as the advantages of mobile ownership became obvious, increasing numbers subscribed. By 1997, packages were being designed that made it practical to give a mobile telephone and one year's subscription as a gift. One problem held back mobile telephony as a mass-market phenomenon. In common with fixed services, mobile services exposed their owners to debt if not used carefully. While for many consumers this was not an issue, for a large number of people the prospect of falling into debt was a real restriction to subscribing. The introduction of pre-paid services in late 1995 offered a means to subscribe to mobile services without that risk, and launched mobile telephony as a real mass-market service<sup>248</sup>.



<sup>248</sup> An interesting discussion on this subject is done by WIK in a Study called Re-examination of the scope of the universal service in the EU. Bad Honnef. April, 2000. In the study WIK discusses whether universal service obligations should be expanded to cover Internet services. Their analysis is based on consideration of E-commerce, surfing, IP telephony and fax, E-mail, Broadcast E-mail and video-conferencing; they conclude that apart from E-mail and Broadcast the rest should be covered by universal service provisions.



Most of the growth in mobile telephone subscriptions comes from consumers. Most of the consumer subscriptions of mobile services have occurred since the launch of second-generation (2G) mobile services. Over the next five years, third generation (3G) mobile services will be installed, figure 10 on page 154 is illustrating the 3G system, offering higher quality voice communications and data communications at speeds that will enable users to access the Internet and corporate intranets fast enough to allow realistic use of the services available.

It is likely that in the beginning of the development of 3G services, the focus will be on the requirements of the business customer. The price of 3G handsets is likely to remain sufficiently high to deter consumers from 3G services for some time. However, it is probable that operators will migrate consumers to 3G networks, in order to utilize fully their high spectral efficiency.

The increasing popularity of mobile communications, in combination with the high penetration of fixed telephony, will cause the market for converged services to become significant in the coming decade. It is very likely that packages offering fixed and mobile communications, such as those which are emerging in the market from organizations such as VIAG Interkom in Germany and WIND in Italy, will see a large adoption among business and consumer customers over the coming years. It is most likely that the majority of telecommunications customers will subscribe to some form of converged service within ten years. The motivation to do so will be strong, as the service providers are offering tolls to keep customers up to date with the latest developments in every area of telecommunications at the best prices.

As it is likely that the majority of customers will subscribe to some form of converged service, the nature of the regulatory regime for those services needs to be considered. The current fixed and mobile regulatory regimes are very different. Regulation of the fixed market tends to focus on monitoring the activities of the incumbent operator and ensuring that other operators can compete on a fair basis. Mobile markets have historically been more competitive, and the asymmetric nature of regulation of these markets has not been as prevalent as for fixed communications. Other obligations on incumbent operators in fixed markets, such as universal service, have no equivalent in the mobile sector.

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**Chapter 4.1**

**Consumer Expectations**

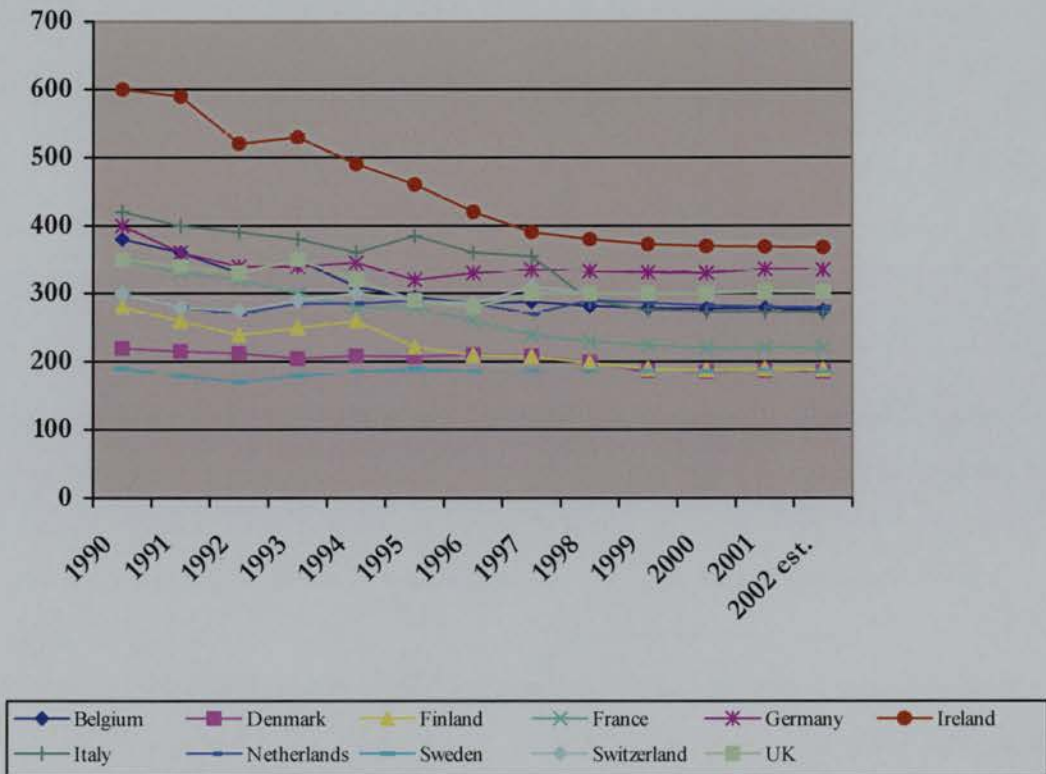
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The main cause for the increase in demand for mobile telephony among consumers has been the falling price of mobile handsets and services. The overall cost of using fixed services has also been falling steadily, but not as rapidly as the cost of owning and using mobile services. The 1990s have seen the cost of communications fall in real terms. This reflects decreases in the cost to telecommunications operators (TOs) of offering telecommunications services and, to some extent, the effect of competition. The diagrams below show the falling cost of fixed, figure 10, and mobile services, figure 11, respectively, to a residential user.

The total cost per line to a residential user of fixed telephony, 1990 to 2002<sup>249</sup>.

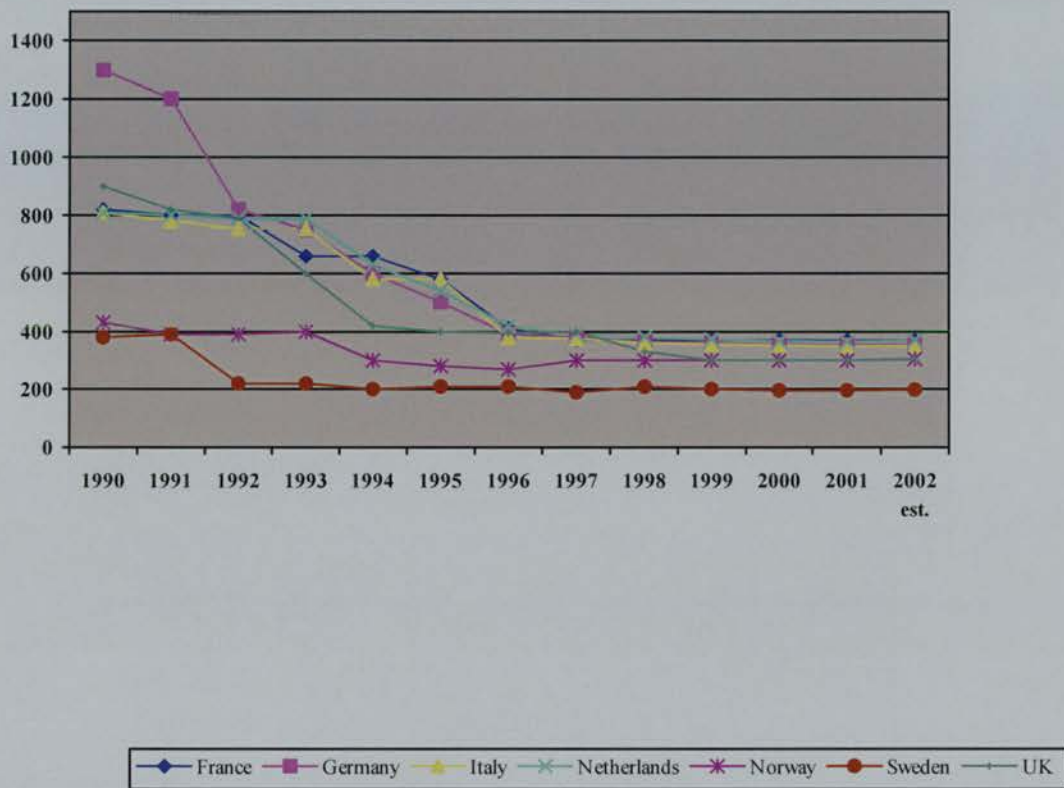
Figure 11.



<sup>249</sup> The diagrams are from the Analysis Study Fixed and Mobile Convergence and the 1999 Review . Luxembourg. January, 2000. The figures for 1999 and 2000 are from: European Commission. The Sixth Report on the Implementation of the Telecommunications Regulatory Package (COM 2000/814). Brussels. 07.12.2000. The figure for 2001 and 2002 are from the NUA web site.

The total cost of a mobile subscription to a residential user, 1990 to 2002.

Figure 12.



The two diagrams, figure 11 on page 159 and figure 12, show that there has been a dramatic decrease in the cost of a mobile telephone subscription to a residential user over the 1990s – a much faster fall in cost than observed for fixed communications (except in the Scandinavian countries), and that the total annual cost of using a mobile telephone is now close to that of using a fixed telephone line<sup>250</sup>.

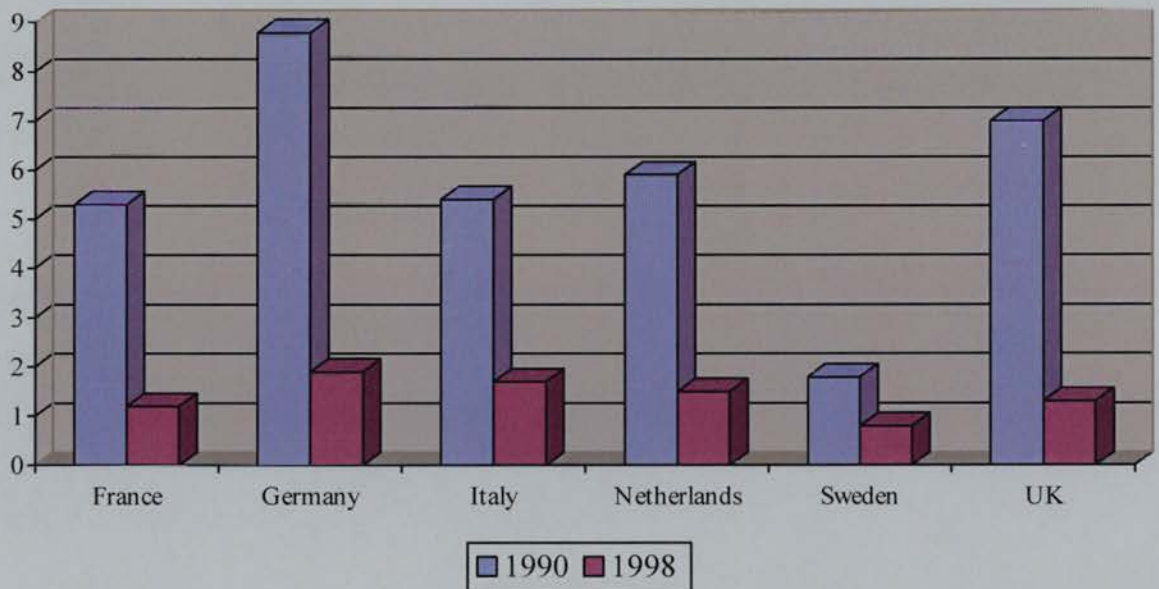
However, it is not correct to say that a user could move all calls to a mobile from a fixed line at little cost. The diagrams show the average cost of having a fixed line and a mobile based on average usage of these services by a residential customer. The calls used to calculate the fixed and mobile costs are very different, because of the different ways in which fixed and mobile telephones are used.

<sup>250</sup> As is pointed out in the Analysis Study, *Fixed and Mobile Convergence and the 1999 Review*, this takes into account that users make fewer calls on a mobile than on a fixed line.

In fact, the cost of using a mobile instead of a fixed telephone for a given set of calls would result in a cost increase of between two and three times, depending on which Member State the customer lives in and which mobile service provider is chosen. However, this cost for mobile is much smaller than it used to be, and is falling. The falling price (in real terms) of owning a mobile, and increasing individual wealth enjoyed through economic growth, have combined to make mobile communications affordable to consumers. The figure 13, below demonstrates how the affordability of mobile telephony has increased during the 1990s.

The cost of a mobile for a residential user as a proportion (%) of GDP per capita, 1990 and 1998<sup>251</sup>

Figure 13.



The fall in the price of mobile services during the 1990s has been dramatic, compared to the very modest reduction in the price of fixed services. One can easily think that mobile prices will eventually reach those of fixed services, or even fall below them, in certain Member States. As pointed out in the analysis study<sup>252</sup>, this is unlikely to happen, mainly because the supply of mobile capacity is limited by spectrum availability. This has not proved

<sup>251</sup> For a regularly updated version of the costs see [www.ispo.be](http://www.ispo.be), *The Status Report on EU Telecommunications Services*.

<sup>252</sup> Fixed and Mobile Convergence and the 1999 Review, page 16 ff.

to be a significant problem so far, but difficulties are anticipated in the future as demand is likely to outstrip the available spectrum. Price is one factor that will be used to manage demand for mobile services. Fixed services, on the other hand, face no such capacity constraint. The second reason could be that the fall in prices for fixed communications services seen thus far is likely to be only the beginning of a long series of real reductions in the price of fixed communications, as the spread of Internet Protocol (IP) communications increases data communications and dramatically reduces the price per bit carried of voice communications.

For these reasons, it will be advantageous to use mobile communications instead of fixed communications. This advantage will ensure that users will require converged fixed and mobile services in the future and will not transfer completely to mobile communications.

One significant difference between the fixed and mobile communications sectors is the differing level of innovation in the pricing of services. Fixed TOs have tended to offer very straightforward packages to residential users, involving the payment of connection, rental, and usage fees. Discounting has been introduced in the last few years, but is generally restricted to “Friends & Family”-type discounts.

The mobile industry, on the other hand, has shown great innovation in pricing its services. It has tended to be much more flexible about bundling connection and handset costs with usage charges, in order to lower the barriers to entry for residential customers. Some examples of the innovative approaches to pricing which operators have adopted are<sup>253</sup>:

- ◆ personal security tariffs

These services were priced to have a low rental charge, but the cost per minute using the telephone was high.

- ◆ low-user tariffs

These tariffs were designed to be affordable to the occasional user of mobile telephony.

- ◆ bundled minutes

These were designed to reassure the user about the amount of money that they would be liable to pay for the service each month.

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<sup>253</sup> These examples are from the Analysis Study, but could also easily be found in any commercial TV advertising or newspaper advertisement.

- ◆ home-zone packages

These packages began as an attempt to encourage customers to use their mobile telephone from home. This offer was perhaps not one of the best, as the consumers rightly used the fixed telephone when at home, as it was, and is, much cheaper to do so.

- ◆ free off-peak calls

This offer was launched by Mercury One2One<sup>254</sup> in the United Kingdom to attract customers, which they certainly did. However, the offer was not given to new customers, as the existing customers reserved the right to free off-peak calls. The result was, of course, that One2One carries much more traffic than any other operator in the United Kingdom and has the smallest number of customers.

- ◆ pre-paid services

This is probably the best offer in the mobile communications market<sup>255</sup>. Analysis is of the opinion that it revolutionised the mobile market and made it possible to have a mobile without the danger of running up debts. The result has been the launch of a real mass market for mobile telephones.

Such innovation offers a great deal of flexibility for consumers to find a package which suits their requirements.

Pricing innovation offers a great deal of flexibility for consumers to find a package to suit their requirements, but it can also create confusion for the user, as there is a confusing selection of options available to choose from. The opportunities and confusion that face the consumer is likely to increase as more converged fixed and mobile services are offered. From the subscriber's point of view, the integration of fixed and mobile services can occur in different ways. At the simplest level, the consumer receives a single bill and uses a single telephone number or liaises with a single sales and service provision organization<sup>256</sup>. In most cases, this still requires two terminals (one for fixed and one for mobile services). These types of converged services have obvious benefits for consumers in terms of convenience. It

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<sup>254</sup> For a description of the Company and the Company's offer, see <http://mercury.uk>.

<sup>255</sup> One of the main parts in Wissenschaftliches Institut für Kommunikationsdienste (WIK) concerns prepaid services as an affordability issue under the scope of universal service. The Study can be downloaded from <http://wik.org>.

<sup>256</sup> Initiatives like the European VPN Users Organization (EVUA) ensure that operators offer a One-Stop-Shop for telecommunications services.

is clear that the advances in technology have supported the introduction of such services. Many companies now use billing platforms that can produce consolidated bills using information from quite different fixed and mobile networks<sup>257</sup>.

Intelligent network functionality has enabled personal numbering to be introduced, where the called party is “found” on whichever telephone is in service. Further developments include the actual sharing of infrastructure between mobile and fixed networks, which is the subject of ongoing work under the ACTS programme<sup>258</sup>.

Many companies have recognized that there is a potential market for converged services. There have been alliances between fixed and mobile service providers across Europe, being able to offer a single point of contact for sales and customer support. Many of these alliances are also offering Internet access, recognizing the fundamental role that Internet access is playing in the communications requirements of consumers.

At this part of the study, a selection of the combined fixed and mobile products and services which operators have launched, will be identified. This will be of importance when discussing the different areas in Chapter 4.1, Consumer Expectations. Therefore, part from the services that integrate fixed and mobile services, those services that aim to substitute fixed with mobile services will be discussed, as these will present important regulatory implications for consumers.

At the beginning of fixed/mobile convergence, integration has largely been concerned with packaging together existing services offered by fixed and mobile operators. Examples which are well established are:

- ◆ personal numbering. Customers have only one telephone number. This is made possible using intelligent networking functions, which check in the first instance whether the mobile telephone is switched on. If it is not, the call is routed to the fixed network number. If this is also unavailable, the call is routed to a voice mail service, which can be accessed from either telephone. A number of packages offer a combined subscription that is cheaper than buying individual fixed and mobile subscriptions. Examples of this type of service include the Duet

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<sup>257</sup> For a deeper discussion on this subject see Part I: 2.7 The Numbering Environment and 4.1.2. Number Portability.

<sup>258</sup> ACTS: BAM-G2: Sharing the access network infrastructure in next generation communications systems .



package offered by Bergamo in Belgium and Tele Danmark in Denmark, BT's Flexinumber in the United Kingdom, and TELE2 in Sweden. Similar services are widely available from both fixed and mobile operators. One problem with that service concerns the fact that it may not always be possible to offer the same degree of information on the combined bill as was offered on the previously separate fixed and mobile bills<sup>259</sup>.

- ◆ combined billing. Operators produce combined bills for mobile and fixed services, which are provided by separate networks. Customers receive a single bill for both their mobile and fixed terminal usage.
- ◆ single handsets. Services which offer the convenience of a single handset have been launched in Europe. BT Cellnet recently began commercial provision of its Onephone product in the United Kingdom. This incorporates a DECT and a GSM telephone in a single handset. The customers still have separate numbers for mobile and for fixed services, but can subscribe to a personal number so that callers can find them more easily. The benefit of this service is that the telephone uses the fixed network when in range of the DECT base station (typically up to 100 metres from the home), giving the subscriber the benefit of calls over the fixed network which are cheaper. When outside this range, the telephone switches to the cellular network. A selection of integrated services is described below:
  - ◆ Atlantic Telecom (UK)<sup>260</sup>. The UK fixed wireless access operator Atlantic Telecom has recently announced a service called All in One, which uses the BT Cellnet network. It offers two fixed lines and one mobile, combining both fixed and mobile charges in a single bill.
  - ◆ RSL COM (UK)<sup>261</sup>. The fixed telecommunications operator RSL COM announced plans in late 1998 to offer single billing for fixed and mobile services, following its acquisition of the mobile service provider Motorola Telco.
  - ◆ Viag Interkom (Germany)<sup>262</sup>. In July 1999, Viag Interkom launched the Genion service. Using a single handset, subscribers can make and receive calls whether at

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<sup>259</sup> Criticism on this issue has been raised by both OFTEL in the United Kingdom and by Konsumentverket (Consumer's Organization) in Sweden.

<sup>260</sup> For a full view of the concept of the offer, see [www.atlantic.telecom/uk/flash-index.htm](http://www.atlantic.telecom/uk/flash-index.htm).

<sup>261</sup> For a full view of the concept, see [www.rslcom.co.uk](http://www.rslcom.co.uk).

home or on the move on a single fixed network number. At home, tariffs are linked to Viag Interkom's fixed network, while on the move the call is charged at a mobile call rate. Genion offers one number, a single voice-mail, a single bill, and a single contract.

- ◆ WIND (Italy)<sup>263</sup>. WIND, the new third Italian operator jointly owned by ENEL, Deutsche Telekom, and France Telecom, launched services aimed at the consumer sector on 1 March 1999. It has national fibre infrastructure and a license to provide dual-band GSM 1800 mobile services. WIND currently offers a single bill for fixed and mobile traffic, and free calls to and from WIND mobile and fixed telephones held by the same subscriber. Other measures to make the package more attractive to consumers include the "Best Option Plan", where the customer's bill is checked and automatically credited if the service could have been cheaper using an alternative tariff package.

Newer operators, such as VIAG Interkom in Germany, are building new, fully integrated mobile and fixed networks. The benefit to the consumer of integrating new fixed and mobile networks is that a single number can be given to the customer, rather than a personal number that diverts to an existing either mobile or fixed number. In this case, calls from the mobile network are planned to be priced at approximately the same level as those from the fixed network (or some average level between typical local and national fixed call rates).

As the price of making mobile calls falls nearer to that of using fixed services, and as the quality and coverage of mobile services improves, many mobile operators will be offering services designed to make the mobile telephone the primary telephone service. These services do not represent integration, but indicate an important development of the mobile market. This suggests that the cellular mobile telephone will increasingly be used in situations where a fixed telephone was used previously. For the consumer sector, this will probably result in that the mobile telephone is used in the home.

One example of mobile services that substitute for fixed is home-zoning, in which special tariffs, closed to the fixed rates, are applied to calls made in a limited area in or around the subscriber's home or office location.

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<sup>262</sup> For a full view of the concept, see [www.viagintercom.de/index/indexf.htm](http://www.viagintercom.de/index/indexf.htm).

<sup>263</sup> For a full view of the concept, see [www.wind.it](http://www.wind.it).

Outside this area, normal GSM tariffs apply. Tele Danmark offers a service of this type called the Zone. In addition, in Germany, VIAG Interkom began a pilot phase of a home-zone service in May 1999 involving 500 test subscribers in Berlin and Munich. The commercial launch of its home-zone service occurred in July 1999. VIAG Interkom's intention is that, within the home-zone, which covers a radius of up to two kilometres from the subscriber's home, calling charges will basically be the same as fixed network fees. Outside the home-zone, customers will pay the customary mobile network calling rates.

Ericsson<sup>264</sup>, which was developing GSM home base stations, abandoned the initiative in late 1998; there is a possibility that this concept will become a commercial reality in the future. Another option that was tried in the past, provided mobility using the fixed network. It was intended to give the subscriber the benefits of mobility over a limited area while offering typically lower fixed tariffs. The DECT standard has provided the basis for this mobility solution, enabling traffic to be kept on the fixed network. DECT uses the spectrum between 1880 MHz and 1900 MHz and has a very limited range (the household cordless DECT-based telephones today have an estimated range of only 100 metres). However, by using a larger number of more powerful base stations, it is possible to cover a region with DECT. Telecom Italia and Finnish fixed operator Helsinki Telephone Company have both offered subscribers mobility using DECT technology, although they are not currently doing so. Telecom Italia launched its Fido service in 28 cities in January 1998. A surcharge was applied to calls made when calling from outside the home. Helsinki Telephone Company's DECT City telephone service was introduced in 1994. This provided coverage in the Helsinki area only and was targeted primarily at business users. It was priced at the same rate as fixed services and actually cheaper than cellular mobile rates.

Manufacturers such as Ericsson have developed a new specialized terminal, which can be used as a normal cellular telephone and a Professional Mobile Radio (PMR). The terminal is equipped with a Push-To-Talk (PTT) button, a built-in loudspeaker, and a special emergency button allowing dialling public emergency numbers. Even when the terminal is used in PMR mode, it operates in the 900/1800 MHz frequency bands. This new system could be introduced on existing GSM networks by establishing a new server which will

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<sup>264</sup> Sweden's major mobile telephone manufacturer.

connect to the GSM Mobile Switching Centre and use the GSM network to provide PMR functionalities such as group calls and PTT operations.

As more advanced mobile data services are launched around Europe, it is likely that they will become more fully integrated with fixed data services. A number of operators are trialling systems that allow subscribers to update the telephone directory held on their mobile telephone subscriber interface module card, from an application that resides on their fixed PC at home. Unified messaging services, such as those offered by Telia<sup>265</sup> since early in 1998, provide customers with access to integrated voice, fax, e-mail, and Internet services via their cellular telephones or other Web-enabled devices, such as smart telephones and Personal Digital Assistants. In the same way that voice-mail retrieval is currently available from either fixed or mobile telephone terminals using today's personal numbering services, one can expect all electronic messages to be also available from a fixed or mobile terminal in the near future.

Overall, there are significant opportunities to increase consumer convenience in the use of data services delivered to fixed and mobile terminals. Internet telephony is the term used to refer to the transmission of telephone calls over the Internet. Until recently, Internet telephony consisted of sending voice calls from one PC to another via the Internet. A number of commercial operators are now introducing other services that make Internet telephony more attractive to consumers, including PC-to-mobile phone, telephone-to-PC, telephone-to-mobile phone, and Internet fax services. As the Internet will be used almost everywhere, it is quite possible that it will become a universal transmission medium for all services, including voice, data, and video.

The widespread availability of Internet connections, which are capable of carrying all types of services, together with a rapid take-up of other Internet-based services and technologies, could lead to a very sharp transformation of the telecommunications industry. It could, for instance, bring about a collapse in voice service pricing as Internet based voice services become available for the same "price per bit" as other Internet based data services.

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<sup>265</sup> Sweden's major telecommunications operator.

This could have an effect on the pricing of interconnection<sup>266</sup>, which would move from using a duration-based charging mechanism to one based on the volume of data transmitted.

Internet telephony is not currently encompassed by legislation affecting voice telephony, although as the reliability and quality of voice calls carried over the Internet improves, this may need to change. In its Green Paper<sup>267</sup>, however, the Commission suggested three possible options for regulation:

- ◆ remaining with the current approach and separate regulatory frameworks for telecommunications and media, extended to new converged activities when required
- ◆ developing a new framework for converged activities alongside the existing ones
- ◆ fusing all existing framework into a single new converged framework<sup>268</sup>

As pointed out by P. Larouche<sup>269</sup>, competition law itself has not converged and it will need to evolve before it can be used to give the impulse EU regulation in a converged telecommunications and media sector.

A wide range of services that bring fixed and mobile service offerings together are currently being offered to the consumer. In the future, many more advanced services of the type currently offered to businesses may well also be extended to the consumer sector.

Undeniably, fixed/mobile convergence is a result a commercial reality.

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<sup>266</sup> For a view of the present pricing of interconnection, see chapter 3.2, Interconnection from an Economic Perspective.

<sup>267</sup> Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implication for Regulation . (COM 97/final). 03.12.97.

<sup>268</sup> For a description of the EU regulatory framework see: T. Kiessling and Y. Blondel, The EU regulatory framework in telecommunications . Telecommunications Policy 571. 1998. See also, worth special emphasize on Convergence, the good study by: T.F. Baldwin, D.S. McVoy, and C. Steinfeld, Convergence: Integrating Media, Information and Communication Sage: London. 1996. For an interesting view of the public consultation see: European Commission. Results of the Public Consultation on the Green Paper . (COM 99/108 final). 10.03.99.

<sup>269</sup> The detailed developments are described in: P. Larouche EC competition law and the convergence of the telecommunications and broadcasting sectors . Telecommunications Policy 219. 1998.

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Chapter 4.1.1

**Consumer Protection in the Telecommunications Sector**

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Consumer protection policy plays two important roles in the context of telecommunications regulation. The first role is to set fundamental policy goals that shape the formation of other telecommunications policies, e.g., number portability and carrier selection. The second role is to provide a set of measures intended to protect consumers, which are independent of other policies, e.g., consumer information policies.

The Amsterdam Treaty amended the EC Treaty to address the special role of the consumer in EU law and policy. Article 153 (1) states, “In order to promote the interests of consumers and to ensure a high level of consumer protection, the Community shall contribute to protecting the health, safety and economic interests of consumers as well as to promoting their right to information, education and to organize themselves to safeguard their interests”. Article 153 (2) requires that “consumer protection requirements . . . be taken into account in defining and implementing other Community policies and actions”.

In the Consumer Policy Action Plan 1999-2001, the Commission comments that “the importance of the inter-linkages between consumer policy and other policies is set to grow” due to economic as well as political presents, and that it will bring “a new influence for consumer policy that will have to be matched by a new maturity on the part of consumers and their representatives”. Consumer interests and their relationship with other policies have become essential components of policymaking, and consumers’ awareness of their rights is leading to a greater recognition of their responsibilities.

There is a political will at Community level to involve consumers and their representatives in the definition and implementation of their rights. These rights fall into five categories:

- ◆ the right to protection of health and safety
- ◆ the right to the protection of economic interests
- ◆ the right to redress
- ◆ the right to information and education

- ◆ the right of representation (the right to be heard)<sup>270</sup>

In the telecommunications sector, the universal service rights supplement these basic rights. Universal service refers to “a defined minimum set of services of specified quality which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price”<sup>271</sup>.

Unlike basic consumer rights, which are designed to correct the imbalance between consumers’ vis-à-vis producers, universal service rights effect a redistribution of resources, ensuring that all consumers have access to a minimum set of services that are necessary to participate in the information society.

Apart from the concept of universal service, a range of legislative instruments exists at Community level, implemented and complemented by national legislation, which addresses issues relating to the protection of consumers arising in the context of their relationships with service providers. Five different phases of such relationships can be noted<sup>272</sup>, which are which are presented in figure 14, on page 175, together with the specific telecommunications matters raised at each stage<sup>273</sup>: During each of the phases, consumers are protected by a variety of general Community legislative instruments, which impose harmonized protection requirements across all industrial sectors. These instruments include:

- ◆ the data protection directive<sup>274</sup>
- ◆ the misleading advertisement directive<sup>275</sup>

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<sup>270</sup> See, e.g.,: European Council. Resolution of 14 April 1975 on a preliminary programme of the European Economic Communities for a consumer protection and information policy (First Consumer Programme) . (OJ 1975 C92/1); European Council. Resolution on a second programme for a consumer protection and information policy (Second Consumer Programme) . (OJ 1981 C133/1); European Council. Resolution of 23 June 1986 concerning the future orientation of the policy of the European Economic Community for the protection and promotion of consumer interests (Third Consumer Programme) . (OJ 1986 C167/1).

<sup>271</sup> European Parliament and European Council. Directive 98/10/EC of 26 February 1998 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment, Article 2.2(f) . (OJ L101/24). 1998. Art. 2.2 (f).

<sup>272</sup> European Telecommunications Office (ETO). Final Report on Consumer Protection for the European Commission . January, 1998. 4.

<sup>273</sup> For an overview of the telecommunications sector in this area see: William H. Melody, ed., Telecom Reform: Principles, Policies and Regulatory Practices. (Technical University of Denmark, 1997).

<sup>274</sup> European Parliament and European Council. Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and the free movement of such data. (OJ 1995 L281/31).



- ◆ the unfair contract terms directive<sup>276</sup>
- ◆ the distance selling directive<sup>277</sup>
- ◆ the right of redress directive<sup>278</sup>

Figure 14.

Phase	Consumer Protection Issues
Pre-sale	Information to Consumers Services Quality Tariffs Coverage
Sale	Fair Contracts
Usage	Adequate Quality of Service Technical Quality Commercial Quality Mastering of Consumption Billing Accuracy Non-abusive use of Information on Consumers Protection of Privacy
Termination	Non-abusive Disconnection
Continuous	Easy Resource Procedures Within the Company (quality management) Out of court Procedures Access to Courts

<sup>275</sup> European Council. Directive 84/450/EEC of 10 September 1984 relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning misleading advertising. (OJ 1984 L250/17), as amended by: Directive 97/55/EC of 6 October 1997. (OJ 1997 L290/18).

<sup>276</sup> European Council. Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts. (OJ 1993 L95/29).

<sup>277</sup> European Parliament and European Council. Directive 97/7/EC of 20 May 1997 on the protection of consumers in respect of distance contracts. (OJ 1997 L144/19).

<sup>278</sup> European Parliament and European Council. Directive 98/27/EC of 19 May 1998 on injunctions for the protection of consumers' interests. (OJ 1998 L166/51).

In the telecommunications sector, the following sector-specific Community legislative instruments impose a more limited range of harmonized consumer protection requirements:

- ◆ the telecommunications data protection and privacy directive<sup>279</sup>
- ◆ the ONP voice telephony directive<sup>280</sup>
- ◆ the interconnection directive<sup>281</sup>
- ◆ the licensing directive<sup>282</sup>

In accordance with their different national legislative traditions and the principle of subsidiarity, Member States have addressed consumer protection in very different manners, although all Member States consider consumer protection matters to be issues of major importance. In Spain and Portugal, for example, consumer protection goals have been protected in the constitutions. Consumer protection issues in the telecommunications sector are regulated based on general horizontal legislative instruments adopted by the Member States. In a number of Member States, however, these general measures may be complemented by telecommunications-specific instruments, e.g., Denmark, Finland, and Germany. Other Member States rely exclusively on horizontal legislation, implementing the specific requirements of the European telecommunications harmonization directives by including specific conditions in telecommunications network and service provider licenses, e.g., France, Ireland, and the United Kingdom.

The nature of mobile telephony and integrated fixed and mobile services is changing very rapidly. It is, therefore, important to understand the concerns that the consumer will have, in order to develop the regulatory framework best able to support them.

This part of the study will discuss some of those concerns and how these concerns are addressed under current legislation, including the ONP voice telephony directive:

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<sup>279</sup> European Parliament and European Council. Directive 97/66/EC of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector. (OJ 1998 L24/1).

<sup>280</sup> European Parliament and European Council. Directive 98/10/EC of 26 February 1998 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment. (OJ 1998 L101/24).

<sup>281</sup> European Parliament and European Council. 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 1997 L199/32).

<sup>282</sup> European Parliament and European Council. Directive 97/13/EC of 10 April 1997 on a common framework for general authorizations and individual licenses in the field of telecommunications. (OJ 1997 L117/15).

- ◆ the content and scope of universal service obligations
- ◆ the contractual relationships between consumers and telecommunications professionals
- ◆ the ability of consumers to make informed choices
- ◆ the protection of consumer integrity and privacy
- ◆ the settlement of disputes and the representation of consumers

The scope and content of consumer protection rules governed by various provision of the ONP voice telephony directive often vary according to both the type of operator providing the service, e.g., fixed or mobile, and the market position of such operators, e.g., operators with significant market power. The continued application of these criteria will be discussed under fixed/mobile convergence.

In a fixed/mobile converged environment, the parameters of universal service obligations, and the responsibilities of those operators that are designated to provide universal services, may need to be redefined, especially in light of the multiple categories of market operators that are subject to consumer-oriented obligations.

The ONP voice telephony directive, which defines the bundle of universal services to be provided to consumers, requires Member States to ensure that all reasonable requests for connection to the fixed public telephone network at a fixed location, and for access to fixed public telephone services, are met by at least one operator. Member States may, if necessary, designate one or more universal service providers, so that service is available throughout the whole of the national territory<sup>283</sup>.

Designated providers must provide a connection to the fixed network that is capable of allowing users to make and receive national and international calls, and that is capable of supporting speech, facsimile, and data communications<sup>284</sup>. Member States must also ensure that public pay telephones are provided, so as to meet the reasonable needs of users in terms of both numbers of public telephones and their geographic coverage<sup>285</sup>, and may, where appropriate, take specific measures for disabled users and users with special social needs<sup>286</sup>.

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<sup>283</sup> Article 5.1. EC.

<sup>284</sup> Article 5.2. EC.

<sup>285</sup> Article 7. EC.

<sup>286</sup> Article 8. EC.

The definition of the universal service bundle, however, is only one aspect of the directive. The directive is also concerned with achieving an appropriate balance between the development of new services, and the sustaining of competition on the one hand, and the protection of consumers in their relationship with service providers on the other. Consequently, the directive defines different categories of operators, to which the range of obligations defined in the directive applies to varying degrees:

Firstly, the directive distinguishes between mobile operators and fixed operators, by excluding the mobile operators from many of the obligations under the directive. Mobile operators are subject only to five key obligations set forth in the directive, namely:

- ◆ Article 6 on directory and enquiry services
- ◆ Article 9 (b) on the access to operator assistance services and enquiry services
- ◆ Article 9 (c) on free access to emergency services
- ◆ Article 10 (1) on an operator's obligation to provide consumers with a contract
- ◆ Article 11 (1) on the publication of information on standard terms and conditions.

Secondly, fixed operators are subject to the following categories of obligations:

- ◆ The provision of universal service is ensured through the designation by the Member States of universal service providers.
- ◆ Significant market power is used as the criterion to distinguish further between remaining fixed operators. Organizations with significant market power are subject to additional obligations relating to:
  - ◆ quality of service
  - ◆ the provision of additional facilities (calling line identification, direct dialling-in, and call forwarding)
  - ◆ tariff principles (cost-orientation, transparency, and unbundling of services)
  - ◆ cost-accounting principles

Moreover, distinctions are also drawn among fixed operators in terms of the types of consumer obligations relevant to individual types of service, such as<sup>287</sup>:

- ◆ universal service<sup>288</sup>

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<sup>287</sup> For a detailed view and discussion over these items see: Directive 98/10 of 26 February 1998 on the application of ONP to voice telephony and on universal service for telecommunications in a competitive environment . (OJ L 101/24). 1998.

- ◆ access to fixed networks
- ◆ public telephone services
- ◆ voice telephony services

For instance, only providers of voice telephony services, together with designated universal service providers with significant market power, are under the obligation to provide the additional facilities listed in Article 15 of the directive. Member States<sup>289</sup> should take into account the ability of an operator to provide universal services in designating such an operator, which not only enjoys significant market power, but also invariably has a dominant position.

Universal service obligations only apply to fixed carriers, although a degree of universal service provision can be identified in the license provisions of mobile operators that require them to guarantee extensive geographic coverage, or to contribute to universal service funds. Given the existence of the principle of technology neutrality, the technical means by which universal services are delivered may need to be reconsidered in light of fixed/mobile convergence. The use of market power as an indicator of the ability to provide universal services, however, remains relevant.

Further, another problem could be consumer protection issues. These measures address how best to prevent harm to consumers and to prevent the occurrence of competitive market distortions characterized by significant gap between both telecommunications suppliers and consumers, and among suppliers themselves.

Regulatory measures addressing information-related obligations result from the asymmetric power enjoyed by telecommunications operators as compared to consumers. These types of measures apply to all operators, regardless of their relative importance in the market and despite the level of competition, and also apply irrespective of the technology used. Such measures mainly deal with obligations designed to counterbalance consumers' relative lack of information and bargaining power, by requiring operators to provide consumers with sufficient information on their services and tariffs. This may also include

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<sup>288</sup> In some cases, designated universal service providers come under additional obligations, provided that they also enjoy significant market power. This is true in the case of Article 15 on the provision of additional facilities, and Article 17 on tariff principles and cost-orientation.

<sup>289</sup> Recital 6 of the Directive.

positive obligations such as the provision of an itemized bill or selective call barring services, which allow the consumer to control his or her level of consumption.

Denmark has adopted a set of telecoms-specific, technology neutral obligations in the field of consumer protection<sup>290</sup>. Some smaller market players have complained to the Danish NRA, the NTA that the requirements are unbalanced, both in economic and administrative terms, and have argued that an exemption should be available to smaller market actors. The NTA, however, is of the opinion that a system of exemption would be difficult to manage in practice. Exempting some providers, based on their size, would not be appropriate given the regulation's objective of protecting consumers, thereby meaning that regulatory restrictions should apply whatever the size of the operator. NTA has considered the option of differentiating between operators according to the types of customers they serve and the services to which their customers subscribe. For example, the NTA suggests that operators could be subject to stricter obligations, in terms of the range of services offered to subscribers, where the amount paid by consumers varies with the level of consumption<sup>291</sup>.

Other measures prescribed by the directive relate to the desire to protect consumers from abuses of market power. These measures deal, for example, with principles such as cost-orientation and the unbundling of services. In such cases, as well as cases where the provision of certain services such as calling line identification or call forwarding is imposed on operators with significant market power, it could be difficult to understand whether this is consumer protection or universal service. Therefore, there is a need to reconsider whether certain obligations regarding cost-orientation should be mandated, and to assess whether competition law will be sufficient of itself to tackle the abuse of market power with regard to retail pricing issues. If this would have been done, the universal service providers would remain subject to the obligation to provide affordable services, and concerning the provision of additional facilities (calling line identification, call forwarding, direct dialling in), where such measures are not necessary for the protection of the consumer (where their provision does

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<sup>290</sup> Executive Order No. 581 of 6 July 1999 on the Provision of Telecommunications Networks and Services. Telestyrelsen (the Danish NRA).

<sup>291</sup> Telestyrelsen, *Udredning vedrørende regulering af udbudet af telenet og teletjenester*, Copenhagen, September 1999. By the same token, the NTA has recently the view that business end users do not need the same level of protection as private end users. Accordingly, it has proposed that the current regulation be amended so that either: (i) regulatory requirements apply to the relationship between an operator and a non-professional (private) end user; or (ii) operators and business end users are provided the opportunity to derogate from mandated standards in their contracts.

not assist consumers in controlling their consumption patterns), the issue then becomes one of whether these measures are essential, and, therefore, need to fall within the scope of the universal service, or non-essential, and can be best left to the marketplace to provide via competitive service offerings. Therefore, it could be an advantage if a distinction could be established between universal service obligations and consumer protection measures. Universal service would be provided, as is now the case, by one or a few operators, subject to specific obligations in terms of the services to be provided and their tariff levels.

Secondly, consumer protection measures should apply to all fixed and mobile operators, which is an extension beyond those of the directive. As regards the content of the universal service obligation, and consistent with the principle of technology neutrality, the limitation of the universal service bundle to fixed networks may also need to be reconsidered.

The European regulatory framework does not impose any obligation on universal service providers regarding the provision of particular bandwidth. Where Member States have included in their definition of universal service a reference to minimum access speeds, these have never exceeded 2,400 bits/second<sup>292</sup>. As information society services require more bandwidth, some consumer groups argue that there is justification for including in the universal service bundle a minimum bandwidth requirement greater than 2,400 bits/s, especially since standard networks will increasingly feature greater access speeds.

Admittedly, including broadband communications within the scope of universal service, upgrading of access networks across the European Union would entail huge costs to incumbent operators. It might also hurt new entrants who would be under increasing pressure to contribute to a universal service fund. Although not borne by the consumer directly, such charges are indirectly subsidized by higher retail costs. The provision of broadband communications as a part of universal service could nonetheless be facilitated, if the principle of technology neutrality were applied in such a way as to refer to the options available in the delivery of the elements of the universal service bundle. Developments in satellite, mobile, and fixed cellular broadband access capabilities lead to the conclusion that these technologies could, over time, become alternatives to xDSL technologies in geographic

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<sup>292</sup> BEUC. Universal Service in Telecommunications: European Consumers' Rights to Telecommunications Services, (BEUC/341/98). November, 1998.

areas characterized by lower fixed line density and longer local loops, thereby decreasing the costs of broadband access.

It should also be noted that mandating the provision of broadband services at this stage would also have the effect of extending the current scope of universal service. On this subject OFTEL argues “universal service is about finding ways of meeting the needs of those remaining few whom the unregulated market might choose not to serve. It is not about predicting what will be required in the future and requiring it advance. Neither is it about prescribing what is required for future economic growth and prosperity”<sup>293</sup>. Certainly, whether broadband access should be available to anyone, anywhere, including remote and low population density areas, is ultimately an issue of social policy.

The issue of including mobile services within the scope of universal service obligations might be solved in one of two ways: mobile services could be introduced as a substitute for fixed services, where there are cost advantages; and mobile services could be included as an extra service, supplementing the existing universal service bundle.

Mobile communication might be included in the scope of universal service as a substitute for fixed communications. In particular, mobile technologies could provide cost advantages in providing access to unconnected households in less densely populated areas. An interesting view has been expressed by WIK<sup>294</sup>, which concludes that comparing the fixed and mobile alternatives is not a case of comparing “like with like”. For example, the cost characteristics of the network entail different pricing methods. Moreover, and perhaps more importantly for universal service, mobile telephony still enjoys a “social image” very much different to that of fixed telephony, which could render the inclusion of mobile communications in universal service difficult. However, the increasing mobile penetration is likely to diminish its “social status” over time and secondly, social acceptance of mobile phones as part of universal service could be facilitated by technically restricting their use to the basic functionality provided by fixed services.

The fundamental difference between fixed and mobile services is that a mobile service normally connects individuals (as opposed to households) and it does so

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<sup>293</sup> OFTEL. Universal Telecommunications Services – Consultation . July, 1999. paragraph 2.11.

<sup>294</sup> Wissenschaftliches Institut für Kommunikationsdienste GmbH. Study on the re-examination of the scope of universal service in the telecoms sector in the European Union, in the context of the 1999 review.



(almost) wherever individuals are. If the use of a mobile service is not restricted, mobile services could provide not only any-to-any connectivity, but also anywhere-to-anywhere connectivity. Ensuring anywhere-to-anywhere connectivity in Europe would be a significant extension of the current scope of universal service, and would go much further than using mobile communications as a substitute for fixed, where to do so is cost-effective. If the choice is made to continue limiting the scope of universal service to the provision of any-to-any connectivity, then using mobile technologies would require the implementation of technical restrictions on the use of mobiles when provided as part of the universal service bundle.

Whether the universal service bundle should be extended to ensure anywhere-to-anywhere connectivity is a question that warrants two observations. Firstly, such a decision is a social policy question, the answer to which depends on what is considered essential to participate in the information society. However, even if mobile service were to be essential, this should not be sufficient to require its inclusion in the universal service bundle. As noted by OFTEL, mobile telephony is already provided by the market to anyone on request and the critical question is therefore one of coverage and affordability<sup>295</sup>. (The question is whether mobile services should be subsidized.) Competition between mobile operators has, however, already led to significant decreases in retail prices for mobile services in most Member States.

Despite the different commercial and regulatory histories of the fixed and mobile sectors, a consistent approach across sectors needs to be developed in terms of the provision of services to particular customer groups. Article 8 of the directive requires that Member States, where appropriate, take specific measures to ensure equal access to, and the affordability of, fixed public telephone services, including directory services, for disabled users and users with special social needs. A broad range of measures has been adopted by Member States to implement Article 8.

In Denmark, universal service obligations include the provision of relay and text telephone services to deaf persons, deaf-and-blind persons, and persons with impaired speech or hearing. Providers of public voice telephony must ensure that all their customers have access to the appointed universal service provider's relay telephone services and text

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<sup>295</sup> OFTEL. Universal Telecommunications Services – Consultation . July, 1999. paragraph 5.30.

telephone services. Specific groups of handicapped persons may benefit from services at reduced rates. The universal service provider may implement low-usage subscriptions, in which case it is obligated to actively and regularly give guidance to individual end users as to which type of subscription is the most favourable. In France, the universal service obligations imposed on the universal service provider require special tariff schemes for certain categories of persons with low incomes or subject to a handicap.

In the United Kingdom, BT has license obligations requiring it to provide a Light User Scheme (which entails rebates of the line rental if the phone line is not used frequently) and a Limited Service Scheme (with low connection and rental costs, but with a bar on outgoing calls). OFTEL has made recommendations to the Secretary of State for Trade and Industry to introduce a new license condition that would place upon all telecommunications operators offering fixed retail services an obligation to provide equal access to basic telecommunications services for people with disabilities. The Department of Trade and Industry is also currently reviewing the provision of text phones at an affordable price<sup>296</sup>.

Fixed/mobile convergence raises questions in relation to operators' obligations to distinct classes of customers. In other words, whether such obligations will be affected by the convergence of fixed/mobile services ultimately depends on whether the universal service bundle evolves to include mobile services, or whether it should include such services based on the doctrine of technology neutrality. Fixed/mobile convergence brings with it increased pressure to subject both fixed and mobile services to a similar range of obligations as regards the provision of socially beneficial services.

Under Article 6 of the ONP open voice telephony directive, which applies to both fixed and mobile services, subscribers have the right to have a listing in publicly available directories and to verify and, if necessary, correct or request the removal of that entry. Directories listing all subscribers (except those who have indicated that they do not wish to be listed) must be available to users in a form approved by the NRA, whether printed or electronic, or both, and must be updated on a regular basis. Moreover, at least one directory

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<sup>296</sup> OFTEL. Universal Telecommunications Services – Consultation . July, 1999. The Royal National Institute for the Blind (RNIB) in the United Kingdom identifies the provision at affordable price of telecoms equipment adapted to visually impaired people as a major issue. In a brochure entitled *Telephones – what features do disabled people need?*, RNIB notes that, in many cases, little would be required to make telecoms equipment useful to people with disabilities.

enquiry service covering all listed subscriber numbers must be available to all users, including users of public pay telephones.

Article 6 also requires that all organizations that assign telephone numbers to subscribers meet all reasonable requests to make available the relevant information in an agreed format on terms which are fair, cost-oriented, and non-discriminatory. While the scope of Article 6 does not require further amendments to cater for developments in fixed/mobile convergence, the implementation of that provision into domestic law by some Member States raises some doubts as to the effectiveness of Article 6 in a converged environment. In Belgium, for example, mobile numbers are not included in publicly available directories and enquiry services<sup>297</sup>.

Such a policy of exclusion is not necessary to ensure the protection of privacy. Appropriate information to consumers on their rights not to be included in a directory should suffice<sup>298</sup>, and is likely to restrict significantly the scope, and thereby the utility, of directories. This will be even more important with the growth of fixed/mobile converged services and the introduction of personal numbers.

Under Article 9 (b) of the directive, fixed and mobile users must have free access to emergency services using the dialling code 112, as well as any other dialling codes specified by NRAs for use at national level<sup>299</sup>. Emergency services on the 112 number can thus be reached on an EU-wide basis by mobile users using the GSM specifications, which incorporate an ETSI standard that allows users to dial emergency services without a SIM-card, i.e., cost free and without a subscriber agreement with the mobile operator in whose territory the call is made. Since access to emergency services is thereby secured, the convergence of fixed/mobile services does not appear to raise new regulatory concerns.

However, the technological progress that will make fixed/mobile offers possible could be used to enhance the effectiveness of emergency services. For example, a number of companies have developed techniques that enable operators to determine a subscriber's location quite precisely. This can be done using either a GPS receiver built into the handset,

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<sup>297</sup> Article 109 of the 1991 Law on the Reform of Certain Public Economic Enterprises.

<sup>298</sup> As provided for by the Data Protection Directives.

<sup>299</sup> This can also be accomplished by technical means; see, most recently: European Commission. Decision 99/645/EC of 15 September 1999 on a common technical Regulation for the attachment requirements for TETRA access to emergency service. (OJ 1999 L255/40).

or by measuring the time difference of the arrival of signals at different base stations. The former method clearly has limitations because it requires everyone to use a specialized handset. The network-based solution is preferable because it requires the use of software integrated with the network, and can thus be incorporated more easily. A workshop held in May 1999 in Brussels called for the extension of regulations to include location determination for emergency calls made using mobile telephones<sup>300</sup>. The argument is all the more convincing when the following figures, based on statistics compiled in the United States, are taken into account.

- ◆ More than 50% of emergency calls will originate from a mobile handset.
- ◆ 2% of emergency calls are time-critical. For every 1000 mobile emergency calls, two lives could be saved if the caller's location is known.
- ◆ 10% of mobile callers cannot explain exactly where they are<sup>301</sup>.

In the United States, the FCC has mandated<sup>302</sup> that mobile operators be able to determine the location of a mobile 911 call (911 being the American equivalent of the European 112 number) within a range of 100 feet (approximately thirty metres) by October 2001. This obligation is to be read in conjunction with the 1999 Wireless Communications and Public Safety Act, which prohibits the use of location information for purposes other than emergencies without the express and prior authorization of the subscriber. However, concerns have been expressed that this prohibition is couched in language that is too broad to effectively protect subscribers from the misuse of private information, and it has been suggested that users should be able to turn off the tracking device at the push of a button<sup>303</sup>. In the EU, the telecommunications data and privacy protection directive<sup>304</sup> and the data

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<sup>300</sup> European Commission. Workshop on Policy and Regulatory Issues for Location-Based Mobile Services – Raising the Awareness of Industry and Regulators. DG XIII, Brussels, 05.05.99 – 05.06.99.

<sup>301</sup> HBF Group, The U.S. Experience, in: European Commission. Policy and Regulatory Issues for Location-Based Mobile Services – Raising the Awareness of Industry and Regulators. DG XIII, Brussels. 05.05.99 – 05.06.99.

<sup>302</sup> 47 USC § 251 (c)(3). In this paragraph the term Network element is defined very broadly to encompass not only facilities or equipment, but also more immaterial elements such as features, functions, and capabilities.

<sup>303</sup> U.S. Privacy Advocates Fret Over Plans for Tracking Cell-Phone Users' Locations. Wall Street Journal Europe 23 November 1999.

<sup>304</sup> European Parliament and European Council. Directive 97/66/EC of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector. (OJ 1998 L24/1).

protection directive<sup>305</sup> already provide for an extensive regulatory framework that addresses most of the concerns that have been expressed in the United States. It should be noted in particular, that Article 7 of the data protection directive authorizes the processing of personal data where that processing is necessary “to protect the vital interests of the data subject”.

Another major issue is the question of who should pay for the implementation of emergency location-based services<sup>306</sup>. Both mobile networks and handsets will require upgrading, but it is also likely that the call centres used by emergency organizations will need to be adapted in order to receive and use this information.

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<sup>305</sup> European Parliament and European Council. Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data . (OJ 1995 L281/31).

<sup>306</sup> European Commission. Report on the Workshop on policy and regulatory issues for location-based systems and services . DG XIII. 10.05.99.

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**Chapter 4.1.2**

**Universal Service**

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The principles of universal service were set as early as in 1973<sup>307</sup>. Basically, the concept rests on the three principles:

- ◆ continuity
- ◆ equality
- ◆ affordability

Thus, universal service must be offered at all times (the specified quantity), be accessible independent of locality, and be at an affordable price. The scope of the universal service is, in principle, for the Member States to decide on. The Member States may impose the universal service obligations (USO) on telecommunications service providers, as long as they respect Community law<sup>308</sup>. However, the Member States are forced to include a defined set of services in their USO, such as access to the Public Switched Telephone Network (PSTN) in order to access voice, fax and data communications<sup>309</sup>, directory services, public payphones, and measures for disabled users or users with special social needs<sup>310</sup>. Further, but not according to the principles of USO, the ONP framework requires Member States to offer additional services and features. These are:

- ◆ leased lines according to Directive 97/51 (adoption to a competitive environment in the telecommunications sector)
- ◆ emergency services
- ◆ itemized billings
- ◆ tone dialling
- ◆ selective call barring (all according to Directive 98/10, Articles 9 (c) and 14, application of ONP to voice telephony)

In addition to this, the recommendations 92/382 and 92/383<sup>311</sup> encourage the Member States to ensure the availability of packet-switched data services (PSDS) and ISDN on their

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<sup>307</sup> European Commission. Communication on the Consultation on the Review of the Situation in the Telecoms Sector. (COM 93/159 final)/ 23.04.93.

<sup>308</sup> See: Directive 98/10 on the application of ONP to voice telephony and on universal service for telecommunications in a competitive environment. (OJ L 101/24). 26.02.98.

<sup>309</sup> In Annex I of Directive 97/33 (interconnection in telecommunications), it is an indication of what speed the institutions had in mind, where it is stated that PSTN must be at a minimum of 2400 baud. This would at least be suitable for advanced Internet, such as www. surfing.

<sup>310</sup> For a closer view on these sets of services see Directive 98/10, especially Articles 5-8.

<sup>311</sup> European Council. Recommendations of 5 June 1992 on the harmonized provision of a minimum set of PSDS in accordance with ONP Principles. (OJ L 200). 18.07.92.

respective territory. Finally, Directive 97/66<sup>312</sup> (processing of personal data and the protection of privacy) requires the Member States to ensure that users can take advantage of features concerning itemized billing, calling line information, and call forwarding which safeguard their privacy rights.

Obviously the existence of USO means that the services discussed would not be offered under market conditions as they would, of course, not be profitable. The service provider is therefore bound to make a loss as regards the services covered under USO. The rest of this chapter discusses more closely this area, its problems, and what might be a solution.

Policy officials and various interested parties sometimes argue for subsidized telecommunications services on the basis of equity, that such subsidies are a legitimate instrument with which to combat poverty. From an economic perspective this is not usually an efficient or effective way of combating poverty. Economists argue that if poverty is the policy concern, the focus of that policy should be to increase the income of those impoverished, rather than to subsidize the goods and services they consume. Giving these families more income allows them to spend it in a way that matches their expenditure on individual items with the values they place on those items. Subsidizing a service amounts to the state spending on someone else's behalf, what they could more profitably (i.e., with higher utility) have spent themselves. This simply follows from the fact that no one understands the preferences of other individuals as well as they understand their own.

Nevertheless, rather than boost income directly, policy makers and regulators have sometimes pursued what has been referred to as a "regulatory safety net" involving goods and services that are widely considered to be essential. Interventions based on regulatory safety net arguments often do not involve beneficial externalities, but rather an entitlement approach. Examples include food stamps in the USA and "free" (tax funded) or subsidized national health services in European countries. The state will sometimes intervene in the case of services that are considered potentially unaffordable for many households, providing a safety net for those who do not or cannot provide for themselves due to the size of the payments required. The question is whether basic telecommunications service falls into this

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<sup>312</sup> Directive 97/66 of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector. (OJ L 24/1). 1998.



category, that the price of connection and periodic rental is so high as to remove the household's ability to choose to take out a telephone subscription or not.

Payphones can be seen as one way of overcoming this problem. The price of calls from a payphone can be thought of as incorporating connection and call charges into a timed (per minute) charge, enabling those households who do not take out a full private subscription to purchase a lesser amount of service. Thus, even if non-subscription to the network of some households is due to the size of expenditure, access to payphones enables households to consume a positive level of telecommunications service.

It is suggested that in higher income countries, if corner solutions exist at all regarding private voice telephone service, it would apply only to a handful of the most impoverished households. Excluding the quite large numbers of households who do not want a phone in their home, or use a mobile phone, non-subscription will in most cases not be explained by the fact that households cannot possibly afford it, but because given their modest incomes they find other things that they judge to be more important on which to spend their money. In such cases the earlier demonstration applies – that as a rule people are made better off, not by the state subsidizing selected goods and services, but by providing them with more income. This allows them to balance their expenditure on goods and services to suit the values they personally place on them.

In support of this argument one can say that if all else remained the same, *ceteris paribus*, the withdrawal of all payphones would separate those who did not have a private phone into one group that then decides to subscribe, resulting in an increase in private subscriptions, and those who decided to remain phoneless. One reason for the increase in subscriptions would be that with no payphones, many households would face a choice between a private subscription and having virtually no access to telecommunications services at all.

Most of those with television but without a telephone could presumably afford to subscribe to the public telephone network, but choose to spend this income in other ways. Certainly, quite a large number appear to have chosen the TV before the telephone. In much poorer countries, however, it seems likely that any level of purchase is unaffordable for some households on very meagre incomes. In such cases, households absolutely cannot consume a positive level of service – they are at a corner solution.

In principle, if no beneficial externality exists and consumers are not at a corner solution, then there is no economic case for subsidizing the service. In this case, for particularly poor families' income, assistance is the recommended treatment.

But even when a beneficial externality does exist, the case for intervention should take account of the state's or the industry's (or more accurately, subscribers') ability to pay, and on the state's ability to efficiently implement and continue to operate a scheme on its merits, free of interest group capture – considered to be a common outcome by very many economists where state mandated subsidy schemes operate. If poverty is the principal concern, income support is the efficient and effective means of dealing with it.

It is sometimes stated that the consumption of certain goods or services should be encouraged because they are socially desirable. An obvious example is the consumption of culture goods. The argument includes not only those goods for which consumption can be shown to entail beneficial externalities, but is also applied to other goods and services that are considered desirable for people to consume. As such, merit good arguments tend to refute the notion of consumer sovereignty. Implicitly at least, those who make such arguments are claiming that individuals frequently do not know what is in their own best interest. Even if this were true, the main weakness with merit good arguments is that someone must decide which are the merit goods, i.e., what is it that people should be doing more of, and presumably also, which are the merit bads; the implication being that merit goods are in some way subsidized, while things defined as merit bads are additionally taxed<sup>313</sup>.

This sort of paternalism is not always widely supported by voters. However, in a limited number of cases it clearly is, most notably in the cases of compulsory tax funded education<sup>314</sup>, and in those countries, which have it, universally available free (at the point of delivery) or subsidized health care. The choice of these particular services as merit goods seems to be explained not by any paternalistic policy per se systematically identify what the authorities consider are merit goods and bads, but because there appears to be widespread

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<sup>313</sup> Where a merit bad also involves externality costs, economists frequently recommend penalty taxes, but the economic rationale comes from the identified externality cost, and not from any decision on the part of policy makers to classify the consumption of things as meritorious or disagreeable.

<sup>314</sup> Fully tax funded education is not enough by itself to guarantee adequate consumption of education. Some parents will still not require their children to attend school, or to attend regularly. In this case the state makes education to a certain age compulsory in an effort to impose a minimal level of education consumption.

agreement in the policy reflected through repeated events that are part of the democratic process. In other words, the policies are so un-contentious to a majority of voters that any political party that did not support them would find it difficult to get enough political support to be asked to form a government.

As stated above, the economic case for a universal service policy involving some customers getting subsidized access to POTS, rests on the existence of significant beneficial externalities. These are principally in the form of network externalities. If the intention is to internalize the externality relating to those households that are considering whether to subscribe to the network or not, targeting would need not to be based not on low income, but rather on whether household do not value the telephone highly. If the subsidy were based on a means test, such people would be ineligible for a subsidy, even though the benefit to existing subscribers of their subscription to the network (the externality) appears to be much the same as for low-income households.

Targeting low income earners confuses the efficiency arguments relating to the internalization of a network externality with policies intended to alleviate poverty which, as argued above, are generally best dealt with through income support.

It is sometimes argued that access in the house to a private telephone is essential if people are not to be socially excluded. It "...provides a basic support for social and economic participation in modern western society"<sup>315</sup>. "The telephone has become a necessity."<sup>316</sup> It has been suggested that a "right of access to a telephone [may] derive from the fact of citizenship"<sup>317</sup>.

Arguments that refer to social exclusion, electronic citizenship, and electronic democracy, and which tend to be in support of a more expansive universal service policy, do not appeal directly to market failure, although an implicit market failure argument can be found. Mostly the arguments are rhetorical and based on descriptions designed to convey to the reader how valuable access to the telecommunications network is today, and how this value will increase in the future.

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<sup>315</sup> S. Graham, J. Cornford and S. Marvin, The socio Economic benefits of a universal telephone network . Telecommunications Policy 20, 1:3-10.

<sup>316</sup> C. Milne, Opening the debate on universal service in the UK . Telecommunications Policy 15, 1:85-86. 1991.

<sup>317</sup> J. Taylor and Webster, Universalism: Public Service and citizenship in the Information age . Information, Infrastructure and Policy 5, 3. 217-233. 1996.

The telephone provides a means of contact among friends and relatives, and provides access to professional organizations, information services, and even assists them in finding a job. It is common for access to the telecommunications network to be described as a right of citizenship. In much of the socio/political literature is the (often implicit) claim that the telephone is so valuable that in a developed country it is one of the basic necessities of life, rather like running water, electricity, and health care. By implication therefore, most of those who do not subscribe to the network are either:

- ◆ so income constrained that they cannot afford a subscription, even though the telephone is highly valued (a necessity). In this case, non-subscription would be an important indicator of poverty.
- ◆ not informed about the value that they can get from a telephone subscription
- ◆ are informed about the things that can be done with a telephone, but not all people value the telephone as highly as many people think they do

In the case of income constraint, the socio/political literature<sup>318</sup> claims that if people do not have a telephone subscription they will tend to be significantly “socially excluded”, with all the problems this entails. It is suggested that not having a telephone is a cause of social exclusion.

There are thus a number of hypotheses that come out of this literature. The ones that stand out are: not having a telephone (A) results in social exclusion (B), and being socially excluded (B) results in antisocial behaviour (C) – such as criminal activity, drug abuse, and dependence on welfare. The exact causal relationships are likely to be a good bit more complex than hinted at in these relationships. It has been claimed, for example, that not having a telephone is a cause of continued unemployment. The suggestion is that having a telephone subscription makes it easier for potential employers to contact job applicants, and this is becoming especially important as the proportion of work, which is temporary, is

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<sup>318</sup> The socio-political and socio-economic literature referred to in this chapter is mainly: M. Cave, C. Milne and M. Scanlan Meeting Universal Service Obligations in a Competitive Telecommunications Sector ECSC-EC-EAEC Brussels Luxembourg, Study for DG IV. 1993.; C. Graham, J. Conford and S. Marvin, 'The socio-economic benefits of a universal telephone network'. Telecommunications Policy, 20 1:3-10, [1996], C. Milne 'Opening the debate on universal service in the UK', Telecommunications Policy 15, 1:85-86. 1991.; and J. Taylor and C.W.R, 'Universalism: Public service and citizenship in the information age'. Information, Infrastructure and Policy 5,3 217-233.

increasing<sup>319</sup>. Thus, if (D) represents not having a job, the causation may go: (A) causes (D) which gives rise to (B) which results in (C). Interestingly, if we have (A) does this give us (C)? To put the later relationship another way, if all those households that do not have a telephone were given one, the hypothesis is that it would lead to a decline in antisocial behaviour, and a decline in the associated costs born by society.

In terms of market failure, there are at least two identifiable cases in the socio/political literature concerning social exclusion: (i) a theory about labour market failure, that not having a telephone gives rise to transaction costs and an information gap resulting in labour market failure which results in social exclusion; and (ii) not having a telephone leads to externality costs of antisocial behaviour being born by society.

The first of these (i) is really a new theory of unemployment to which there appear to be two main aspects: firstly, it is a theory of long term unemployment – that those without phones find it significantly harder to get work and secondly, in times of high labour demand, it suggests an explanation as to why a significant amount of unemployment persists. Neither of these labour market issues has been developed, as far as have been recognized. They are really matters for labour market economists to investigate, and therefore, no further attention will be given to them in this study. The main focus of the socio/political debate has been on (ii) above.

The second type of market failure (ii) is an externality argument that households without a phone are in danger of being excluded and are not taking account of the costs that would be born by society when deciding whether or not to take out a telephone subscription. These costs are those associated with an increase in antisocial behaviour resulting from their social exclusion. They include those related to expenditures on the justice and criminal system, taxation costs to fund social security payments such as the unemployment benefit, and the social and private costs of drug abuse<sup>320</sup>.

It is also likely that many non-subscribers are income constrained. However, it is important not to get the two issues confused, as the policy prescription is normally quite different in each case. If the intention is to alleviate poverty, then income support is typically the appropriate policy. In the case of the spill-over costs to society, however, the text book

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<sup>319</sup> Graham et al. 1996.; Milne 1991.

<sup>320</sup> It is also easily developed into a theory about social class as the particular family experiences are inherited by the next generation.

solution is to provide a subsidy such that the price of the telephone to those households at risk of social exclusion causes them to behave as if they were accounting for the costs born by society of their non-subscription (i.e., antisocial behaviour), when considering whether to take out a telephone subscription.

Now let us examine what has been discussed so far in this section. One can take the socio/political argument regarding social exclusion and reassemble it as a number of economic arguments in order to focus on its policy aspects, as they are essentially economic in their operation. What proponents of the social exclusion argument are saying is that the telephone is especially important and should not be left to impoverished individuals to decide simply by giving them additional income (although this might help). It is suggested that what they need is a telephone.

The socio/political arguments are rhetorical. No empirical evidence is cited in support of their claims. Indeed, it is not something that lends itself easily to empirical investigation. From an economic perspective, a problem arising from this is that one cannot get a sense of the market failure dimension in order to design a policy which internalizes the externality costs – one can not even get a rough estimate of the benefits in order to compare them with costs.

These arguments do not appear to give enough to recommend a policy initiative. A different sort of argument is required, and for this one needs to go back to the concept of merit goods. That is a fairly limited subject area, being those things for which a majority of voters appear to agree, through repeated democratic events, that there should be a minimum level of public access – a safety net.

It is for these “voter agreed” merit goods that most exceptions occur to the economists’ usual preference for consumer sovereignty, and it is where subsidized access to specific meritorious goods and service over-rides the economists’ preference for poverty to be dealt with through income support rather than by subsidizing individual items.

Now let us look at the case that people are not informed about the value they can get from a subscription to the telephone network. As far as basic service is concerned, it is unlikely that those without telephones are not fairly well informed about its uses. It is suspected that for most non-subscribers, their non-subscription will not be because they do not understand what can be done with a telephone, and hence fail to value it appropriately.

As for point (iii) above, there is some evidence supporting the suggestion that some people do not value the telephone nearly as highly as others. A survey done for OFTEL indicated that approximately one third of unconnected households in the UK (about 450,000) were not interested in having a telephone in their home<sup>321</sup>. Moreover, more households in EU countries (and other OECD countries) have televisions than have telephones, and given the higher up-front payment typically required to buy a television set than is required to gain a telephone subscription, especially by poor people who often cannot get credit, it seems likely that many poor households value television more highly than a telephone.

This may also be the case for cable television. In a study in the USA involving a fairly poor area of New Jersey, 50% of those households that did not have a phone in their home had cable TV<sup>322</sup>. Indeed, in their answers to interviewers, these households said that cable TV added more to their quality of life than did a telephone. It thus seems likely that at least for many marginalized households, cable TV is also valued more highly than a telephone<sup>323</sup>.

One argument is that competition will lead to a substantial fall in household subscriptions, as a profit oriented operator would have no interest in serving unprofitable customers, which were considered to exist in large numbers. In those cases where network development is not complete, it is argued that liberalization will result in the incumbent deciding not to roll out its network to areas it considered would be unprofitable; mainly sparsely populated rural areas. The argument is frequently also cited where liberalization is being partnered with privatization of the incumbent. This is because while liberalization makes ongoing cross-subsidization between the incumbent's services inefficient and difficult to maintain, privatization would be sure to refocus the minds of management away from the pursuit of several (often conflicting) objectives that exist under public ownership, to a primary objective of profit maximization. Thus, where under state ownership, management were required to also pursue the social objectives including universal service, liberalization, especially when partnered with privatization, would see universal service objectives jettison<sup>324</sup>.

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<sup>321</sup> The UK General Household Survey, 1995, in OFTEL's consultative document.

<sup>322</sup> Mueller and Schement. 1996.

<sup>323</sup> Compaine and Weinraub. 1998. 16-17.

<sup>324</sup> This argument is supported by mainstream economics. In describing assumptions employed to analyze the role of asymmetric information and the incentives of the actors, Laffont and Tirole. 1993.

There are a number of scenarios where liberalization and privatization will not affect negatively on household penetrations rates, if no official universal service obligations are imposed. It is worth looking at these, although it is argued below that while they would likely play an important part in mitigating against reductions in penetration rates, in some circumstances other effects may predominate, which put the pursuit of universal basic service in doubt.

The first of these concerns unprofitable customers that have telephones at the time of liberalization/ privatization, those perhaps at most risk. (These are mainly those generating low revenues, chiefly poor households, and those in very high cost areas.) These customers are likely to continue receiving service, whether or not mandatory universal service obligations operate following liberalization/privatization. This is because the main network assets required to provide service to these households are already in place, and to a very great degree are irreversible (i.e., they are sunk costs).

At this part of the study the case of liberalization accompanied by privatization of the incumbent operator will be examined. If at the time of sale the authorities refused to provide ongoing compensation to the operator for serving loss-making customers, bidders would take that into account in the price they offered the state for the operator. Bidders would know that some of the network assets would not be able to generate a profit if valued at replacement cost, and the value of those assets would be written down in the offer to reflect this. The state would get a lower price for the operator, assuming all else remained the same, than had the state agree to pay the net USO costs, or to regulate for a USO tax to be recovered from subscribers<sup>325</sup>.

It is sometimes argued that the cause of universal service would be advanced if the incumbent operator were permitted to price discriminate, and were also freed from tariff averaging requirements. Some support for this argument can be found in economic analysis.

No network operator could survive by pricing all its services at LRIC. This is because in a telecommunications network, there are many costs which are not incremental to any particular service, such that operators must on average charge above the incremental costs of the services they sell if they are to provide investors with a sufficient return on their

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<sup>325</sup> In the later case the state would likely get less than if the net USO cost was paid out of general taxes because of the negative effects such a tax would have on the industry.



investment to continue attracting the necessary capital needed to stay in business. But, so long as the price of a service at least covers the incremental cost of providing that service, there will be no cross-subsidy<sup>326</sup>.

In wealthy countries, all but a very small number of households would be offered service at a rate they could afford. There would, however, likely be a very small number of high costs, low income, households that place a relatively high value on having a telephone in their home, but the price of service would be more than they could pay or wanted to pay, given their modest incomes. These households are the core of the universal service problem – they will need targeted assistance if they are to subscribe. In conclusion, most universal service costs are created by tariff averaging and access deficits. However, in high cost low-income areas, a small number of universal service needs would likely remain.

Having more frequent reviews is not a recommended solution as the price cap would increasingly resemble rate of return regulation, which tends to remove the incentive for the operator's management to lower costs at all levels.

In the short to medium term, the impact of competition on universal service is difficult to predict. In the medium to long term, competition leads to lower costs, provides a timelier introduction of new technologies and new services, and leads to lower consumer prices. Competition provides incentives for firms to invest in and introduce technologies that give them a cost or service quality advantage over their competitors. No other arrangement is, in practice, more effective at providing services efficiently than competition. In the telecommunications industry, however, market power is relatively enduring, and regulators need to find cost effective ways of overcoming this which enables competition to evolve without the regulations themselves causing the incumbents' assets to be stranded.

Where competition is permitted, and the incumbent operator has significant net USO costs imposed on it, the incumbent is quite reasonably likely to argue that it is neither equitable nor efficient for its competitors not to also contribute to those costs. To leave out competitors from making a proper contribution does, in principle, provide them with a cost advantage, as they do not have to mark up any of their prices as the incumbent will need to do in order to recover the net USO cost. Such an outcome could be described as

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<sup>326</sup> An incremental cost test provides the proper floor price for the existence of cross-subsidization. (See Baumol, et al. 1982.).

discriminatory and a cause of competitive distortion. Where competition is not well established and the likely size of the net incremental cost of the USO (i.e., the economic cost) is not so large as to effectively hand non-contributory competitors a winning cost advantage, it can not be considered that a strong case can be made for setting up an official contributory scheme. There are several arguments, which lead to this conclusion:

- ◆ The industry is characterized by high entry barriers, especially high sunk costs and continuing regulatory uncertainty.
- ◆ Incumbent operators are well placed to recover USO costs in those markets in which they face little or no competition. This is largely because a firm based tax imposes different effective marginal tax rates on competitors.
- ◆ NRAs suffer from acutely inferior information about the costs and benefits of USOs compared to the information held by the incumbent. In most Member States, NRA's relative inexperience exacerbates the difficulty of their task. Largely because of this, on average, net USO costs agreed with NRAs run a significant risk of being inflated, which, if it occurred, would result in competitors contributing to net costs of the incumbent that do not in fact exist<sup>327</sup>;

Considering the three points above, Member States that are quick to set up contributory schemes, even though competition is in its infancy, are not sending a competition friendly message to potential entrants and investors. The suggestion is that the authorities have acted to the strategic advantage of the incumbent. In those cases where the state also retains a significant financial interest in the incumbent, observers may connect early action to implement a contributory system with the visible incentive of the authorities to prefer the incumbent. In short, the early implementation of an official USO contributory scheme could be seen as a lack of policy and regulatory independence<sup>328</sup>.

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<sup>327</sup> While rate based regulation in the USA (which has mainly been replaced by RPI-X control over a weighted basket of services) did result in relatively unprofitable periods for some monopoly utilities, where competition has been permitted casual observation suggests that cost measures relating to the incumbent have moved down over time, not just due to technology improvements, but also as regulators have repeatedly refined their cost measurement skills.

<sup>328</sup> The same can happen for a private incumbent, particularly where government is focussed on the short term benefits that can be provided to consumers by imposing tough regulations on the incumbent. Such policies can, however, stifle investment leading to a relatively worse situation for consumers in the long term.

The universal service costs are not so large as to force the incumbent into a competitively weaker position compared to its competitors. No contributory scheme is necessary, at least until competition becomes well established. If the size of the net USO cost is such as to competitively disadvantage the incumbent, either competitors should bear a share of the liability, or the state should pay the USO costs out of general taxes.

Assuming a single service industry<sup>329</sup>, the impact of a significant USO liability levied periodically on firms providing telecommunications services according to some estimate of their market activity, is rather similar to the effects of a transactions tax.

Cross-subsidization and the long term implication of universal service subsidies on the telecommunications industry can be analyzed in terms of public choice. To do so one has to move the focus from suppliers of network services to demanders of those services. In adopting this approach, it is assumed a public utility to be a coalition of consumer interests who have agreed to band together to form a network, as there are economic advantages for each of them in doing so, mainly in the form of lower unit production costs and network externalities. The following analysis concerns the strategic interaction involved in group formation and continuance.

Coalitions of interest can be seen as comprising several more narrow interest groups who have banded together because, while narrow groups have different interests to each other, there are often similar interest which bind them together. However, none will agree to remain in the grand coalition if they can do better by leaving it. In this regard several coalitions of interests could decide they have enough common ground to leave the public network and go it alone. Examples often show up in the provision of so-called public goods, where splinter groups have broken away from the majority public provision<sup>330</sup>.

These include the existence of private health services even though publicly funded health care is available to all, where private education flourishes though the availability of

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<sup>329</sup> Making the analysis with multiple services adds nothing to the explanation except unnecessary complication.

<sup>330</sup> 'So called' is used because it is the fact that they are not pure public goods; that partly explains the existence of several consumer clubs in addition to those provided publicly. (To be a pure public good requires that the enjoyment I get from my consumption of the good does not deplete your enjoyment of it, and that the producer is unable to exclude anyone from consuming it. A lighthouse is a frequently noted example.)

publicly funded education is ubiquitous, and where private pension schemes operate even though the state scheme provides for everyone.

The pricing of public utility services such as telecommunications is not usually organized as a vote. But politicians and government institutions do tend to represent voter (and sometimes also other) interests, and thus, while the linkage is much less direct than users actually voting on prices, the voter connection has been found to be a highly useful one with which to analyze the structure of telecommunications (and other utility) prices, especially because until quite recently prices for telephone service in most Member States. By setting price at average cost there are no monopoly profits earned by the network. Average cost includes a fair return on capital.

An interesting judgement<sup>331</sup> of the Court of Justice held that an undertaking providing an express mail service may, in certain circumstances, be required to pay postal dues to the operator responsible for the universal postal service. The court argued that in the case of a service of general interest, postal dues must enable compensation to be paid for any losses that may result from operating the universal service. In this case, in Italy, the collection, carriage, and delivery of mail are, in principle, services provided exclusively by the State. Any contravention is punishable by a fine. Since 1998 the State has provided the service through a joint stock company – Poste Italiane SpA – in which the Ministry for the Treasury is the sole shareholder. The Court acknowledged that an undertaking such as Poste Italiane is responsible for operating a service in the general economic interest, since it secures the universal postal service, irrespective of the profitability of the sector being served. In order to enable such an undertaking to perform that special task, it may prove necessary not only to permit it to offset its profitability sectors against its less profitable sectors, but also to require suppliers of postal services not forming part of the universal service to pay postal dues which contribute to the financing of the universal service and enable that service to be provided in conditions of economic stability. Furthermore, the Court considers that when the undertaking providing the universal postal service supplies an express mail service, it must also be required, under the same conditions, to pay the postal dues.

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<sup>331</sup> Judgement of the Court in Case C-340/99, *TNT Traco SpA v. Poste Italiane SpA* [17 May 2001] Not yet reported.

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**Chapter 4.1.3**

**Market Entry Issues**

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This chapter will discuss whether there exist any licensing requirements which cut across the fixed and mobile sectors, capable of hindering the entry of operators into the emerging fixed/mobile sector. The licensing directive and the licensing environment are discussed in more detail under the Open Network Provision Framework at Chapter 2.5 and under Chapter 2.8.

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**Chapter 4.1.3.1**

**Licensing Principles**

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The licensing directive<sup>332</sup> defines a framework for national licensing and authorization regimes, which notably prohibits the limitation of the number of licenses that may be granted and prefers the lightest possible regulatory regime and general authorizations (as opposed to individual licenses). The licensing directive also provides for a degree of harmonization of national license award procedures and the conditions which may be attached to licenses.

Despite the preference for general authorizations indicated in the recitals to the directive<sup>333</sup>, Member States still enjoy a broad discretion in establishing licensing categories and in utilizing individual licenses. In this regard, the licensing directive does not specify any telecommunications service categories for which a general authorization or an individual license may be required, with the consequence that the provision of identical services is subject to divergent requirements across the Member States. The licensing directive allows Member States to require an individual license in the following circumstances<sup>334</sup>:

- ◆ to allow the licensee access to radio frequencies or numbers
- ◆ to confer particular rights with regard to access to public or private land
- ◆ to impose obligations and requirements relating to the mandatory provision of public telecommunications networks and/or services
- ◆ to impose specific obligations on operators with SMP
- ◆ for the provision of public voice telephony services, the establishment and operation of public telecommunications networks, and the establishment of networks involving the use of radio frequencies

Moreover, the number of individual licenses issued may be limited in order to ensure, *inter alia*, the efficient use of radio spectrum<sup>335</sup>. In practice, the regulatory framework established by the licensing directive has resulted in diverging national licensing schemes, with only a few Member States (the Scandinavian countries and The Netherlands) relying mainly on general authorizations for the provision of a full range of communications services over fixed

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<sup>332</sup> The Licensing Directive: European Parliament and the European Council. Directive 97/13/EC of 15 December 1997 on a common framework for general authorizations and individual licenses in the field of telecommunications services. (OJ L 117/15).

<sup>333</sup> In particular, Recital 7.

<sup>334</sup> Article 8 of the Licensing Directive.

<sup>335</sup> Article 10 of the Licensing Directive.



networks. Mobile networks, on the other hand, are universally subject to individual licensing procedures<sup>336</sup>.

In all Member States, only a limited number of individual licenses are available for the provision of mobile networks and services, consistent with the terms of the licensing directive, because of spectrum insufficiency. To date, the majority of mobile licenses have been granted following a “beauty parade”<sup>337</sup>, although recourse to auctioning procedures is being increasingly used for the allocation of additional spectrum capacity<sup>338</sup>.

Scarcity of spectrum and the consistent practice in the Member States of licensing mobile service provision, together with authorization of the use of appropriate radio frequency spectrum, raise the issue of how access to frequencies can be obtained by new fixed entrants in a fixed/mobile converged environment. Some fixed entrants have expressed concern that insufficiency of spectrum may prevent them from playing a constructive role in a fixed/mobile converged environment. To some degree, these concerns can be addressed by implementing appropriate conditions for spectrum trading, and through the release of additional spectrum for telecommunications purposes (some of which might currently be used inefficiently for non-telecommunications purposes or by government bodies).

The situation regarding mobile operators seeking licenses for the provision of fixed services is not subject to any comparable restrictions. According to the terms of the licensing directive, licenses for fixed services should be available to all potential market actors, without qualification. This has recently enabled a number of mobile operators to obtain fixed licenses to complement their GSM operations (e.g., AirTel in Spain, WIND in Italy, and Viag in Germany). These GSM operators will therefore be in a position to maintain national coverage based on mobile technology, while gradually establishing a fixed network presence. Over time, these operators may be able to bypass the fixed incumbent operator to a significant degree. In the United Kingdom, all mobile operators’ licenses automatically include a fixed operator license.

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<sup>336</sup> See ETO, Second Interim Report on Categories of Authorizations, Report to the European Commission . July, 1999.

<sup>337</sup> In Sweden, the licenses were given, for free, to the operator with the most beauty power . It is interesting to notice that TELIA, the Swedish incumbent, was not one of them. See further, the glossary.

<sup>338</sup> For instance, the NRA in Germany held a frequency auction on 28 October 1999. In Austria, additional spectrum is expected to be auctioned in the year 2000.

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**Chapter 4.1.3.2**

**Number Portability**

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Number portability refers to the ability of end users to retain their telephone numbers when they change their chosen network operator/service provider, their location, or their service. These types of portability are known, respectively, as operator portability<sup>339</sup>, geographic portability, and service portability. The absence of number portability means that changing service providers requires an end user to change his or her telephone number. This can act as a restriction to customers, who will be reluctant to use an alternative operator if they must change their numbers. In this situation, consumer concerns overlap with competition law concerns to the extent that new entry may be seriously hindered unless number portability is mandated. To date, whether and when to introduce number portability has been decided solely on a fixed-to-fixed and mobile-to-mobile basis. The increased use of personal numbers is, however, paving the way for number portability to be introduced across sectors (e.g., fixed/mobile/paging). The existence of personal numbers should result in the greater take-up of fixed/mobile converged services, since such services rely on calls being directed to a subscriber's fixed or mobile handset, depending on their location.

The existence of personal numbers in a Member State which has a clear identifying number prefix, facilitates portability in a converged services environment by overcoming many of the problems usually associated with tariff transparency when a number is ported across different platforms characterized by different retail pricing structures, namely, the premium attached to its acquisition and its identifiability import clear tariff messages to consumers. Personal numbers thereby create the opportunity for converged services to be provided for incoming calls<sup>340</sup>.

The Commission has addressed consumer and competition concerns in the fixed environment by mandating, in a revision to the interconnection directive in 1998, the introduction of operator portability by all fixed local access providers by 1 January 2000 (with the exception of those Member States granted a transition period for full liberalization)<sup>341</sup>. In

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<sup>339</sup> Operator portability can be further segmented into local number portability, mobile number portability, and non-geographic number portability (for services such as freephone and special rate services).

<sup>340</sup> Because personal numbers are a marketing tool for businesses, they also indirectly involve the called party in the tariff-setting process because they often share part of the burden of financing the service (personal calls are often treated as free calls by small businesses).

<sup>341</sup> See: European Parliament and European Council. Directive 98/61/EC of 24 September 1998 amending Directive 97/33/EC with regard to operator number portability and carrier pre-selection. (OJ L 268/37). 1998.

addition, the Commission has the ability to grant a deferment of this obligation where a Member State is able to demonstrate that such an obligation would impose an excessive burden on certain organizations<sup>342</sup>. No Member State has requested such a deferment, despite the range of potential issues, which might have arisen from the so-called “Y2K” problem as from 1 January 2000<sup>343</sup>.

The introduction of number portability on fixed networks is steadily growing across the EU. Number portability is already available on the fixed networks of seven Member States, with its introduction also foreseen in Denmark, Italy, Luxembourg, and Spain by July 2000 at the latest. Portugal and Greece – both of which were granted transition periods from full liberalization – are scheduled to introduce number portability on fixed networks by January 2002 and 2003, respectively. Ireland will introduce number portability by January 2001, having only fully liberalized its telecommunications market in December 1998.

As regards mobile networks, there is no explicit obligation under Community law that mobile operators provide number portability. The Commission was of the view at the time of its proposed amendment to the interconnection directive in 1998, that the obligation of mobile operators to offer carrier selection and number portability should be examined further. Accordingly, the United Kingdom and The Netherlands are the only Member States in which number portability is currently mandated<sup>344</sup> between mobile networks. However, number portability is scheduled to be introduced in Denmark, Italy, and Sweden in the near future<sup>345</sup>, while the telecommunications market commission in Spain has the power to intervene if mobile operators cannot agree on the technical standards for number portability. Germany is awaiting an ETSI determination on standards before the introduction of number portability for mobile operators. The ODTR has proposed the continuation of the current system of partial number portability in the short term in Ireland, but has decided to move in principle towards full number portability in the long term, if further study suggests that this is necessary. The introduction of number portability in Belgium, France, Greece, and Sweden, on the other hand, is not currently on the regulatory agenda. It is also not foreseen in

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<sup>342</sup> Article 20(2) of the Interconnection Directive.

<sup>343</sup> Namely, the potential for systems failures to occur because software has not been programmed to recognize date figures with three zeros in the date.

<sup>344</sup> Status Report on European Union Electronic Communications Policy. This report is regularly updated and can be found at <http://www.ispo.cec.be/infosoc/telecompolicy/tcstatus.htm>.

<sup>345</sup> It is hoped that this will be in force by the end of 2001.

Finland due to the apparent lack of consumer demand, while Portugal has yet to take a position on the issue.

Opinion from members of industry on extending number portability to the mobile sector was polarized in the study by analysis<sup>346</sup>. Some fixed incumbents and most mobile operators considered that it was not necessary to impose number portability on mobile operators and some fixed incumbents favoured the extension of the policy to mobile operators because the reasons for number portability are the same in the fixed and mobile sectors (on the basis of the principle of technology neutrality). This view was also supported by a minority of mobile operators (usually third and fourth operators). A third group of operators expressed the view that number portability could be applied equally to both sectors, but only where justified in both instances. Independent service providers in both the fixed and mobile sectors took the view that number portability should not be restricted to one sector of the market if services were to truly converge. Consumer groups echoed these comments.

The rationale for the introduction of number portability between fixed networks, both based on consumer empowerment and choice and because of the ability of such a policy to lower entry barriers, appears on first inspection to be more problematic in a purely mobile environment. A number of key technological, regulatory, and market issues, which are material to whether number portability should be mandated on mobile networks are:

- ◆ different market characteristics

Mobile operators argue that the market characteristics, which caused number portability to be mandated for fixed networks, do not appear to be present in the mobile sector now. Research undertaken by the telecommunications industry indicates that the demand for number portability on mobile networks continues to be relatively low<sup>347</sup>.

It is the lack of such demand by end users that has led the regulator to decide against the introduction of number portability in Finland. Moreover, the high levels of churn<sup>348</sup> experienced across all national mobile markets suggest that, with or

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<sup>346</sup> Fixed/Mobile Convergence and the 1999 Review.

<sup>347</sup> For example, a major European mobile operator indicated in its response to our industry consultations that less than 5% of its customers request the porting of their numbers.

<sup>348</sup> Calculated to be on average a 25% churn rate across Europe.

without number portability, mobile subscribers do not at present feel constrained to remain with an operator, but rather will migrate to whichever operator can best serve their particular needs. This is diametrically opposed to the situation in the fixed sector, where the costs of switching operators continue to be high<sup>349</sup>.

Some consumer groups have countered that the willingness of consumers to churn can be explained in part by their desire to upgrade mobile handsets because of the rapidly increasing functionality<sup>350</sup>. However, some NRAs and various consumer groups believe that the relative costs of mobile churn may become more important as markets mature technologically.

◆ costs

It is argued by mobile operators that the costs associated with implementing number portability for mobile operators do not appear to be justified in light of prevailing market conditions, in particular given the high level of churn and the relative lack of demand.

The considerable, and sometimes unforeseen, costs associated with the introduction of number portability have already been witnessed in the fixed sector. The cost issue continues to be the foremost concern of the fixed community with respect to number portability, and many new entrants consider it to be a significant economic burden that is not offset by greater access to the incumbent's customers. Other operators, however, argue that the high cost of the IN technology<sup>351</sup> necessary to facilitate portability is justified in the long term, given its utility in providing more advanced services such as personal numbering services and VPNs. Significant costs

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<sup>349</sup> For example, fundamental technological differences between the fixed and the mobile sectors also mean that a mobile subscriber can in one-day change operators, while that process on the fixed network may take weeks, if not months. In addition, allowing an alternative fixed operator into a residence is a significant consumer decision, which, in most EU Member States, also requires negotiations with the fixed incumbent operator (who, in most cases, owns the drop line into the home).

<sup>350</sup> Churn on prepaid cards has only one penalty - the cost of the mobile handset.

<sup>351</sup> Number portability can be provided using on-switch solutions, in which the information required is held in individual switches from which calls are forwarded, or more complicated off-switch solutions, in which the information required is held in a central database, though operational copies or subsets of this data may be held more locally. Although there has been agreement within ETSI on a market standard concerning number portability, two separate implementation schemes are currently supported by different industry groups. One of the alternatives being favoured by several operators is the special Signalling Relay Function, which is based partly on proprietary standards (which does not facilitate the adoption of a uniform pan-European solution).

will also be incurred by mobile operators in relation to the modification and development of operational support systems, such as those associated with billing, the maintenance of customer records, and fault monitoring. It is also reported that such modifications will pose significant technical and operational difficulties, which should not be underestimated by operators<sup>352</sup>.

◆ tariff transparency

Any advantage to be gained by the introduction of number portability may be offset by the further erosion of price transparency in the mobile sector. The operator serving a subscriber who avails himself of operator number portability will no longer be identifiable by the subscriber's telephone number. These concerns are no less applicable to intra-network calls (i.e., mobile-to-mobile calls within the same network), where tariffs for such calls are generally, less than those for inter-network calls. The popular and widespread tariff incentives used to generate greater intra-network traffic could become difficult to sustain with the introduction of number portability, because the identity of the network would become irrelevant.

Consumers have already complained to NRAs in The Netherlands and the United Kingdom - the only two Member States in which number portability has been implemented in practice by mobile operators – regarding the further threats to tariff transparency<sup>353</sup> costs. According to that operator, high churn rates indicate that customer loyalty to any given mobile operator is rare.

The cost allocation methods used regarding both number portability and carrier selection are the subject of a separate study in the “1999 Review” process undertaken by European Economic Research Ltd and entitled “Study on allocation of costs regarding number portability and carrier selection/pre-selection”.

◆ termination on mobile networks

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<sup>352</sup> See, for example: Arcome SA/Smith, Technical Options and Costs for achieving Number Portability: Final Report. 29 October 1997.

<sup>353</sup> In the context of the 1999 Review, a separate study on Tariff transparency in a multi-operator environment is being carried out by OVUM on behalf of the Commission.

When considering the extension of number portability to mobile operators one should not ignore the fact that there are different prices for the termination of mobile-to-mobile, mobile-to-fixed, and fixed-to-mobile calls<sup>354</sup>.

In the United Kingdom, the effects of number portability on different termination tariff levels has led to consumer concern where numbers have been ported between mobile operators, largely because the old termination charges were also ported along with the original numbers. In order to address this problem, OFTEL has intervened during the course of 1999 by requiring, in effect, that the same rates be charged across all mobile operators in order to avoid this problem. This policy constitutes a de facto application of a fixed termination rate policy for interconnection, which effectively rules out the possibility for competition in the termination of calls to mobiles (something which the Monopolies & Merger Commission has foreseen as a possibility in its recent calls to mobiles investigation)<sup>355</sup>.

Number portability should not be mandated if its effect is to undermine the potential growth of a competitive market for call termination. Until competition for call termination materializes, however, regulation of call termination on mobile networks may be thought by NRAs to be necessary<sup>356</sup>.

◆ distinct policies

Number portability was introduced at EU level primarily for geographic numbers. This policy was driven by the desire to foster local loop competition through the introduction of new entrants into local access markets. That policy orientation is not applicable to the mobile marketplace because numbers are operator-specific, rather than particular to a given local geographic territory. One solution to this problem was advocated by OVUM, namely, to mandate enhanced tariff transparency services

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<sup>354</sup> The primary means which a mobile customer has to identify those differential tariffs is its understanding of the particular tariff packages of a given operator, which is immediately identifiable by its number prefix. This is not comparable to the fixed sector, where numbers are location-specific.

<sup>355</sup> Monopolies & Mergers Commission Report on references under Section 13 of the Telecommunications Act 1984 on the charges made by BT Cellnet and Vodafone for terminating calls from fixed networks, December 1998 (hereafter the MMC Report).

<sup>356</sup> Insofar as an increasing number of mobile operators are being found to have SMP in their respective national market[s] for interconnection, this is already occurring by virtue of the application of the cost-orientation principle contained in Article 7(2), the Interconnection Directive.



such as “advice of charge” services, where the caller is provided at the point of call with information on the maximum tariff one will pay for any given call<sup>357</sup>.

Despite the views described above, it appears that number portability may be necessary to facilitate fixed/mobile convergence, given that customers might be offered integrated service packages using one number for both mobile and fixed communications<sup>358</sup>.

Eventually, the process of convergence can be best facilitated by the introduction of personal numbers, which have the potential to be used across fixed and mobile. Such personal numbers may have a price premium attached to them in light of their relative importance to consumers.

It can be considered whether there are likely to be market distortions if only some Member States mandate mobile number portability. There is some concern that the patchwork availability of number portability may lead to cost differentials between Member States. However, the current nationally defined scope of mobile markets ensures that all operators in each market will bear the same portability burden. Numbers are currently ported only intra-nationally and numbering plans only support such an allocation.

Although there are arguments to suggest that the market access issues associated with portability in the fixed sector do not apply in the mobile sector<sup>359</sup>, the view is that it is appropriate to mandate number portability between mobile operators. Ultimately, the increase of consumer choice is an important factor, which not only provides an even greater stimulus for competition, but also acts as a counterweight to market power being abused.

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<sup>357</sup> The mobile industry does not, at least at this present juncture in its historical development, display any of the characteristics of a commodity service.

<sup>358</sup> This view is supported by OVUM in its tariff transparency study, in particular in relation to fixed/mobile service number portability. OVUM are of the opinion that the difficulties associated with tariff transparency are likely to be greater in this instance, as the price differentials between fixed and mobile services are greater.

<sup>359</sup> For example:

1. There is little evidence to date suggesting that there is significant consumer demand for number portability between mobile operators. In a country such as Finland, where mobile penetration now exceeds 70% of the population, and where the number of mobile connections exceeds the number of fixed connections, there appears to be no meaningful consumer demand for number portability. Moreover, the high levels of churn exhibited by all EU Member States suggests that consumers do not feel that the need to change numbers acts as a disincentive to changing mobile operators.

2. The pro-competitive rationale for introducing number portability in the fixed sector is less persuasive in the mobile sector. Portability is a desirable pro-competitive goal, but not as critical an issue in the mobile sector.

Similarly, the principle of technology reliability would appear to be most appropriate to apply in a proportionate manner in those circumstances.

The fixed and mobile sectors have developed under completely different competitive conditions. In addition, fixed and mobile services are not totally substitutable services, at least not at this stage of their commercial development. The cost of porting numbers between sectors and the technical requirements necessary to achieve this are unlikely to be identical in the fixed and mobile contexts, which would act as a competitive disadvantage to those operators having to bear greater costs. Because of the technical difficulties inherent in achieving the results of such portability, its expense would be likely to outweigh its benefits. Moreover, any benefit in terms of competition is likely to be counterbalanced by a loss of tariff transparency, given the differences between fixed and mobile tariffs. In these circumstances, consumer concerns regarding tariff transparency would be significant.

With rare exceptions, the fixed incumbent operator will provide the most ever-present and competitive fixed/mobile package<sup>360</sup>. In such an environment, the possibility of foreclosure of competitors and the creation of potential network effects may be significant. Accordingly, it may be the case that such a converged operator should be required to provide the portability of its number to other providers of integrated packages. If this is deemed to be the case, and a more mature market sees the proliferation of fixed/mobile packages, the pressure to extend number portability obligations to all operators providing converged packages, regardless of the particular market sector in which they operate, may be irresistible. In particular, if service offerings continue to include multiple numbers (including mobile numbers) that are forwarded to the converged numbers, it will be difficult to justify portability requirements for all numbers other than the mobile numbers.

The most appropriate and least disruptive means of achieving full number portability across market sectors (or segments) is through the increased use of personal numbers, which can themselves be ported between operators. This one number solution, whereby any operator is sheltered behind the operator-anonymous personal number, is the most appropriate means of achieving a fully converged environment. As discussed earlier, by attaching a premium to the acquisition of such numbers, consumers are likely to be highly

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<sup>360</sup> Only in Greece, for example, has the first mobile license not been granted to the fixed incumbent. In the United Kingdom, the fixed incumbent, BT, was restricted until recently from holding a 100% interest in the first mobile operator, Cellnet.

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sensitive to tariffing issues; most importantly, parties calling such numbers will often be sharing the costs of calling a personal number with its owner<sup>361</sup>, rather than bearing the full costs of the call, as occurs today. As network convergence progresses, the move from a series of IN-sensitive switches communicating with one another to a single switch controlling both fixed and mobile numbers will make personal numbers more attractive to consumers.

To conclude, the issue of number portability, will mean the end of the usual association in the minds of consumers of particular quality standards, service packages, termination charges, and brand image with particular mobile operators. (This phenomenon does not occur in the fixed sector, where numbers are geographic-specific, rather than operator-specific.) Insofar as the “caller pays” principle continues to apply to such communications, it is arguable that the calling party is not price-sensitive to the level of termination charges for such services. On the other hand, evidence from consumers using personal numbers suggests that they are more price-sensitive to high termination charges.

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<sup>361</sup> As discussed earlier, business users will have every incentive to encourage their business associates or customers to use their personal number; in order to do so, market behaviour suggests that they are increasingly willing to bear some or most of the costs of such a service. As such, they are likely to be highly price-sensitive.

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**Chapter 4.1.3.3**

**Carrier Selection**

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Carrier selection can normally be accomplished in two ways - on a call-by-call basis or through carrier pre-selection:

- ◆ Call-by-call carrier selection (or “easy access”) exists where the default carrier is determined by the incumbent operator, but customers can override this determination and choose their (preferred) local, long distance, or international operator by dialling a short access code before every call.
- ◆ Carrier pre-selection (or “equal access”) exists where the local, long, distance or international operator is pre-selected by the customer, but can be overridden on a call-by-call basis.

The carrier pre-selection option is generally considered to be a second regulatory step, following the implementation of the call-by-call carrier selection option.

The origins of carrier selection lie in the desire of regulators to introduce competition for local, long distance, and international calls which, under a fixed monopoly environment, were charged at a premium (while purely local calls provided by a monopoly operator were subsidized with high long distance and international revenues). It was felt that because long distance and international services were the most price-sensitive, the introduction of competition for the origination of such calls was a regulatory imperative. It was believed that the full benefits of liberalization would only become available at the local level at a later stage in the liberalization process (i.e., because the roll-out of local networks was a risky and time-consuming endeavour). At the time of its introduction, many alternative local access operators took the view that a mandated pre-selection process, while generating price competition for long distance and international calls, could act as a disincentive to investment by new entrants in the local loop<sup>362</sup>.

The interconnection directive, as amended<sup>363</sup>, implicitly mandates the introduction of call-by-call carrier selection for all fixed providers by the dates set for liberalization (in most cases, 1 January 1998). While it also requires the introduction of carrier pre-selection, with

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<sup>362</sup> On the basis that, during the critical period of initial network rollout, international service providers at the expense of the fixed incumbent operator were seizing the most lucrative revenue streams, thereby making it difficult for new local network entrants to compete because of their lack of geographic ubiquity.

<sup>363</sup> See: Directive 97/33/EC 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). 1997.

call-by-call override, for fixed local access providers, with SMP no later than 1 January 2000, or no later than two years after the date for full liberalization in those Member States that have been granted transition periods.

Similar to its policy on number portability, the Commission has the ability to grant a deferment of the obligation to implement carrier pre-selection where a Member State is able to prove that such an obligation would impose an excessive burden on certain operators<sup>364</sup>. The United Kingdom was the only EU Member State who requested such a deferment until December 2000, on the basis that BT's switches have no latent carrier pre-selection functionality, and that service could not practically be in place by 1 January 2000 deadline<sup>365</sup>. The interconnection directive further gives Member States the discretion to extend the obligation to provide carrier pre-selection with call-by-call override to fixed operators without SMP, where this obligation would not impose a disproportionate burden on such operators or create a barrier to market entry. (NRAs are also allowed to leave this policy to market forces.)

The majority of Member States have implemented their carrier selection obligations into national law. Indeed, most Member States have favoured a staggered approach to the introduction of carrier selection services, preferring to limit its initial applicability to certain call types, such as national and international calls. The interconnection directive does not contain any such fragmentation. It contemplates that any interconnected operator will be authorized to demand pre-selection.

Mobile network operators are not specifically subject to the carrier selection obligations of the interconnection directive. Accordingly, it has been left to the discretion of the NRAs to determine if and when carrier selection should be extended to such operators.

As regards carrier pre-selection on mobile networks, Denmark and Finland are the only Member States where this type of indirect access is currently available on mobile networks<sup>366</sup>. Opinion from industry was sharply divided on the issue of whether carrier selection should

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<sup>364</sup> Directive 97/33/EC 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). 1997.

<sup>365</sup> At present, the United Kingdom and the Commission are assessing the most appropriate means of providing an interim solution until full carrier pre-selection is implemented (e.g., through the use of diallers).

<sup>366</sup> See: Status Report on European Union Electronic Communication Policy, (<http://www.ispo.cec.be/infosoc/telecompolicy/tcstatus.htm>)

be extended to the mobile sector, and on what terms. On the one hand, international service providers and consumer groups take the view that the introduction of such a policy is a pro-competitive and consumer-empowering measure, which is also justifiable on grounds of technology neutrality. On the other hand, most fixed incumbent operators and mobile operators argue that carrier selection should not be mandated in the mobile sector. In particular, they argued against the principle of extending carrier selection to the mobile sector simply because of its implementation on fixed networks. They also argued that the characteristics of the mobile market, particularly in terms of mobile network architecture, investment requirements, and growth rates are very different between the two sectors, all of which have a bearing on whether such a policy should be adopted. Some of these operators were concerned that the extension of carrier selection to the mobile sector could hinder tariff innovation and undermine the pre-paid card market<sup>367</sup>.

As regards the possible application of a carrier selection policy to the mobile sector, the arguments raised in the context of the discussion on number portability are of equal importance. In addition, a number of other relevant market-related issues are summarized below:

- ◆ stimulating long distance competition

In most Member States, there are at least three mobile operators currently offering consumer choice in the origination of long distance and international calls. In addition, the incentive for mobile operators to offer competitive rates for their long distance and international services should, in principle, ensure that they also seek the most competitive rates from their preferred long distance and international providers<sup>368</sup>.

- ◆ roaming and international calls

The vast majority of international traffic on mobile networks is traffic generated by customers roaming in another country. Consequently, total outbound international

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<sup>367</sup> In this regard, a number of NRAs have made the point that fixed operators faced similar problems and that such arguments are not conclusive on the issue of consumer welfare, given that carrier selection will not replace and is not substitutable for prepaid services.

<sup>368</sup> Additional factors to be taken into account are that mobile operators by and large do not differentiate between national long distance and local call tariffs.

traffic from customers on their home network often represents only a tiny proportion of total roamed traffic for many mobile operators<sup>369</sup>.

◆ technical

From a technical perspective, as a result of fundamental changes in the Inter Operator Tariff (“IOT”) charging principles, which took effect on 1 April 2000 as a result of the introduction of the so-called TAP3 system, the existing inability of mobile operators to bill for variable international call rates<sup>370</sup> has been overcome.

◆ tariff transparency

The multiple tariff packages offered by mobile operators are already very complex. While evidence of the fact that healthy competition exists in the origination of mobile traffic, these tariff packages are also a source of some concern for consumers. Adding another alternative price package for international calls, which might mean the loss of some or many of the functions otherwise available on international calls provided by the home network operator<sup>371</sup>, has the potential to create an unnecessary degree of confusion among consumers.

◆ quality of service

A number of mobile operators have remarked that if carrier selection were to become widespread, they would not be able to guarantee sufficient quality of service, if it resulted in irregular traffic spikes on their networks. By not being able to control their traffic volumes<sup>372</sup>, it is claimed, mobile operators are concerned that they will

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<sup>369</sup> Namely, for many mobile operators, often less than 5% of total calls originated in mobile operators’ home countries are terminated in another country. For a small number of operators, however, that figure can be significantly higher (up to 20%).

<sup>370</sup> Consequently, variable mobile rates are not available (e.g., 30% discount on Belgium-to-Greece calls for three months, 15% off all calls from Belgium-to-Nordic countries, 10% for all of an individual customer’s calls, and so forth).

<sup>371</sup> For example, in some Member States, Short Messaging Service (SMS) functionality and voice-mail retrieval facilities may be lost in the event that another operator carries the international leg of the call.

<sup>372</sup> This is illustrated by the heavy promotion of off-peak calling options, which has proven to be very popular in Member States such as Italy.



also not be in a position to control key technical quality aspects of their service<sup>373</sup>. Although the quality of service line of argumentation does not have the same dimension in the fixed sector, where spectrum constraints are not an issue, consumers and indeed access providers have sought to rebut the quality of service argument by arguing that the majority of traffic carried by indirect access providers is substitutional in nature (rather than additional), which does not create significant capacity problems regarding peak and off-peak tariffs. Moreover, it is claimed that the delivery of a call off the system will not damage an operator's network integrity<sup>374</sup>.

A regulatory imbalance such as the lack of carrier selection on mobile networks might exclude fixed operators from competing for the international voice traffic of mobile subscribers, while allowing mobile operators to offer alternative voice services to the subscribers of fixed operators. Mobile operators have argued that, to the extent that price differentials continue to exist as between international calls generated on fixed and mobile networks, it is arguable that consumers will have a strong incentive to use their fixed lines to make most international calls from their "home" Member State. Although the same option would not be available where consumers are travelling outside their home Member State, at least partial substitution exists in the form of prepaid calling cards and mobile VPNs for business customers. Most importantly, it is argued that the introduction of carrier pre-selection might result in the disappearance of various tariff package offers, and an increase in peak hour capacity (which is expensive to achieve on a cellular network).

Most convincing is the argument that pre-selection provides only an incremental benefit beyond call-by-call selection, while at the same time being a relatively expensive means of providing such a small benefit. Consequently, pre-selection on mobile networks would be very costly to implement, while at the same time providing little additional value to

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<sup>373</sup> For example, a major European mobile operator claimed that it has been required to make approximately over 1,000 modifications to its network per week in response to the recent take-up of prepaid card offers. The types of network modifications which need to be made, range from software programming adjustments to physical network changes and moves. For example, certain coastal areas in the summer of 1999 experienced unprecedented heavy network congestion during that period, as tourists availed themselves of these new tariff packages. These traffic patterns had not been evidenced in earlier years.

<sup>374</sup> In the alternative, it is claimed that, to the extent that the indirect access provider results in the creation of incremental rather than substitutional traffic, it will in any event benefit from an interconnection profit rather than a retail profit.

consumers to offset that cost<sup>375</sup>. Ultimately, the opening up of the mobile sector through indirect access is highly relevant in determining whether or not direct access to mobile networks should be mandated in a manner similar to that in which access is mandated to fixed networks.

The option of providing carrier selection for domestic long distance calls (as opposed to international calls) on a mobile network is questionable. Because mobile operators do not differentiate between local and national long distance calls, subjecting a mobile operator to such a requirement would effectively confine them to being mere transport providers. Comments received from the mobile industry also suggest that such a requirement would have a serious negative impact on the willingness of mobile operators to make the large investments required for third generation mobile systems. The United Kingdom regulator, OFTEL, supposedly took these investment considerations into account when it made the decision to impose a “retail minus” pricing formula<sup>376</sup> on indirect access to mobile networks, applying to both national and international calls made on this basis.

Undoubtedly, carrier pre-selection should not be mandated for mobile operators. There are strong commercial and competition law reasons why mandating such a policy, at least at this stage in the development of the market, imposes significant cost burdens on operators which are not offset by the relative consumer choice benefits. The introduction of call-by-call carrier selection for international calls made on mobile networks will inject even greater competitiveness into the market for international mobile traffic than already exists.

It is not convincing that a call-by-call carrier selection policy should be extended to national calls. To the extent that the Commission takes the view that such an approach is necessary, one view could be, given the competitiveness of call origination in mobile markets and the necessary degree of investment which is required in third generation mobile systems that indirect access need not be charged on a purely cost-based formula. Market forces will ensure that, should there be significant consumer demand for such a facility, operators will respond to the actions of other mobile operators obliged to provide such service.

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<sup>375</sup> The cost-benefit approach is based on the requirements of Article 9 of the Subsidiarity Protocol to the Amsterdam Treaty.

<sup>376</sup> On the basis that service providers relying on indirect access would need to be very efficient or to be able to provide some additional value added for consumers.

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**Chapter 4.2**

**The Substitution of Fixed to Mobile Services**

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One of the most difficult aspects of analyzing the communications market since the widespread take-up of mobile services, is the substitution of fixed calls by mobile calls. Traffic is certainly generated by the availability of mobile handsets when people are on the move, but some of this traffic would have been generated at different times on the fixed network if the mobile option were not available.

Key aspects of service substitution and other types of substitution are explored in Chapter 4.2, together with the regulatory implications of that substitution. In all cases, it is very difficult to estimate the precise extent to which substitution is taking place. However, we can be confident that it is happening and that significant amount of traffic and revenues are involved in the process.

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**Chapter 4.2.1**

**The Substitution of Services**

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Perhaps the most obvious form of substitution is service substitution. This is when a customer dispenses with the services of a fixed line in favour of making and receiving all calls over a mobile telephone. There are a number of reasons why a customer might wish to do this:

- ◆ living alone

A person living alone with only voice communications requirements may recover the additional cost of making all calls over a mobile telephone by not having to pay the fixed cost associated with having a fixed telephone line. For many customers, this approach will result in a cost saving.

- ◆ speed of obtaining a line

Obtaining a mobile connection is usually much quicker than obtaining a fixed connection to a residence, particularly when a premise has not had a fixed telephone connection in the past. There is no infrastructure required at the network level for an additional mobile customer as there is for a connection to the fixed network (line and line card).

- ◆ mobility

There is a strong convenience benefit to using only a mobile telephone for people who change accommodation regularly (i.e., especially younger consumers). There is no need to inform the telephone company when moving to organize transfer of the line and number. Furthermore, a customer moving from one subscriber trunk dialling (STD) code area to another can keep the same telephone number if they use only a mobile.

The standard terminals used by customers of fixed and mobile services tend to be very different in character. Fixed terminals in most residences are relatively unsophisticated devices usable only for speaking and listening. Some limited redial and number storage facilities may be available and an answering machine may also be used, although answering services from the fixed telephony provider are now proving popular in many countries.

Even the most basic GSM mobile handsets, by contrast, are sophisticated computers with an extensive range of functionality (much of which is still unused by most mobile telephone consumers). However, the functionality which users take for granted in a mobile

handset is increasing the fixed communications user's expectations of the handset functionality.

With growing Internet usage in the home, an increasingly large number of household PCs are being used as communications terminals. The flexibility offered by PCs means that people are able to use their computers as windows to the World Wide Web, for e-mail access, data processing, and storage, and for voice telephony and videoconferencing.

In spite of the suitability of mobile telephones to meet all the communications needs of some consumers, the future of fixed telephone services is assured. There are a number of reasons for this, ranging from human requirements to the technical capabilities of mobile technology, both now and in the future:

- ◆ Phone calls are often made to households rather than to individuals.  
People calling parents do not necessarily want to call father or mother but want to call home. The availability of a general contact point for a family is probably too useful to be dispensed with, even when mobile penetration approaches 100% of the population.
- ◆ Even where a mobile telephone meets the voice communications requirements of an individual, the ability of mobile services to meet all of that person's data communications requirements is extremely limited. Even a few years ago, discussing the data communications requirements of private individuals would have seemed ridiculous. However, Internet usage has grown enormously in recent years, and that growth is set to continue.
- ◆ Current data rates available over GSM (typically 9.6 kbits/s) are completely unacceptable to most users, who are able to access the Internet at speeds of around 28.8 kbits/s from home. This situation will not be resolved by the arrival of higher-capacity mobile technologies, such as General Packet Radio Service (GPRS), because over the same time period we expect that higher-capacity fixed access technologies such as xDSL and cable modems will maintain the significant performance advantage enjoyed by fixed access for data communications.

As well as service substitution, substitution of individual calls from the fixed to the mobile telephone network is a growing phenomenon. It is increasing as the price difference between fixed and mobile calls falls, and as the incentive to use a fixed telephone where

possible for calls diminishes. The spread of mobile telephony to the mass market has created many opportunities to make calls when it would not otherwise be possible to do so. Calls are made while travelling or from places where access to a fixed telephone is limited or impossible. Many of these calls would never have occurred without access to a mobile telephone. However, some calls are made under these circumstances which would have taken place at another time on the fixed network. These calls are said to have been substituted from the fixed to the mobile network. There is little doubt that call substitution is taking place. It is very difficult to estimate the scale of the substitution, but it is generally regarded as significant and increasing.

In addition to the type of call substitution described above, there is a trend towards people choosing to use their mobile over an available fixed telephone. This is generally for reasons of convenience: the mobile handset may be more easily accessible, or the number of the called party may be programmed into the mobile handset. In addition, there may be a price incentive to use a mobile. As well as being more convenient, using a mobile can often be cheaper than using a public payphone for short calls.

The fact that substitution at both a service and a call level is taking place demonstrates that, in the mind of the consumer, there is a blurring of the traditional distinction between fixed and mobile services. Such a situation is likely to require a regulatory framework that is consistent in its fundamental approach towards both fixed and mobile services, in order for a thriving converged market to develop.



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**Chapter 4.3**

**The Consumer Demand for New Data Services Offered by  
Mobile Telephony**

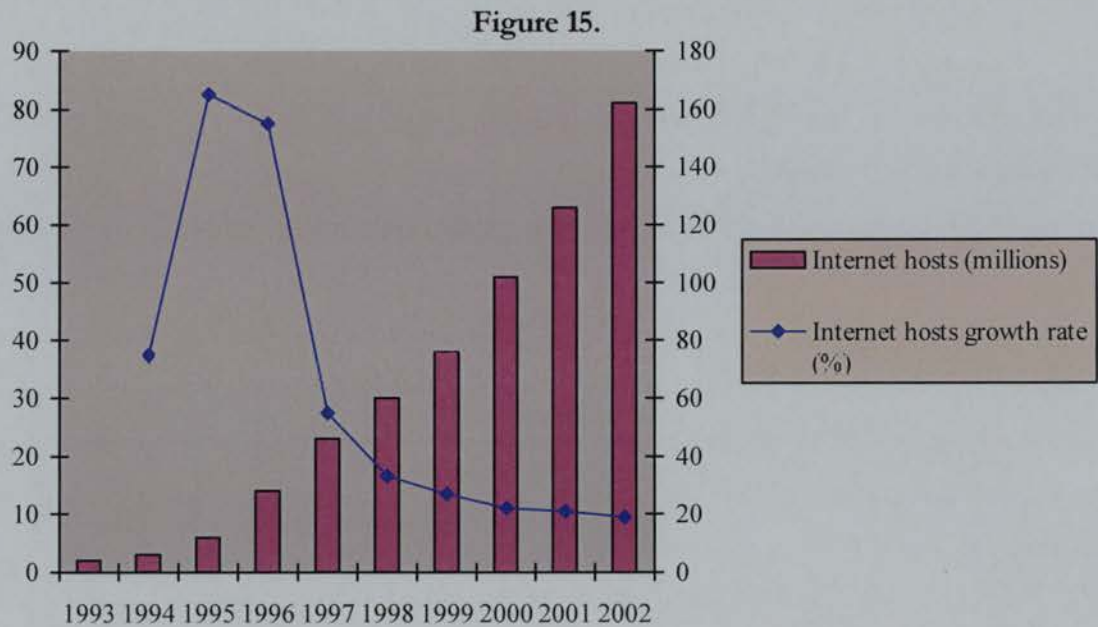
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While simple voice has been the predominant service provided over mobile networks, a wide variety of data services are beginning to be offered. In the short term, the range and complexity of these services is likely to increase significantly. This chapter reviews the reasons for this change, and highlights some of the indicators, which suggest that demand for mobile data services will rise rapidly.

The nature of information exchange by customers using fixed networks is rapidly evolving from voice-based to machine-based interactions. This is happening not only in the business sector, but also among the consumer sector, where the remarkable growth of the Internet has fuelled demand for data communications.

The growth in use of the Internet over the last three years has been dramatic. In several countries, over 50% of traffic on national and international trunk routes is now data, and the same is true of transatlantic routes. In 1998, the number of global hosts (computers that deliver basic Internet services) was estimated at nearly 30 million, having grown at over 80% per annum for each of the preceding three years. It is forecast to continue to grow rapidly, as illustrated in figure 15<sup>377</sup>:



<sup>377</sup> For more information, see the Network Wizard domain survey at [www.nw.com](http://www.nw.com). The network wizard is owned by the ISC. The ISC started with a grant from the UUNET Communications Services (UCS). The ISC then became a fund administered by the Internet Multicasting Service, with in kind and financial support from a variety of corporate sponsors such as Usenix and Network Solutions, Inc.

This impressive growth of the Internet has been fuelled by:

◆ easy access

The network can be accessed through any of the communications networks in existence in the world today.

◆ significant externality gains

Through connecting to the network, each user has access to an extraordinary range of information, as well as to the 100 million Internet users worldwide.

◆ low or zero connection costs

At its simplest, access to this communications web can be free (assuming a PC with modem is available), with calls charged at local rates.

With the falling cost, increasing availability, and dramatic improvements in performance of the PC, consumers have increasingly turned to buying PCs for the home<sup>378</sup>. At the end of 1998, approximately 18% of Western European households had a PC. Of these, about 40% were connected to the Internet. By 2003, it is anticipated that 60% of households will have a PC, of which over 80% will be connected to the Internet. There are likely to be well over 70 million home users of the Internet by that time.

PCs are often sold with the software required to access the Internet pre-loaded, making Internet access very easy. Subscriptions to Internet service providers are also readily available through a variety of sources, such as major retail chains and newspapers. The combined effect of easy availability of affordable PCs and low-cost Internet access from home (in some cases even the calls are free) has led to rapidly increasing usage of the Internet among consumers over the last three years. It is quite likely that in the near future there will be more computers connected to the Internet among households than in companies. This rise in residential usage will be fuelled by the development of alternative access methods and terminals, such as digital TV set-top boxes and games consoles connected to a TV, which are designed to enable Internet access without the need to buy a PC.

In addition to the PC growth the SMS (text messaging) has grown substantially in volume over the past two years. Although this cannot be properly regarded as mobile data because of its very limited data carrying capability, it is likely that it is an important pioneer to

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<sup>378</sup> See NUA Internet Surveys, Section Demographics at [www.nua.ie/su](http://www.nua.ie/su). For a follow up article see: Low income homes get online in the UK. NetValue. 25 May 2001.

the more widespread use of mobile data, indicating that consumers would like to communicate using means other than straightforward voice. Further, there has been a substantial increase in demand for portable computing devices such as laptop PCs and personal digital assistants. These devices now offer comparable levels of performance to the larger fixed machines. Within Western Europe, the proportion of PCs in the home which are portable rises as high as 22% in the United Kingdom. These devices can provide significant benefits to the user by enabling them to access the Internet and to download files, e-mail, and applications while on the move. It is likely that the substantial growth of Internet usage in the consumer sector will create demand for similar services to be provided in a mobile environment.

The nature of consumers' requirements for mobile telephony is changing. As fixed Internet penetration rises in the residential sector and as ownership of portable computing devices increases, there will be greater demand for access to mobile data services while on the move. The existing GSM network offers a relatively poor service in this area, particularly when compared with the performance of dial-up services over fixed lines with which consumers are familiar in the home environment

If the potential for mobile data is to be realized, it is clear that networks will need to be transformed. Speed, reliability, and cost will all be improved, both through technologies that are becoming available to enhance existing 2G networks, and through 3G technologies. Three technologies are becoming available to increase data rates on GSM networks before the introduction of 3G networks:

- ◆ high-speed circuit-switched data (HSCSD)
- ◆ general packet radio service (GPRS)
- ◆ enhanced data for GSM evolution (EDGE)

The initial implementation of HSCSD offers speeds of up to 56 kbits/s by increasing the channel data rate from 9.6 kbits/s to 14.4 kbits/s, and permits the aggregation of up to four channels per user. Given that today's data applications tend to generate traffic in short bursts, and that when in use these channels are unavailable to other users, this is a relatively inefficient and expensive means of delivering certain types of data service, such as Web browsing.

GPRS will overcome this difficulty by introducing a packet-switched service. This enables channels to be made available to a number of users simultaneously, thus allowing more efficient use of the limited amount of spectrum that operators have available to them. GPRS was generally available from around the second quarter of 2000 and offers up to 115 kbits/s by aggregating up to eight 14.4 kbits/s channels. GPRS requires various software upgrades to the network and is being rolled out by a number of operators in advance of full 3G services. During 1999, several operators such as Cellnet, Sonera, T-Mobil, and Sonofon all announced that they had contracted with equipment manufacturers to provide GPRS equipment. On 10 November 1999, Cellnet made the world's first live GPRS call over a GSM network, followed by Mobilkom on 23 November.

GPRS is considered to be one of the ideal bearers for WAP (wireless application protocols) applications. WAP is a method of slimming or cutting down web-based content so that it can be delivered effectively to handsets at the relatively slow bearer rates currently available. WAP requires content to be marked up by using a special language, and delivers content to a specialized handset. It allows the provision of advanced, interactive, and real-time mobile data services such as Internet-based news services or mobile banking. WAP-based services developed rapidly in 1999 in Europe, as did imode (an alternative standard) in Japan<sup>379</sup>.

At the end of 1999, WAP sites were making slimmed web-based content available to customers in a number of European countries. In October, for example, Nokia and the Woolwich bank announced the launch of Internet banking services with secure access using WAP technology<sup>380</sup>. In November, Nokia and Genotronics announced a global partnership for the delivery of e-business financial services, and Telia announced that it was to extend its WAP services. Sonera has launched trials of its Zed portal, a website which will enable users to access tailored information on the Internet from their mobile handsets. The service is expected to be launched spring 2002.

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<sup>379</sup> Rivalry started by a next generation of portable devices sets fire to the mobile war. *Financial Times*.

<sup>380</sup> For a description of the companies and the companies' announcements see their respective websites and for a good market analysis see the *Financial Times*, Wednesday July 18, FT Telecoms section, especially the article, *Mobile Services: The Hunt is on for Killer Applications*.

EDGE is likely to be offered from the year 2001, and will enable operators to introduce 384 kbits/s services within their existing GSM networks. EDGE will require significant hardware and software changes to the network, as it will use a different modulation scheme from that used for existing 2G GSM networks. The higher data rates offered by EDGE will encourage users to generate more traffic. Although EDGE increases spectral efficiency, it is unclear whether 2G networks using this technology will be able to support the level of traffic generated by data services within existing spectrum allocations. Nevertheless, for GSM operators that currently have a low utilization of existing spectrum allocations, EDGE represents a plausible route forward.

3G services, which are scheduled to begin rollout within Europe during 2002, will offer a number of enhancements to consumers. These include:

- ◆ higher-speed data services

3G will in theory offer speeds of up to 144 kbits/s or 384 kbits/s for wide-area coverage to a moving terminal, and 2 Mbit/s in certain areas to a stationary terminal. (This will give full graphical content on the Internet, videoconferencing, and real-time video.)

- ◆ the potential for lower-priced voice services

3G services make much more efficient use of the available spectrum than existing 2G GSM services. (This will give lower mobile voice tariffs, cheaper services, and an easier possibility for new entrants.)

The introduction of new advanced networks, which are capable of supporting data communications at high rates, will enable business users to access a wide range of new services. Although the consumer will also benefit from these services, the price premium for mobility will mean that they will still have a significant requirement for fixed data access. This demonstrates that, for the foreseeable future, consumers will require a combination of fixed and mobile services to meet their evolving communications requirements.

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**Chapter 4.3.1**

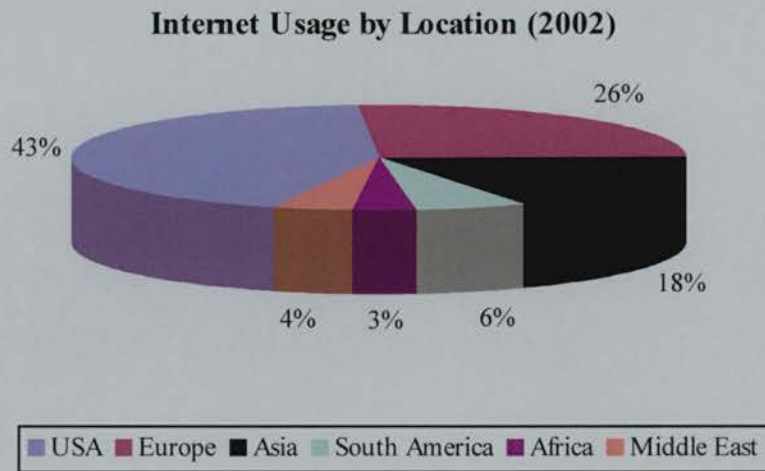
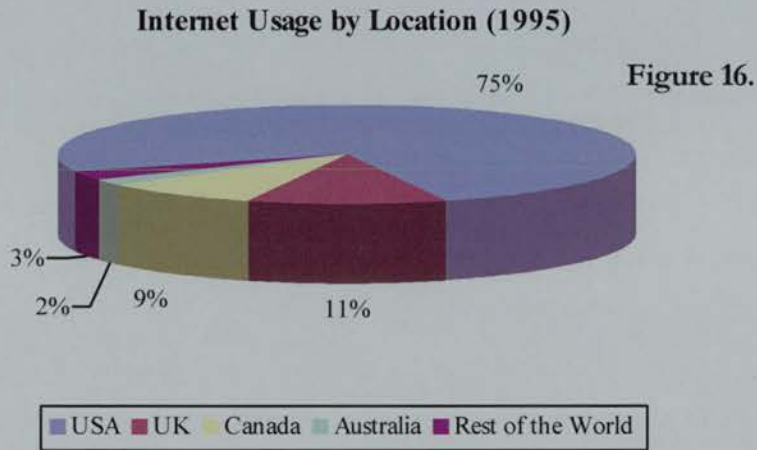
**Economic Efficiency and Market Failure**

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This section considers the evidence of continuing and rapid subscriber growth in the Internet, noting that the Internet looks to be at an early stage of development with less than 20% of households in most countries presently subscribing.

The Internet appears to be most developed in the USA, as can be seen in figure 16, which show the worldwide distribution of Internet users<sup>381</sup>.



This should not be surprising, given that the Internet was almost entirely an American phenomenon until the early 1990s<sup>382</sup>. The residential penetration rate in the USA was estimated to be 33% at the beginning of 1999. This figure is approximately equal to the

<sup>381</sup> NUA Internet Surveys. For regularly updates, see: [www.nua.ie/su](http://www.nua.ie/su). For a description NUA Internet Surveys, see NUA in the Glossary.

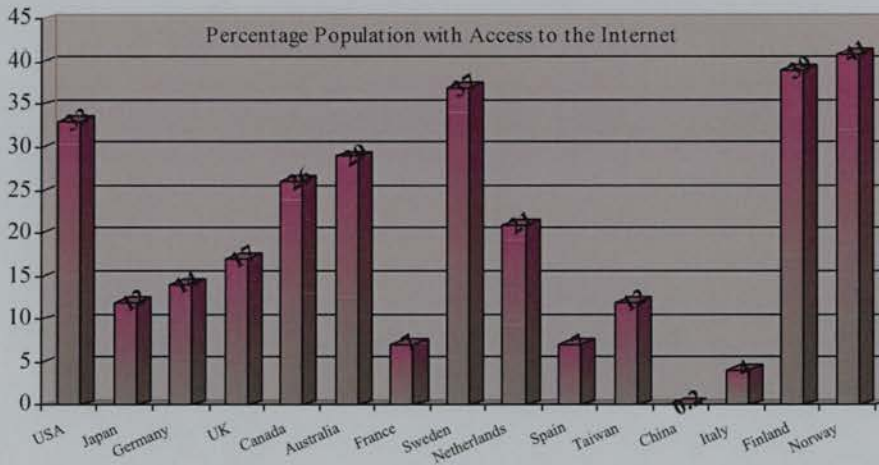
<sup>382</sup>For example, of the 217 Nets existing in mid-1988, only 23 % were non-US (Merit statistics).



percentage of the US population using the Internet<sup>383</sup>. In Europe, higher rates have been assessed for Internet users in the Nordic countries, with Canada, Australia, and New Zealand with the next highest penetration rates, as shown in figure 17. The more up to date data regarding Internet penetration tends to come from less official sources, mainly from within the industry itself, although in the EU a recent European Commission sponsored survey by Gallup provides us with very recent figures. The difficulty of obtaining official updates of these statistics is perhaps best explained by the fact that the Internet is a global, mainly unregulated collection of many computer networks, built by independent companies of different national domicile.

Between 1992 and 1997, average growth rates in the EU were approximately 50% per annum but at times it has been much higher than this for some countries, and estimates suggest that with the possible exception of those Member States which already have very high residential penetration, healthy growth will continue for some time into the future. Given these growth rates, data which is even 6 months old can be out-of-date. The data presented, however, has a value in conveying the impression that we are at a fairly early stage of development in the Internet where growth rates are very high indeed.

Figure 17.

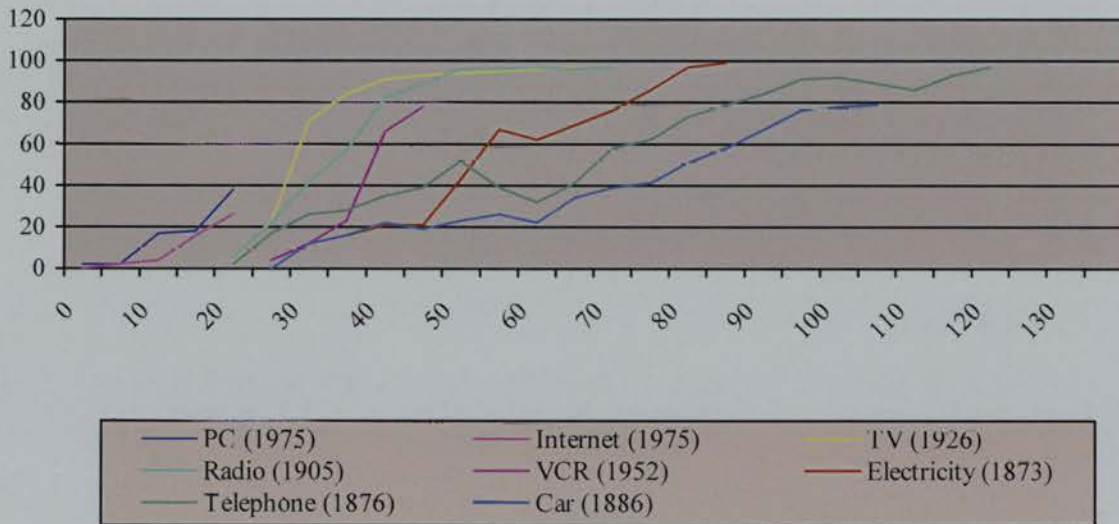


<sup>383</sup> Data showing residential access as a percentage of total households is not commonly available, although where estimates exist they tend to show figures that are 20%-30% below the penetration rate of individuals as a percentage of the total population.

One factor which will help drive growth in the next decade will be the growth in the speed of the Internet, explained by improvements in software, processing speeds, and the adoption of new high speed access technologies. In the latter case, these include xDSL technologies over copper loops and other high speed fixed wire and radio spectrum based alternatives. In a recent workshop in Brussels, organized by the Massachusetts Institute of Technology's Internet and Telecoms Convergence Consortium (MIT ITC) which looked at Internet regulatory issues for the next decade, organizers spoke of the "Internet being 5 to 10 times larger and 50 to 100 times faster than it is today"<sup>384</sup>.

Consumer Products, Percentage of Consumer Use

Figure 18.



Computers in homes will currently provide the upper limit for residential Internet subscription rates. Recent estimates of PC penetration differ, as can be seen from the diagram. However, estimates suggest that PC penetration varies significantly between Member States. Internet access to the home can also be expected to vary substantially between Member States, with some countries having residential subscription rates of less than a quarter of that of other countries. It has been suggested that perhaps the most

<sup>384</sup> This diagram is taken from Jupiter, and Morgan Stanley Dean Witter. Regularly updates can be found at the Web-site: [www.jupiter.com](http://www.jupiter.com).

important factors in explaining these differences are culture and language and a liberal telecommunications regulatory environment, although where there are large differences in per capita DGP, we would expect income to also be a factor.

To give an idea of how time used between a varieties of consumer products in the market, the penetration and time scale from American consumers is used, which might not differ very much from a European average user<sup>385</sup>. An illustration of this is given in figure 18, on page 255.

The task in this section is to provide an analysis of any Internet market failure issues which may warrant official intervention, possibly including subsidies for specific Internet services. The relevance of this part of the study is that it is the view that Internet telephony will probably show substantial growth in the Market and will take market shares, at least from the fixed lines.

Market failure is the feature economists look for in order to see if there may be a case for overriding market outcomes. If market failure is found, one can usually add two provisos before recommending intervention:

- ◆ The market failure must be substantial.
- ◆ The regulatory intervention envisaged must credibly be expected to improve the overall situation.

For this purpose, some Internet services are discussed in terms of broad categories in order to assess whether there exists significant market failure.

- ◆ IP telephony and IP fax
- ◆ e-mail and multi-cast

IP telephony and IP fax offer technologically different means of having a telephone conversation and sending a fax. For IP services the information is sent by a stream of packets in something very slightly less than real time, and getting quicker. The switched circuit alternative (PSTN) provides a completed circuit for the duration of the phone call or fax. If people have a telephone and a fax machine, they will be able to make and receive telephone calls and send faxes, whether they are connected to the Internet or not.

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<sup>385</sup> See further, Bill Gates, The Speed of Thought. (Microsoft).

Nevertheless, there is no market failure here. One subscription does not directly confer benefits on others, even though there appears to be a linkage leading to this effect. Virtually any economic activity will have cause and effect linkages and multiplier effects. These are not a sign of market failure. This is consequently not a basis on which to introduce Internet related subsidies.

Beneficial externalities are involved with both one-to-one e-mail and multi-cast e-mail. Taking ordinary e-mail first, the network externalities involved with this service are based on the same argument as for the telephone network. Each additional person who has e-mail results in an additional benefit going to those who already have it, but those considering whether to subscribe or not tend not to take this into account. This means that private benefits understate social benefits.

Regulated prices for inputs, such as interconnection, vary quite a bit from one Member State to another, rather less for reasons of cost, but mainly because NRAs tend to be on a learning curve to discover what these costs are. However, while this will have led to some distortions, as with “free service” in the UK, the lower end of ISP subscription prices from the Eurodatareport for January 1998 are in fact roughly similar from one Member State to another, and grouped around 100 Euro per annum. (The obvious difference in some is likely to be explained by a different level of service being offered.) The indications are that prices paid by subscribers do not suggest any substantial market power problems in this part of the industry.

The share market values of those companies which are listed are not determined by their current earnings, but by their expected future earnings. If from today it became clear that the Internet would grow no more, the share value of these companies would fall on the news to a fraction of their present value. For most such companies current profits are modest and frequently negative, and certainly do not explain the impressive rise in share prices. Shares in Freeserve, a subsidiary of Dixon’s the UK electronics retailer, were sold earlier in 1999 and resulted in a share-market value for the company of approximately 3 billion Euro. Yet for the 52 weeks ending May 1 Freeserve reported a loss of 1.4 million Euros on revenue of just 4 million Euro<sup>386</sup>. At least in the medium to long run, it is expected

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<sup>386</sup> Financial Times 12/7/99. The share price of Freeserve later declined, reportedly because investors came to realize that this market has low entry barriers.

future profits that are driving these prices, and to earn these future profits firms need to have a substantial customer base, which Internet firms are currently seeking to acquire. The situation is not unlike that which prevailed around the turn of the century in the USA, where there were as many as 4,000 telephone companies all vying to sign up customers by offering very low prices<sup>387</sup>.

As opposed to the physical access resources provided by a fixed wire telephone company, Internet subscribers can fairly easily switch from one provider to another, but clearly investors are betting that customers will tend not to float freely between providers. In the case of ISPs (Internet service providers), customers do face non-trivial switching costs. They will have an e-mail address registered and they will have overcome any initial teething problems getting the ISPs' software to operate on their PC. Moreover, because information is imperfect they cannot be sure that switching ISPs will in actuality provide them with a better price/quality ratio.

The bottom line is that at current subscription and growth rates, and paying regard to existing incentives to price services at very low levels, there is no evidence that ISP prices need to be regulated lower than they are presently in order to capture network benefits. On the contrary, it appears that the market is managing this situation quite well.

The universal service issues peculiar to broadcast messaging can be investigated by looking at the underlying cost structure of substitute technologies, and the relative value of these technologies as perceived by end users. At present, broadcast information can be sent using television, but only the postal system provides an acceptable level of message delivery.

A case for government intervention can consequently be made when Internet subscriptions stagnate, and the additional welfare of converting to broadcast e-mail is positive. This point has not been reached yet, and perhaps few if any countries will be there in the next five years. Because computers and information technology are complicated to use, there is a possibility that Internet penetration will stagnate at levels well below those for the telephone. Government intervention to influence the provision of Internet services to public institutions is mainly explained by politics and the fact that government institutions tend to be involved in the provision of services, which are considered merit goods.

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<sup>387</sup> AT&T's patents had expired in 1894.

It can be established that the market in which ISPs sell to users appears to be pretty competitive virtually right across the EU. However, calls from Internet users to ISPs are mainly delivered over the telecoms network, normally the incumbent's network. As well as payments to the ISP, subscribers who do not have a leased line connecting them to their ISP also have to pay metered charges to their telephone company. Indeed the part of the telephone bill which results from calls to the ISP will typically be greater than the ISP's charge over the same period, and often substantially greater.

If the market for the provision of telecoms infrastructure was effectively competitive, subscribers would be offered alternative packages, some of which would involve un-metered service, thus addressing the first concern. One of the reasons incumbent telephone companies may not offer such packages is because regulations prevent them from doing so. Where there is a dominant incumbent, regulatory rules are often adopted to prevent the incumbent from using packages strategically to make competitive entry less attractive. Consequently, regulations themselves can prevent packages (or a full range of packages) from being offered by the incumbent. Another reason packages are not offered is because incumbent operators are still very dominant and may not yet be used to responding in creative ways to customers' needs. A range of service packages based on these cost differences can lower total Internet expenses, allowing customers to select a tariff offering which is most suitable for them<sup>388</sup>.

Absent regulation preventing the incumbent from entering into such arrangements, very large customers tend to be able to negotiate their own deal, which mitigates against market power without necessarily fully overcoming it. For public institutions like schools and hospitals, it will normally pay for them to negotiate as a group to get the best deal. As is outlined above, inflexibility introduced by regulations, and also due to the market power of the incumbent, can result in public institutions paying more than they might otherwise pay if all relevant markets were effectively competitive. These factors may mean that intervention by the authorities can result in public institutions obtaining lower priced Internet access than they would do otherwise.

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<sup>388</sup> Customers' willingness to pay also differs, and this is another reason incumbents may offer different packages. In theory, the welfare implications of price discrimination on the basis of either factor, can often be positive. See Philips (1983).

However, there are also some competition concerns with this type of intervention. In many instances market power will not endure in the medium to long term. Utility networks tend to be exceptions, but this is less true in telecommunications, as alternative Internet access technologies exist and are being developed and constantly improved. In the UK, for example, the government's intervention which resulted in OFTEL obtaining the agreement of BT to price the usage of its telecommunications network for providing Internet service to schools at or near a price floor representing BT's approximate incremental cost<sup>389</sup>, followed a similar offer several months earlier by the Cable Television Association in which its members also agreed to provide free connections for all schools passed. The Cable industry was not well pleased, suggesting that OFTEL had entered an agreement with the incumbent which undermined the public relations program of the Cable industry<sup>390</sup>. In a number of Member States, ADSL will be available in the next couple of years from several competing companies.

One factor holding back the demand by residents for Internet access is likely to be a lack of information about what can be done with the Internet. In this regard the Internet is like most information goods: it is an experience good, which means that people tend to have to experience it before they can fully appreciate its value. Therefore, a significant number of people may be said to undervalue an Internet subscription and its essential compliments: a computer, a modem, and a telephone network subscription.

Does this in itself warrant a level of state involvement to provide public access? The Internet is already developing very rapidly with the numbers of subscribers growing extremely quickly. In 1998 the annual growth in Internet hosts was 52.3% for OECD countries. Indeed, firms selling information goods (as Internet services mainly are) have every incentive to find ways around consumers' lack of experience. Free trials and establishing a reputation amongst your targeted audience are typically used by firms selling information to get consumers to buy their service.

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<sup>389</sup> For this purpose OFTEL said special offers by BT to schools regarding network usage would not be in breach of non-discrimination regulations. OFTEL set incremental price floors, below which BT could not charge.

<sup>390</sup> The UK is in the process of implementing an extension of this scheme to include other public institutions. It has the reluctant agreement of fixed wire access providers in the UK. One representative told us they could hardly disagree, especially as OFTEL said it would be announcing the participants to the media.

A sound argument must be based on the idea that there is something special in a good or service which causes the majority of voters to agree that it should be made available to everyone through safety-net provision. The idea here tends to be that impoverished people are too concerned about meeting their basic needs to make the necessary medium or long term planning in regard to things like education and healthcare. Providing such services through tax funded safety-net provision provides some surety that these services will be available to everyone.



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## Chapter 4.4

### Summary

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This chapter started with a discussion of the consumer expectations in the market of fixed/mobile convergence. It sought to show that the majority of the customers in the telecommunications market would subscribe to a form a converged service, and consequently, the regulatory regime for such services need to be carefully measured. As shown, the regulatory regimes of the two different markets, fixed and mobile, are indeed different.

The fixed market focuses on the incumbent operators' activities, and tries to ensure that new operators that are entering that market can compete on both equal terms and on a fair basis. The mobile market, on the other hand, has always been more competitive and the regulation of the mobile market has not been as established as it is for the fixed market. The chapter also tried to show that the obligations put on the incumbent operator in the fixed market in particular, the universal service obligations, have no correspondent in the mobile market.

The chapter then discussed the substitution of fixed with mobile services and sought to show that such substitution is in fact taking place both at the service level and at the call level. As market convergence develops, the distinction between fixed and mobile services is not very clear. This situation, in turn, requires that the regulatory framework has to be consistently kept in the approach taken towards the two markets. If this is not case, there could be concern that the development of the converged is distorted.

Chapter 5 will focus on these issues and will try to identify the challenges that face competition law in its application to this converged market.

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**PART III**

**CHALLENGES TO THE APPLICATION OF  
COMPETITION LAW IN A CONVERGED  
ENVIRONMENT**

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**Chapter 5**

**Challenges to the Application of Competition Law in a  
Converged Fixed/Mobile Market**

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Chapter 4 of Part II described how the fixed and mobile communications markets have developed and how they are expected to converge in the coming years. Having established some of the business and technology trends, this chapter will consider the regulatory framework that is appropriate for converged fixed and mobile services. As described in Chapter 4, there are different regulatory regimes within the national regulatory authority (NRA) frameworks for fixed and mobile communications. In addition to the sector-specific regulation of telecommunications as a whole by the NRAs, the sector is subject to more general competition and consumer legislation.

This was illustrated by Analysis<sup>391</sup> in a study, and the figure shows the position of the fixed and mobile regulatory regimes on a regulatory range. It shows how regulation of these markets has been dominated by the NRAs. Even those issues that in other sectors would be dealt with by competition authorities, general consumer councils, or ombudsmen, are often handled by the NRA.

There are many historical reasons why regulation has evolved in this way<sup>392</sup>. However, most of these concerns are effectively addressed by creating a genuinely competitive market for services. Price, quality of service, contractual terms, and the cost of roaming are all issues which can be effectively addressed by laying down the proper incentives to develop a market where operators and service providers seek to meet the needs of consumers, with a view to winning their business. Furthermore, issues such as privacy and health risks can increasingly be addressed by general legislation regarding privacy and consumer protection (as well as the threat of legal action through the civil courts). Only a small number of issues, such as access to emergency services and possibly number portability and carrier pre-selection, would require sector-specific regulatory action<sup>393</sup>. As a consequence, the most appropriate regulatory framework for converged services has to be one in which there is a progressive

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<sup>391</sup> See: Squire, Sanders & Demsey, Study for EC DG Information Society . Brussels-Luxembourg, 2000. (98/48487).

<sup>392</sup> See for a good historical view: Naftel, J.M. The Natural Death of a Natural Monopoly: Competition in EC Telecommunications after the Telecommunications Terminals Judgement , European Competition Law Review 105. 1993; and S. Taylor, Article 90 and Telecommunications Monopolies , European Competition Law Review, 322. 1994.

<sup>393</sup> Universal service in a competitive environment was one of the most difficult areas in the whole process of liberalization. Especially the issues of service public in French law and in other Member States legal systems was difficult to bridge. On this subject see: Lyon-Caen, Les Services Publics et l'Europe: Quelle Union? . 1997.; and Special Edition of AJDA (L'actualité juridique - Droit Administratif) and L. Rapp L., Public service or universal service? , Telecommunications Policy 391. 1996.

transfer of regulation from specialist sector-specific regulators to more general competition law and consumer protection authorities.

This Chapter explores the options by which this might be achieved over time. There are a number of regulatory principles currently being developed at the Community level, in the context of the respective consultation processes for the 1999 Review<sup>394</sup> and the Convergence Green Paper<sup>395</sup>, which should guide the creation of a future regulatory model to facilitate the phenomenon of fixed/mobile convergence.

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<sup>394</sup> Towards a new framework for Electronic Communications Infrastructure and associated Services – The 1999 Communications Review . (COM 99/539 final). 10.11.1999).

<sup>395</sup> European Commission. Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation . (COM 97/623 final). 03.12.1997. In this Green Paper the Commission sees the convergence of the three sectors at the same time although the convergence of telecommunications and IT effectively began already in the 1980's. A good analysis of the convergence theory is presented in a study by: T.F. Baldwin, D.S. McVoy and C. Steinfeld, *Convergence: Integrating Media, Information and Communication* . Sage: London, 1996.

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**Chapter 5.1**

**Relevant Markets**

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In the transition from sector-specific regulation to the application of competition rules, there will be pressure to assimilate significant market power concepts into the traditional “market definition” analysis provided under competition rules. A future regulatory model should facilitate this process of assimilation. Some commentators and telecoms operators have voiced their concerns that “a hybrid regulatory approach to competition analysis is emerging, which is confused and confusing”<sup>396</sup>.

This criticism reflects the increasing tension between regulatory and competition law approaches to market definition and the assessment of market power in the telecoms sector. Currently, there are two legal standards at Community level in the telecoms sector which shape the approach taken by regulators towards potentially anti-competitive market behaviour:

◆ dominance

This is the legal standard used by ex post competition rules (Article 82 EC) to determine the boundaries between competitive and anti-competitive behaviour evidenced in particular forms of market conduct<sup>397</sup>.

◆ significant market power (SMP)

This is the legal standard used by the existing ex ante EU telecoms regulatory framework to justify the imposition of certain behavioural rules designed to ensure that competition in the provision of particular services remains vigorous<sup>398</sup>.

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<sup>396</sup> See: Dr. Cento Veljanovski, Lorna McGregor *Market Definitions in Telecoms: The Confusing Proliferation of Competitive Standards*. *C.T.L.R.* 25. 1999.

<sup>397</sup> Article 82 EC reads: Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in:

- directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
- limiting production, markets, or technical development to the prejudice of consumers;
- applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; and
- making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

The test of dominance is also used under the EC Merger Regulation: Regulation 4064/89 on the Control of Concentration between Undertakings, to address issues of market structure. According to Article 2 of that Regulation, a concentration which creates or strengthens a dominant position as a result of which effective competition would be significantly impeded in the common market or in a substantial part of it shall be declared incompatible with the common market.



Although a sector-specific approach to the identification of broad markets subject to the market power of the fixed incumbent operator may have been required during the early stages of liberalization, the current twin-track standards of dominance and SMP<sup>399</sup> should be assimilated into the traditional market definition analysis under EC competition rules. Relevant markets defined for regulatory purposes are currently distinct from those identified for competition law purposes<sup>400</sup>. This is because markets defined for the purposes of ex ante regulation have been based on particular forms of end-to-end communications rather than on individual economic markets defined under EC competition rules. Indeed, markets identified ex ante for regulatory purposes comprise many different products and services, across which the degree of effective competition may vary dramatically.

For example, the concept of SMP under the interconnection directive<sup>401</sup> is based on the premise that there exist four broad telecommunications markets:

- ◆ the market for fixed public telephony networks and/or services
- ◆ the market for public mobile telephony services and/or networks
- ◆ the market for the provision of leased lines
- ◆ the national market for interconnection<sup>402</sup>

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<sup>398</sup> The Interconnection Directive: European Parliament and European Council. Directive 97/33/EC 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 1997 L199/32); The ONP Framework Directive: European Council. Directive 90/387/EEC of 28 June 1990 on the Establishment of the internal market for telecommunications services through the implementation of open network provision. (OJ 1990 L192/1); The Leased Lines Directive: European Council. Directive 92/44/EEC of 5 June 1992 on the application of open network provision to leased lines. (OJ 1992 L165/27); European Parliament and European Council. Directive 95/62/EC of 13 December 1995 on the application of open network provision (ONP) to voice telephony. (OJ 1998 L321/6) – replaced by: The ONP Voice Telephony Directive. European Parliament and European Council. Directive 98/10/EC of 26 February 1998 on the Application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment. (OJ 1998 L101/24).

<sup>399</sup> In the United Kingdom, a three-track approach has been adopted: the Market Influence test is used through *ex ante* to restrict the ability of operators with influence on the market to distort competitive markets, through the inclusion of certain obligations in their license conditions (see OFTEL. Draft Guidelines on Market Influence Determination. April 1999).

<sup>400</sup> This is implicitly referred to in the Access Notice, which provides that one important factor to be taken into consideration is whether the market definition used for ONP purposes is appropriate for use in applying the competition rules. See, in particular The Access Notice: European Commission. Notice on the application of competition rules to access agreements in the telecommunications sector – framework, relevant markets and principles. (OJ 1998 C265/2).

<sup>401</sup> Directive 97/33 of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal services and interoperability through application of the principles of Open Network Provision (ONP). (OJ L 199/32). 1997.

<sup>402</sup> See Annex I and Article 7(2) of the Interconnection Directive.

This approach is relatively static, as it mandates specific forms of market behaviour (e.g., cost-orientation, non-discrimination, and so on) without taking into account the effects of convergence and rapidly changing markets. The access notice<sup>403</sup> states that “any attempt to define particular product markets in [the Notice] would run the risk of rapidly becoming inaccurate or irrelevant. The definition of particular product markets is best done in the light of a detailed examination of an individual case”. According to the Commission notice on market definition, “market definition is a tool to identify and define the boundaries of competition between firms” and the “competitive constraints that the undertakings involved face”<sup>404</sup>.

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<sup>403</sup> The 1998 Access Notice was first published in a draft form on 11 March 1997, with a call for comments. (OJ C 76/9). 1997. It is also well worth mentioning that the background study for the Access Notice was made excellently by: Coudert Brothers, Competition Aspects of Interconnection agreements in the Telecommunications sector. June 1995. They concluded against issuing guidelines or notices, and favoured the enactment of a specific regulation under Article 83 EC. This study is highly recommended.

<sup>404</sup> The Notice on Market Definition: European Commission. Notice on the definition of relevant market for the purpose of Community competition law. (OJ 1997 C372/5).

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**Chapter 5.1.1**

**Identifying Market Power**

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### Identifying Market Power in a Converged Environment

To the extent that mobile operators can provide services which are partial or actual substitutes for those provided over fixed networks, the key issue is whether one can identify market power in such a converged marketplace on the basis of existing case law and administrative practice. To the extent that no operator(s) can be identified as dominant in such an environment, it is arguable that market distortions arising from industry structure may not be capable of being resolved adequately through the application of competition rules alone.

#### Associated Markets Dominance

The close market proximity of the fixed and mobile sectors raises the question whether competition rules can be used to curb anti-competitive practices taken in a particular market or market segment, if market power exists in another market or market segment. In 1991, the Commission found that Tetra Pak<sup>405</sup> had abused its dominant position by engaging in a variety of anti-competitive practices, including predatory pricing. In so holding, the Commission identified two main product markets, one related to aseptic packaging and the other to non-aseptic packaging. On the aseptic packaging market, the Commission found that Tetra Pak held a dominant position, which was further reinforced by the existence of technological barriers and patents held by Tetra Pak, which hindered market entry. No similar finding was made regarding the non-aseptic packaging market<sup>406</sup>, although the Commission noted that Tetra Pak had “a market share which could be considered even on its own as demonstrating the existence of a dominant position”.

Nevertheless, the Court<sup>407</sup> held that Tetra Pak was “in a situation comparable to that of holding a dominant position on the markets in question as a whole”. The Commission’s rationale was based on the associative links between the two markets, which could be relied upon to condemn anti-competitive conduct on the non-aseptic market. The scope of

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<sup>405</sup> European Commission. Decision 92/163/EEC of 24 July 1991 relating to a proceeding pursuant to Article 86 of the EEC Treaty (IV/31043, Tetra Pak II). (OJ L 72/1). 1992.

<sup>406</sup> Although, as was noted by the Commission, Tetra Pak had a market share which could be considered even on its own as demonstrating the existence of a dominant position.

<sup>407</sup> Case T-83/91, *Tetra Pak International v. Commission* [1994] ECR I-755; on appeal, Case 333/94P, *Tetra Pak International SA v. Commission* [1996] ECR I-5951.

application of Article 82 EC could thereby be extended to reach conduct, which may occur over a number of associated or interrelated markets. In saying so, the Court modified its previous jurisprudence from the *Continental Can* case<sup>408</sup>, where it was held that there was no need to establish a causal link between the existence of dominance and its abuse. In particular, the Commission took the view that the association between the aseptic market and the non-aseptic market was significant because the key products, which the cartons are used to package, are the same on both the aseptic and non-aseptic markets, i.e., liquid milk products and fruit juices<sup>409</sup>. At the level of demand, the large majority of users of the products offered by Tetra Pak in the non-aseptic market are also active in the aseptic market.

The significance of the Court's analysis in the *Tetra Pak* case in the fixed/mobile context lies in the fact that neither the Court of First Instance nor the Court of Justice considered it necessary to demonstrate, for the purposes of Article 82, that: Tetra Pak's dominant position on the aseptic packaging market permitted, or at least facilitated, its predatory or foreclosing practices on the non-aseptic packaging market; or Tetra Pak's conduct in the non-aseptic packaging market was intended to strengthen Tetra Pak's dominant position on the aseptic packaging market<sup>410</sup>. This consideration may lead to the conclusion that Article 82 can be used to condemn anti-competitive practices implemented by an undertaking on a market on which it is not dominant, where extremely close links can be shown to exist between dominated and non-dominated markets. In such cases, it is implicit that the market power held in one market or market segment can be held to be leveraged into another market or market segment.

While the *Tetra Pak* case concerned closely related horizontal markets, the access notice points out that the analysis used in that case is equally applicable to closely related vertical markets<sup>411</sup>, which are commonplace in the telecoms sector<sup>412</sup>. The close associative

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<sup>408</sup> Case 6/72, *Entroemballage Corporation and Continental Can Co. Inc. v. Commission*. [1973] ECR 215 (*Continental Can Case*).

<sup>409</sup> Based on Tetra Pak's reply to the Statement of Objections, the Commission estimated that about 90% of Tetra Pak's sales involved liquid dairy products and fruit juices.

<sup>410</sup> Paragraph 104 of the Commission's Decision.

<sup>411</sup> The Access Notice: European Commission: Communication on the application of the competition rules to access agreements in the telecommunication sector-framework, relevant markets and principles. (OJ 1997 C76/9).

<sup>412</sup> For example, at paragraph 65, the Commission notes that it is often the case that a particular operator has an extremely strong position on infrastructure markets, and on markets downstream of that infrastructure.

links between the fixed and mobile markets suggest that the reasoning in Tetra Pak can be used to address the anti-competitive conduct of a dominant firm whose interests cut across both the fixed and mobile sectors, especially where clear dominance in the fixed sector results in the leveraging of that market power to provide converged or integrated service offerings. In a fixed/mobile integrated environment, an incumbent fixed operator engaging in predatory or market foreclosing practices will be particularly vulnerable to scrutiny under the Tetra Pak doctrine. The Tetra Pak doctrine may be of more limited application in a fully converged environment in which fixed and mobile networks and services form part of a single, unified product market.

### Double Dominance

Double dominance refers to the situation where an undertaking enjoys a dominant position on two separate product markets. The Commission and the European Court of Justice have dealt with the issue of double dominance through the development of three different, although related, doctrines, namely,

- ◆ the doctrine of automatic/necessary abuse
- ◆ the doctrine of illegal extension or strengthening of a dominant position
- ◆ the doctrine of equality of opportunity

The doctrine of automatic/necessary abuse has been developed by the Commission and the Court of Justice under Article 82 in conjunction with Article 86 (1)<sup>413</sup>, and concerns state measures contravening the competition rules. The doctrine has been relied upon to prohibit the grant of an exclusive right to an undertaking where the mere exercise of that exclusive right infringes Article 82, or where the grant of the exclusive right has placed the undertaking in a situation where it is of necessity induced to abuse its monopoly position<sup>414</sup>.

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<sup>413</sup> Former Article 90 (1). The current Article 86 (1) provides that in the case of public undertakings and undertakings to which Member States grant special or exclusive rights, Member States shall neither enact nor maintain into forces any measure contrary to the rules contained in this Treaty, in particular those rules provided for in Article 12 and Articles 81 to 89 .

<sup>414</sup> See, for instance: Case 41/90, *Höfner and Elser v. Macroton* [1991] ECR I-1979; Case 179/90, *Merci Convenzionali Porto di Genova v. Siderurgica Gabrieli* [1991] ECR I-5889; Case C323/93, *Société Civile Agricole du Centre d'Insémination de la Crespelle* [1994] ECR I-5077; Case 387/93, *Banchemo* [1995] ECR I-4663.

The doctrine of the illegal extension or strengthening of a dominant position has been relied upon by the Court of Justice and the Commission in Article 82 cases<sup>415</sup>, and in cases involving the application of Article 82 in conjunction with Article 86 (1). In the GB-INNO-BM<sup>416</sup> case, the Court of Justice held that a Member State may not grant an exclusive right to an undertaking, where such a grant would put the undertaking in a situation which it could not have attained by its own conduct without having infringed Article 82.

The doctrine of equality of opportunity, developed by the Court of Justice<sup>417</sup>, was used by the Commission in the GSM decisions<sup>418</sup>, which challenged measures of the Spanish and Italian governments requiring the payment of a fee from the second GSM licensee in their respective national territories, when the first licensee had not been required to pay a fee. The Commission considered that the measures in question placed an undue burden on the second entrants, and emphasized the need to ensure the equality of opportunity for all market actors, especially in a situation where the first licensee (the incumbent operator) already enjoys a number of advantages due to its dominant position in other markets.

The Commission has relied heavily on the doctrine of automatic abuse in its telecoms liberalization directives adopted under Article 86 (3). It was last relied upon in the second cable directive<sup>419</sup> as justification for the requirement imposed on Member States to ensure that telecoms networks and cable TV networks be operated by structurally separate legal entities. The Commission required, where Member States grant a telecoms operator that is already dominant on service markets using telecoms infrastructure, a special or an exclusive right to build and operate a cable TV network, that it not be placed in a situation where improvement to either network would generate a conflict of interests, because it may lead to

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<sup>415</sup> See Case 311/84, *Centre Belge d'études de marché – Télémarketing (CBEM)* [1985] ECR 3261 - where it was held that an undertaking abuses its dominant position in a particular market when it reserves to itself an ancillary activity which might be carried out by another undertaking as part of its activities on a neighbouring but separate market, with the possibility of eliminating all competition from such undertaking.

<sup>416</sup> Case 18/88, *Regie des Télégraphes et des Telephones v. GB-INNO-BM S.A* [1991] ECR 5941.

<sup>417</sup> See: Case 202/88, *France v. Commission* [1991] ECR I-1223 (*The Terminal Equipment Case*).

<sup>418</sup> European Commission. Decision 95/489/EC of 4 October 1995 concerning the conditions imposed on the second operator of GSM radiotelephony services in Italy. (OJ L 280/49). 1995; and European Commission. Decision 97/181/EC of 18 December 1996 concerning the conditions imposed on the second operator of GSM radiotelephony services in Spain. (OJ L 76/19). 1997.

<sup>419</sup> European Commission. Directive 1999/64/EC of 23 June 1999 amending Directive 90/388/EC in order to ensure that telecommunications networks and cable TV networks owned by a single operator are separate legal entities. (OJ 1999 L175/39).

a loss of business for one of the networks. An operator with such double dominance has an incentive to abuse its dominant position and delay the emergence of new advanced communications services, thereby restricting technical progress at the expense of users, contrary to the terms of Articles 82 and 86 (1). The Commission also considered that “different forms of anti-competitive behaviour are likely to occur unless sufficient transparency of the operations of the undertakings is ensured”<sup>420</sup>.

In taking the view that accounting separation has not proved to be sufficient to prevent all forms of anti-competitive behaviour, and that the dominant telecoms operator must be monitored so that it does not abuse its resources, the Commission recommended that the legal separation of operations occur as a “minimum requirement to ensure compliance with Article 86...during the crucial phase of the full opening of the sector to competition”<sup>421</sup>.

The developing doctrine of automatic abuse, and the principles set forth in the second cable TV directive, could be important in a fixed/mobile converged environment in two key respects:

- ◆ If one takes the view that Article 86 (1) continues to apply to dominant operators on a de facto basis, even after exclusive rights have been formally removed, since they “continue to enjoy rights to use radio frequencies which they have been historically granted otherwise than according to objective, proportional and non-discriminatory criteria” (i.e., special rights)<sup>422</sup>, the link between the special or exclusive right and the abuse is direct, with incumbent operators continuing to need to satisfy special obligations. In these situations, the Commission retains its ability to adopt Article 86 (3) decisions concerning incumbent operators.
- ◆ Operators with double dominance on both fixed and mobile markets may be encouraged to abuse their position because of a conflict of interest, in the same way as the Commission concluded operators would be in the markets for cable TV and fixed telecoms networks. The Commission has therefore also taken the view that, in the case of double dominance, operators are likely to adopt anti-competitive

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<sup>420</sup> Recital 11 of the Second Cable TV Directive.

<sup>421</sup> *Id.*

<sup>422</sup> Recital 7 of the Second Cable TV Directive.



behaviour, which justifies the Commission taking preventative measures (i.e., legal separation) to ensure that such abuses do not occur.

Because mobile operators do not enjoy special or exclusive rights within the meaning of that expression under Article 86 (1), it is arguable that the double dominance approach used in the context of incumbent fixed and cable TV networks, has less relevance in the context of fixed incumbent and mobile networks. Moreover, there appears to be less economic incentive, for operators in both the fixed and mobile sectors, to develop the arrangements that generate the types of conflicts of interest which exist currently, where fixed and cable TV operations are operated and controlled by a single operator. The range of structural ex ante competition law responses, designed to identify or make more transparent potential abusive practices in situations of double dominance, appears to provide regulators with an appropriate and proportionate regulatory tool to prevent abusive practices.

If goals such as structural separation and separate accounting are to be achieved through “soft law” such as recommendations or notices, operators with market power should be put on notice that – to the extent that such transparency measures are not adopted – the responsibility of proving that they have not infringed Article 82, where a *prima facie* infringement is alleged, will lie with them. In these circumstances, they would be obliged to deny any inference of abusive conduct arising from the lack of transparent market behaviour.

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**Chapter 5.1.2**

**Product Market under Competition Rules**

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All telecoms operators, operating in the market, are subject to three main sources of competitive constraint:

- ◆ demand substitutability
- ◆ supply substitutability
- ◆ potential competition

Under the jurisprudence of the European Court of Justice and the administrative practice of the Commission, the traditional view has been that demand substitution constitutes the most immediate and effective disciplinary force on suppliers of a given product or service. Indeed, the Commission has consistently defined a relevant product market solely in terms of “all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their price, and intended use”<sup>423</sup>. The Commission supplements these product characteristics/price/intended use criteria with an analysis of whether consumers of a particular product or service would be likely to switch to readily available substitutes in the short term and at a negligible cost, in response to a small (in the range of 5 to 10%) but permanent increase in the price of the products under consideration.

The Commission has historically given due weight to the competitive constraints arising from supply-side substitutability in only a limited range of circumstances. Potential competition is also considered to be generally of less immediate significance and, in any case, to require the analysis of additional factors. The Commission’s traditional demand-led approach should take greater account of the complexity of the telecoms sector, in particular, by according greater weight to supply-side considerations. The technological ability of virtually all market actors to provide a broad range of voice and data services will mean that, in many cases, market power may be only a transient phenomenon (or, in the alternative, theoretical market power may mask the fact that there exists little or no incentive to effect

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<sup>423</sup> See, for example: Case 27/76, *United Brands v. Commission* [1978] ECR 207.

abusive practices). This is particularly the case with innovation markets<sup>424</sup>, in respect of which competition law, because of the relative lack of historical data on patterns of supply and demand, is often ill equipped to deal. Although the Commission is under an obligation to consider the cross-elasticity of supply and demand, it assesses alleged barriers to entry on a much shorter timescale than would an economist. Under this type of analysis, entry barriers might be seen to be pervasive.

The determination of a relevant product market in the telecoms sector should increasingly take into account supply-side substitutability because technological developments allow operators to provide a very broad palette of services. The technology-push of services in the mobile industry, for example, has been relatively successful in generating demand-pull over time.

The timeframe within which relevant product markets are assessed might need to be longer term, as market snapshots in rapidly changing markets may give a false impression of actual market power. In the alternative, the concept of potential competition should be assessed more expansively.

In its 1995 Infrastructure Green Paper<sup>425</sup>, the Commission indicated that telecoms infrastructure consisted of telecoms transmission capacity, and that such capacity was available from at least three separate sources:

- ◆ fibre and copper cables
- ◆ radio links
- ◆ satellite links

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<sup>424</sup> The innovation markets approach pioneered in the United States is based on the promise that firms can compete in a separate market to make new products or to provide new services. Antitrust authorities are, on the basis of this approach, obliged to consider the effects of a transaction on future competition in terms of current commitments to R&D. In defining markets, the Commission also looks at competition and innovation in technology and R&D when it is felt to be appropriate, but less willing to do so than its counterparts in the United States, the Department of Justice, and the FTC. See: John Temple Lang, *European Community Antitrust Law: Innovations Markets and High Technology Industries*, *Fordham International Law Journal* Vol. 20, 3:March 1997. 717-818.; See also: Lawrence B. Landman, *Innovation Markets in Europe*, *E.C.L.R.* 21 1998. 21-31.; See also: Jean-Françoise Pons, *Innovation and Competition*, *EC Competition Policy Newsletter*, February 1998.

<sup>425</sup> The Infrastructure Green Paper: European Commission. Green Paper on the liberalization of telecoms infrastructure and cable television networks, Part II. (COM 94/682 final). 25.01.1995.; Part II of the Green Paper, together with Part I, formed the basis for the consultation on the liberalization of telecoms infrastructure and are considered essential elements of the overall 1998 telecoms liberalization package.

The underlying technology of these transmission platforms determines to a significant degree whether these platforms can be viewed as true substitutes, which thereby determines whether they fall within the same relevant product market.

In determining the scope of fixed infrastructure markets, there is also scope for distinguishing between networks based on the entities to which access to the network is provided. In this regard, it is commonplace to distinguish between the provisions of infrastructure at the wholesale level (operator-to-operator), and at the retail level (access to infrastructure offered to end users). For example, demand for the lease of transmission capacity and the provision of related services to third party service providers (i.e., carriers' carrier services) occurs at the wholesale level of the market<sup>426</sup>, while demand on the part of subscribers for connection to the local loop is at the retail level.

Given the potential scope for growth in the demand for local loop access brought about, *inter alia*, by the growth of fixed/mobile integrated service packages, the emerging differences in the characteristics of local loop access are likely to play an important role in the level of service integration which will take place. A number of trends have been identified that are likely to have a significant impact on the scope of local loop access in the immediate to near future:

- ◆ the introduction of broadband platforms in the local loop as operators rollout xDSL technologies, digital cable, broadband wireless, and other digital transmission systems
- ◆ the deployment of these alternatives raising the issue whether the data transfer capabilities of the mobile sector can eventually reach a level comparable to that achieved by fixed networks
- ◆ the explosive growth in the demand for data services, coupled with the steady decrease in voice telephony prices towards cost
- ◆ the downward spiral in the price of voice service, largely offset by the increased demand, which has generated large volumes of data traffic. By the same token, the surge in databased traffic, particularly driven by increased Internet usage, has meant

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<sup>426</sup> See, for example: Case No. IV/M.683, *GTS-Hermes Inc./HIT Rail BV* (OJ 1996 C157/13); Case No. IV/M.1069, *WorldCom/MCI* (OJ 1999 L116/1); Case No. IV/35.830, *Unisource* (OJ 1997 L318/1); Case No IV/35.617, *Phoenix/Global One* (OJ 1996 L239/57); and Case No. IV/JV.2, *Enel/FT/DT*. (OJ 1999 C178/15).

that the pricing of local access for both voice and data applications is perceived in the industry as being of equal importance.

◆ the increased level of substitutability between fixed and mobile services:

- Mobile penetration rates equal or surpass those of the fixed sector.

Historically, mobile services have been considered a complement to fixed services, with each product competing for a different pool of customer minutes of use. As mobile penetration rates increase across the EU, however, many believe that mobile and fixed technologies are increasingly competing for a single pool of minutes of use. Mobile penetration across the EU stood at approximately 26% as of 1 January 1999, with mobile penetration in several Member States soon expected to exceed that of the fixed sector. As reported by the Finnish Ministry of Transport & Communications in September 1999, the penetration rate for mobile telecoms in Finland is the highest in the world, now exceeding 70% of the population, with the result that mobile customers now exceed the number of fixed customers in that country. The issue of substitutability not only affects the definition of product markets at the retail level, but also raises the question whether the incumbent fixed operator should be considered to continue to enjoy a privileged position, given the mobile options available to consumers<sup>427</sup>.

- Mobile operators introduce pricing plans that encourage subscribers to use mobile phones as substitutes for their fixed phones or which encourage subscribers to treat their communications needs as bundles of products.

To date, these pricing plans have taken two forms. Firstly, most EU operators have introduced pricing plans with large bundles of minutes or even unlimited usage, specifically designed to encourage substitution for fixed usage. For example, Libertel of The Netherlands offers a subscription, "OnePlus", that offers subscribers a flat rate tariff formula throughout the day, while it is possible to bundle a fixed amount of airtime with each

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<sup>427</sup> See the approach in the United States, for example in the Third Annual CMRS Competition Report, FCC 98/91. June 1998.

subscription of Belgacom Mobile, the largest mobile operator in Belgium. Secondly, some operators offer their subscribers technologies and pricing plans that encourage use of their mobile phones while they are at home or near home. For example, Denmark's Sonofon launched a service called "Home-zone" in 1997. The scheme offers mobile tariffs close to fixed network tariffs for phone usage in a small, geographically defined local calling area, i.e., the home-zone, and conventional cellular tariffs outside the home-zone. To the extent that such bundled packages need to be offered by non-affiliated mobile operators over unbundled local loops, competition occurs among competitors in obtaining unbundled local loop access. Unless alternative forms of access are available as between competitors (e.g., bitstream access for competitor X providing Internet access, and fully unbundled twisted copper pairs for competitor Y providing broadband services), the number of alternative operators that the local loop can sustain will always be limited<sup>428</sup>. Moreover, the cost and conditions of different forms of local access might differ.

- ◆ on a more general level, the continuing blurring of the traditional barriers between the worlds of telecoms, broadcasting, and information technology

The introduction of digitalization is bringing an increasing range of market actors into upstream relationships with local access providers. In this changing environment, operators are relating to one another in a manner which increasingly resembles the media world, rather than the telecoms world.

In contrast to local access, numerous market actors provide backbone infrastructure on either a national, regional, pan-European, or global basis. In this regard, the Commission has identified a market for the provision of terrestrial transmission capacity, which is generally intended for use by third parties, such as other fixed and/or mobile telecoms organizations,

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<sup>428</sup> In other words, consumers make an all or nothing decision to replace one operator with another for their full range of telecoms requirements (contra the position of using an incumbent fixed operator for local and long distance calls, while using an alternative operator on the basis of carrier selection to provide international service). For a discussion on the Competition issues in the last mile, see: S. Parker, *Competition in the last mile remains illusive*, [FT Telecoms](#). 16 July 2001.

resellers, and ISPs<sup>429</sup>. Throughout the EU, this market is highly competitive, being characterized by a significant number of operators<sup>430</sup>.

In a number of signatory states (e.g., Belgium, Sweden, the United Kingdom, The Netherlands, and Switzerland), the recent consultation processes reviewing fixed wireless spectrum allocation (both WLL and MWS) have highlighted the significance of bandwidth. Allocations of 112 MHz, or at least a willingness by the regulator to allow the accumulation of smaller allocations, will facilitate the development of viable wireless fixed networks capable of delivering broadband multimedia services. Such networks will provide new alternative delivery platforms, which can be rapidly deployed to circumvent the control over access to customers exerted by incumbent cable and narrow-to-medium bandwidth wireline operators.

Related issues in relation to the pricing of spectrum for MWS and WLL are developing. For example, the pricing formulas proposed in a number of Member States that are considering allowing the accumulation of WLL frequencies are such that it will be economically unsustainable for operators to attempt to acquire multiple licenses. While the spectrum pricing mechanisms currently being proposed (and the auction mechanisms favoured in a number of other countries) reflect attempts to introduce market-driven pricing mechanisms, they also highlight the difficulty of identifying the market in such circumstances. To date, the spectrum bandwidth debates have centred on access to, and use of, fixed spectrum. However, as more Member States turn to consider the issues of UMTS spectrum allocation, many of the issues will be revisited, in both a mobile and a converged context. If anything, the range of services that could potentially be provided over third generation mobile platforms is greater than that contemplated by the MWS concept. The UMTS licensing structure currently favoured in the Member States will see the introduction of a three tiered system, in which there will be a class of pure service provider licensees who will not install or operate networks nor, consequently, will they be allocated spectrum.

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<sup>429</sup> See most recently, for example: European Commission. Notice pursuant to Article 19(3) of Council Regulation No. 17 concerning Case No. IV/37.130 – *Farland Network*. (OJ 1999 C77/2); European Commission. Notice pursuant to Article 19(3) of Council Regulation No. 17 concerning Case No. IV/37.182 – *Esat/Coras Iompair Eireann (CIE)*. (OJ 1999 C181/19).

<sup>430</sup> See, for example: Commission approves formation of pan-European telecommunication networks by British Telecom and its European partners. (IP/99/404). 18 June 1999; and European Commission. Decision, 99/574/EC of 27 July 1999, relating to a proceeding under Article 81 of the EC and Article 53 of the EEA Agreement (Case IV/36.581 – *Télécom Développement*). (OJ 1999 L218/24).



These licensees will develop their businesses on the strength and range of available services. Accordingly, it can be anticipated that there will be early development of innovative and disparate services as these service providers seek to create new markets. The issue of spectrum pricing and the most appropriate means for the market to value spectrum is generating heated debate in the Member States. There are real concerns that auctions leading to artificially high prices will starve third generation mobile network operators of funds better spent on what will be extremely expensive network roll-out costs, or that network access and call charges will be so high as to retard third generation mobile from becoming a mass market platform for years.

Of course, new fixed/mobile packages, which introduce home-zone concepts (e.g., as recently introduced by the third mobile operator in Spain, Amena), draw a distinction between local calls and long distance/international calls. However, these commercial practices reflect little more than a particular tariffing policy, and it is thus improbable that a mobile network will be capable of being segmented in the same way as a fixed network (i.e., between the local and backbone segments). Accordingly, the calculation of the costs of access to a mobile network will also be likely to be fundamentally higher than those experienced for the fixed sector.

One should, however, be aware of several recent access related requests in the mobile sector, which might result in a re-assessment of whether access to mobile infrastructure is viable in the future. These events include:

- ◆ the existence of “mobile wash” practices, whereby a third or fourth entrant in a given national mobile market seeks to obtain indirect national roaming rights by taking advantage of the international roaming rights of a third party
- ◆ the emergence of fixed/mobile converged services, which require access not only at the terminal level (e.g., SIM cards), but also at the network level (e.g., intelligent network platforms, WAP servers, etc.)
- ◆ the preliminary view of the Commission that there is a market for “national roaming rights”<sup>431</sup>

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<sup>431</sup> See: Case No. IV/37.500, *Viag/T-Mobil*. (OJ 1999 C144/9). This may lead to the conclusion that this form of access constitutes a relevant market and/or forms part of a broader market for mobile carriers' carrier services.

- ◆ the emergence of so-called virtual network operators (VNOs) in the Nordic countries, Italy, and Germany
- ◆ the emergence of Universal Mobile Telecommunications System (UMTS)<sup>432</sup>

The combined effect of these developments will determine in part whether a market or markets are developing in relation to access to mobile infrastructure and the conditions upon which such access is available.

Where the physical connection is made using the PSTN, the ISP must be interconnected with the local access provider. For these purposes, an ISP might be treated either as a business customer of the relevant local access provider, which will be the incumbent operator in the majority of cases, or as another telecoms operator. If treated as a business customer, the ISP will be required to pay line rental charges. However, the relationship is significantly different if the ISP is categorized as being another telecoms operator. In this case, the ISP is considered to be a terminating operator and can therefore benefit from originating charges paid by the incumbent operator. As indicated above, however, the ISP can circumvent the PSTN by running a leased line directly to its customer where this is a financially viable alternative.

Where the end user is a subscriber to a mobile telecoms network, the ISP will require access via the subscriber's network. Unlike fixed access, however, mobile access is not segmented into local access and other means of access.

As regards fixed local access, it is important to note that, except in limited circumstances, it is currently provided via a conventional local loop, as in the case of a normal voice call.

Accordingly, the Commission currently considers that a relevant market exists for the provision of Internet access services<sup>433</sup>.

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<sup>432</sup> European Parliament and European Council. Decision No. 128/1999/EC of the 14 December 1998 on the coordinated introduction of a third-generation mobile and wireless system (UMTS) in the Community. Finland became the first EU Member State to award four national UMTS licenses to: (i) Sonera; (ii) Radiolinja, the mobile unit of the second operator, Helsingin Puhelin Oyj; (iii) Telia Mobile of Sweden; and (iv) Suomen Kolmegee, a consortium of regional operators in which Sweden's Tele2 has a 20% shareholding.

<sup>433</sup> See, for example: European Commission. Decision of 8 July 1998, *WorldCom/MCI*. Case IV/VL. 1069. (OJ 1999 L116/1).; and European Commission. Decision of 4 August 1998, *Cégétel/Canal+/America Online/Bertelsmann*. Case IV/JV.5.

Other features may also be supplied as part of the basic access package, such as search engines, gateway, or content services (including games, special news services, etc.). However, according to existing Commission administrative practice, each of these additional enhanced services might comprise a discrete product market<sup>434</sup>.

The differences which currently exist between the fixed and mobile sectors, are likely to continue to exist in the short to medium term, and be reflected in terms of:

- ◆ the price premium, which continues to apply to mobile communications
- ◆ the likely migration of voice services to the mobile sector, whereas heavy content and data transfers will be drawn primarily to the fixed sector
- ◆ the lack of full substitution between fixed and mobile services

In light of these factors, it is not clear whether fixed and mobile services will ever constitute anything more than partial substitutes in the short term to medium term.

There is likely to be strong supply-push matched by strong demand-pull that migrates voice services to mobile networks. By the same token, the growth of Internet-related communications probably means that fixed networks will play the key role in the transmission of high bandwidth and broadband communications. Third generation mobile systems provide great opportunities, but are also matched by great commercial uncertainties. From the supply side, there will be an ever-increasing blurring of the distinction between voice and data, so that the two elements will be seen to constitute part of the same market.

Distance will quickly cease to become a defining characteristic of product markets. The regulation of competitive conditions and the withdrawal of regulatory distortions will, over time, mean that distance is increasingly perceived as a relevant element of tariffing policy, rather than as a defining element for relevant product markets.

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<sup>434</sup> Each of these may constitute a separate market such as markets for: (i) the provision of paid subscriber content over the Internet; (ii) the provision of advertising over the Internet; and (iii) Website production and related services. This level of differentiation is said to occur because these activities are frequently carried out by separate undertakings and require substantially different inputs.

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Chapter 5.1.3

**Geographic Market under Competition Rules**

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Case law defines a relevant geographic market as “the area in which the undertakings concerned are involved in the supply and demand of relevant products or services, in which the conditions of competition is sufficiently homogeneous and which can be distinguished from neighbouring geographic areas because, in particular, conditions of competition are appreciably different in those areas”<sup>435</sup>. It is the accepted practice of the Commission to determine that the scope of a geographic market in the telecoms sector refers to:

- ◆ the extent and coverage of a network and the customers that can economically be reached and whose demands may be met
- ◆ the legal and regulatory framework underpinning the right to provide service ( i.e., licensing requirements)

Having regard to the licensing and regulatory framework governing the provision of domestic and international voice and data services on fixed networks in most Member States, the relevant geographic market for these services is likely to be national. However, the demand for customized packages of corporate telecoms services exists in at least these distinct geographic markets: at global, cross-border regional, and national levels<sup>436</sup>.

As regards carriers’ carrier services, the Commission has decided that, by their very nature, carrier services can be provided at least on a national, cross-border regional, and pan-European basis<sup>437</sup>. Country pairs are also seen to be relevant indicators of geographic markets for certain types of long distance operators, with country pairs often providing a strong guide to analysts regarding market power with respect to capacity-sensitive wholesale traffic (e.g., including Internet capacity).

Unlike the fixed sector, the geographic scope of the mobile retail services market is more difficult to assess, essentially because of the existence of services such as international roaming and the ability of subscribers to take out foreign subscriptions. Early Commission decisions concerning the mobile sector considered that there was an increasing trend towards a European market for GSM service provision. The technical compatibility of foreign GSM

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<sup>435</sup> Section 6 of the Form CO relating to the notification of a concentration pursuant to Regulation (EEC) 4064/89, as well as Section 6 of Form A/B under Regulation 17.

<sup>436</sup> See, for example: European Commission. Decision of 20 May 1999. Case IV/36. 592. (OJ 1999 L218/14)., *Cégétel + 4*

<sup>437</sup> See, for example: European Commission. Notice pursuant to Article 19(3) of Council Regulation . 17 concerning Case IV/37. 130. (OJ 1998 C233/17); and European Commission. Decision of 27 July 1999, . (*Farland Network*) Case IV/36. 581. (OJ 1999 L 218/24). *Telecoms Development*

networks, the presence of international roaming agreements, the establishment of independent service providers, which resell airtime on a pan-European basis, and the pattern of cross-shareholdings amongst parent companies and investors influenced the Commission's views in this regard<sup>438</sup>.

A further issue is whether the geographic market for mobile services could be greater than national, but smaller than totally European in scope (i.e., regional). The evolution of such a market is unlikely to take place as long as current roaming charges do not make subscriptions outside a user's home territory attractive. Indeed, the identification of regional markets seems to be a highly artificial exercise in the mobile context. The physical location where a customer roams on any given occasion can be highly arbitrary, and may vary depending on the age, lifestyle habits, and socio-economic status of a customer at any given point in life. The mere fact that a party crosses a border to consume a mobile service should not determine the scope of the relevant geographic market. Rather, the issue should be assessed in terms of whether there are any pricing pressures or constraints raised by competitors in different territories which influence a consumer's choice of operator in the relevant geographic territory. (Refer to the supply-side analysis above, which reinforces the conclusion that the relevant geographic market should be national.) Therefore, for the immediate future, the only geographic market in which there are likely to be competitive pressures on prices is national.

In assessing the scope of the relevant geographic market, the Commission may consider whether the subscribers of a mobile network in a given Member State would be likely to switch their subscriptions to mobile operators located in other, especially neighbouring, Member States in the short term and at a negligible cost in response to a hypothetical small (in the range of 5% to 10%), but permanent relative price increase in the tariffs charged by the subscribers' existing mobile operator and its competitors.

The number of subscribers who might be willing to switch their subscriptions to a mobile operator of a neighbouring Member State would be negligible. However, the number of subscribers who would switch their subscriptions to a competing national mobile operator in response to a price increase in the tariffs of their existing provider is very high. The very high levels of churn that currently occur in each national market illustrate this fact.

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<sup>438</sup> European Commission. Decision of 27 March 1995 . Case IV M.538.(OJ 1995 C96/3), (*Omnitel*)

Trans-border merger activity, however, may change the assumptions in this regard. The merger of mobile operators covering contiguous geographic territories may result in the creation of regional geographic markets. This could be achieved, for example, by the internalization of costs between affiliated operators, thereby overcoming the need to pay international roaming charges altogether. Such a trend would have the possibility of leading to regional rather than national tariff schemes, which might prove to be very attractive for certain types of consumers, especially business users.

The existence of international roaming capabilities for digital mobile services raises the issue whether the relevant geographic market could soon be pan-European<sup>439</sup>. Although the relevant services are capable of being consumed internationally, the competitive pressures on mobile pricing, servicing, and handset prices continue to be strictly national in their effects. Mobile operators under homogeneous conditions throughout the EU cannot, therefore, provide services. Moreover, there is little pricing pressure exerted on the tariffs of operators from one Member State by operators from another Member State.

Clearly, the mere provision of international telecoms services does not enlarge the scope of the relevant geographic market from one which is fundamentally national to one which is pan-European. The competitive relationship between mobile operators is solely vertical in relation to the provision of roaming. Under a roaming relationship, a mobile operator of a visited Member State simply acts as the agent of a mobile operator from another Member State whose customer is visiting or transiting the former Member State. The customer in question remains at all times the customer of the home network. Mobile services can, therefore, be multi-country in nature without influencing the scope of overall geographic market definition.

For the reasons expressed above, however, the merger of mobile operators may establish the sorts of synergies able to attract consumers on a pan-European basis, at least in the business segment of the market. Where the same parent does not control mobile operators, the creation of a pan-European market would envisage that operators engage in “preferred roaming” relationships. Subject to receiving clearance by the Competition

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<sup>439</sup> In any event, given the ubiquity of GSM technology, there appears to be no reason why a pan-European geographic market should be limited to the EU Member States and Norway. At the very least, all Central and Eastern European countries should be included in any such geographic market definition.

Directorate under its powers of exemption contained in Article 81 (3), preferred roaming relationships could be the basis upon which pan-European markets are created in the future.

In the recent *Deutsche Telekom/One2One* Decision, the Commission noted that the market for mobile communication services is primarily determined by the extent and coverage of the network (and the customers that can economically be reached and whose demands may be met) and by the prevailing legal and regulatory system. However, after referring to the decisions in Cases IV/JV.4 (*Orange/Viag*) and M.1430 (*Vodafone/Airtouch*), in which the geographic market in the mobile sector was held to be national, the Commission expressly left the definition of the scope of the geographic market open (since a dominant position would have been neither created nor reinforced by the transaction on any relevant market definition).

In considering the effects of the transactions in the United Kingdom in the *Deutsche Telekom/One2One* Decision, the Commission did not expressly define the scope of the geographic market. In considering the effects on the German market, the Commission referred to the possibility that the relevant market could be the German market for mobile telephony services or a Europe-wide market. In passing references, it also appears that the Commission contemplated that there may be a market for the provision of services “between Germany and the United Kingdom”. In considering whether the German market for mobile telephony services was the relevant market, the Commission took the view that the presence of both parties in the relevant national market, while at the same time simultaneously offering pan-European services, would mean that it was unlikely that the market was national.

The internationalization of communications services for business customers means that traditional national licensing for the provision of services is becoming increasingly irrelevant. As the penetration of mobile communications increases, this trend will continue, as large businesses increasingly view their communications needs on a pan-European basis. Seen in this context, traditional SMP calculations based solely on national licensing regimes are becoming obsolete.

Despite the phenomenon of mobility, mobile markets continue to remain stubbornly national in character. Real competition between operators for mass-market customers occurs at the national level. Similarly, mass-market customers see their needs as being fundamentally national in scope, while providing them with the facility of national roaming (during which time they continue to remain the customer of the home operator).



Aside from local offerings of fixed/mobile integrated packages, the greatest growth of such packages is likely to be seen amongst multinational companies whose needs encompass both fixed and mobile delivery mechanisms. This phenomenon is likely to have an expansive effect on the scope of the geographic markets for the latter type of customer, particularly as regarding virtual private networks (VPNs). The Commission envisaged the possibility of the existence of country pair mobile markets in Deutsche Telekom/One2One. It cannot envisage, at least at this stage in the development of the mobile market, how mobile customers or operators would be envisaged so that mobile markets could be broken down in terms of country pairs.

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**Chapter 5.1.4**

**Dominance and Oligopolistic Markets**

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Having tried to identify a range of potential product and geographic markets which span the fixed/mobile divide, and which may be relevant in a converged environment, another critical task must be undertaken, namely, the identification of those market actors who, by reason of their impact on the market, are legitimate objects of regulation.

Currently, there are two legal standards in use at Community level: firstly, the test of dominance which allows competition authorities to have anti-competitive behaviour ex post; and secondly, the test of SMP which allows NRAs to intervene ex ante against a potentially much broader range of market actors in order to ensure a level of legal certainty in the commercial relations of market actors in the telecoms sector. This dual approach is followed throughout the Member States, with the exception of the United Kingdom, where an intermediate category of actors with market influence are subject to an additional layer of regulation under their license terms. Each of these regulatory categories is described below.

Dominance is defined for EC competition law purposes as a “position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market affording it the power to behave to an appreciable extent independently of its competitors, customers, and ultimately consumers<sup>440</sup>. Dominance is measured in terms of both its product and geographic dimensions. The primary indicator of dominance is market share, although this factor alone is not conclusive in the absence of other indicators of dominance. The European Court of Justice has effectively held that a reputable presumption exists that an entity is dominant in a relevant market if it holds over 50% market share<sup>441</sup>. Undertakings with market shares over 40% may be considered to be dominant in appropriate circumstances<sup>442</sup>.

The amended leased lines directive, the ONP voice telephony directive, and the interconnection directive require Member States to identify organizations that have SMP for

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<sup>440</sup> Case 27/76, *United Brands v. Commission* [1978] ECR 207.

<sup>441</sup> Case 62/86, *Akzo Chemicals BV v. Commission* [1991] ECR I-3359. It should be noted that this Case explicitly refers to a market share being persistently over 50%. There is thus a need to examine changes in the pattern of market shares over time, rather than examining a simple snap-shot market share at any given point in time. This is especially true as the post-liberalization marketplace matures, where the first mover developing a technologically new market product or service may hold a temporary market share of 100%. For example, such a situation may arise in relation to the emergence of fixed/mobile-integrated services.

<sup>442</sup> In *United Brands*, Case 27/76, *United Brands v. Commission* [1978] ECR 207, a market share ranging from 40% to 45% was, of itself, not held to warrant a finding of dominance; however, a combination of other factors indicated that the undertaking in question was dominant in the circumstances.

the purposes of the regulatory obligations imposed by those directives. An organization is presumed to have SMP when it has a share of more than 25% of a particular telecoms market in the geographic area within which it is authorized to operate. NRAs may, nevertheless, determine that an organization with a market share of less than 25% in a relevant market has SMP. They may also determine that an organization with a market share in excess of more than 25% in a relevant market does not have SMP. In either case, the SMP determination, in addition to market share calculation, is to take into account:

- ◆ the organization's ability to influence market conditions
- ◆ its turnover relative to the size of the market
- ◆ its access to financial resources
- ◆ its experience and expertise in providing products and services in the market

In addition, the interconnection directive adds another two conditions:

- ◆ its control of the means of access to end users
- ◆ its international links

The determination of SMP by an NRA involves several stages, including the identification of the relevant market. The definitions of these relevant markets are set out in the various ONP directives. For example, the revised ONP voice telephony directive prescribes relevant markets for the provision of fixed public telephone networks and/or the provision of fixed telephony services. Although NRAs have no discretion in defining the scope of the relevant market(s) under ONP rules<sup>443</sup>, they have considerable discretion in determining the criteria to be used in measuring the market shares of the various actors in those markets, and in deviating from the 25% market share SMP presumption (where such a determination can be objectively justified). The discretion exercised by the NRAs in determining SMP has led to a patchwork of regulatory standards in the EU; this has unintentionally resulted in a greater degree of regulatory uncertainty for actual and potential market entrants.

For example, the situation has arisen where a second mobile operator such as Esat Digifone in Ireland has been held not to have SMP with a market share of between 24 and 25%, whereas Omnitel, the second mobile operator in Italy, has been determined to have

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<sup>443</sup> NRAs, however, have considerable discretion in determining the products and services that make up the markets identified in the Interconnection Directive.

SMP in the national market for interconnection with as little as an 18% market share. These discrepancies are exacerbated when one considers that SMP triggers certain types of obligations in some Member States, but not others. Indeed, the NRA's discretion to select the appropriate market measurement criteria becomes more critical as market shares approach the 25% threshold. There are attempts being made at Community level to harmonize the approaches taken by NRAs in measuring SMP<sup>444</sup>. Specifically, the Commission has referred Member States to the market definition notice for purposes of calculating market sizes and market shares even for ONP purposes. The notice provides that the calculation of market share can be undertaken with reference to both value and volume data. Despite the apparent existence of a harmonized set of market measurement criteria, several difficulties remain in relation to the use of such criteria. These difficulties include:

- ◆ confusion over the choice of market measurement criteria based on value or volume
- There is significant confusion between Member States in the implementation of alternative market measurement criteria. For example, it is possible to calculate market shares based on volume in a variety of ways:
- called minutes for switched traffic
  - network size or capacity
  - speed
  - network configuration (e.g., access points, nodes)
  - traffic flows
  - number of subscribers

This leads to the fragmented application of competitive standards, which remain identical only in name. Greater consistency in approach is required, as the provision of telecoms services solely within national boundaries is becoming increasingly obsolete. This is not to suggest the use of one market measurement criterion over another. On the contrary, it recognizes that several measurement criteria may be applicable in various instances and that the NRA is entitled to have the discretion to strike the right balance between them. For example, many established firms will

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<sup>444</sup> See, in particular: DG XIII. Determination of Organizations with Significant Market Power (SMP) for implementation of the ONP Directives . 1 March 1999.  
<http://www.ispo.cec.be/infosoc/telecompolicy/en/communication-en.htm#misc>

capture a higher share of a market by value rather than by volume, as they are likely to seek and retain high value customers while losing low value customers to newer entrants. However, current SMP tests are subject to a number of criticisms:

- a lack of clarity on what products and services are to be included in the calculation

This is especially the case for markets designated for SMP purposes, as they are sectoral in nature and therefore comprise many different products and services. For example, the market for public mobile telephony services and/or networks may include such services as: the rental of mobile phones; the conveyance of outgoing calls; the connection to mobile phones; handset sales; disconnect charges; and national and international roaming services. The introduction of fixed/mobile integrated products will only lead to further confusion in this regard, as such services may fall across the fixed/mobile divide.

- a lack of clarity on the geographic allocation of value/volume data

It is well recognized that the telecoms sector poses its own specific difficulties with regard to the geographic allocation of turnover. This is due in part to the differences in application worldwide of the “called party pays” and “calling party pays” principles and the arbitrariness of attributing geographic revenues based on the international settlements regime. One of the most recent deliberations by an NRA under the SMP rules involved Italy, where the NRA decided on 7 September 1999 that three operators were to be considered to have SMP. The second mobile operator, Omnitel, was deemed to have SMP in the national market for interconnection, with as little as 18% market share. On 7 September 1999, the Italian NRA, the Communications Authority, adopted a Decision (No. 197/99) concerning the identification of SMP operators in Italy<sup>445</sup>.

◆ regulatory framework

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<sup>445</sup> Decision 197/99 of 7 September 1999. Published in the Official Gazette of the Italian Republic (GU RI).

The Communications Authority assesses the position of SMP annually, after hearing the opinion of the Competition Authority. By Decision 97/99, the Communications Authority has revised the number of SMP operators notified for the first time since April 1998. Article 1. 1. of Presidential Decree D.P.R. 318/97 presumes a position of SMP when an operator holds more than 25% of a market. However, this presumption can be modified on the basis of a set of criteria defined under the same article. These criteria, together with their interpretation by the Communications Authority in Decision 197/99, are detailed below.

- ◆ The parties' market share in respect of the products or services.

These markets, as defined by both the Interconnection Directive and D.P.R. 318/97, are:

- the market for fixed networks and services
- the market for leased lines
- the market for mobile networks and services
- the market for interconnection

According to Decision 197/99, the current level of competition in Italy does not permit a further partition of these markets (e.g., a distinction between the market for analogue and digital mobile services). In order to calculate market shares, the decision was based on the revenues generated in each market. With respect to the market for interconnection, the authority considered only the market for termination both on fixed and on mobile numbers. It is worthwhile noting that, given the growing importance of termination on mobile networks, this was considered by the authority as a particular bottleneck facility.

- ◆ the relevant geographic market.

According to Decision 197/99, the current level of competition in Italy does not justify a distinction of different geographic markets within the national territory. Therefore, all markets mentioned have been considered to be national in scope.

- ◆ other structural characteristics, such as:

- the parties' ability to influence market conditions. In the Decision, the Authority considered the following parameters as falling within the scope of this category: the number of competitors in the market; the existence of

barriers to market entry; the existence of barriers for consumers to migrate to different providers; and the level of vertical integration.

- their turnover in relation to the overall and absolute value of the market
- the control of the means of access to final users. In the decision, the authority considered that the following parameters must be taken into account: the number of subscribers; access to scarce resources (such as frequencies); and the level of commercial activity on the geographic territory.



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## Chapter 5.2

### Summary

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Chapter 5 sought to develop further the discussion in Chapter 4, which described how fixed and mobile communications have developed over the years and how they are expected to develop over the coming years. It considered more specifically the framework for converged fixed and mobile services, with special emphasis on the different markets. The complexity of the sector was noted, as well as the desire by the consumer protection authorities to let specialist regulators handle the problems.

The chapter also considered the possibility of allying competition rules in this area by discussing the level of a competition in the market for services. The desirability of a market where operators and providers were given encouragement to meet the needs of the consumer trying to win their business was also considered.

(What could perhaps have received more attention in the chapter is the issue of privacy, but the view has been taken that that issue could be addressed by general legislation through the civil courts.)

In the next chapter the transfer from sector-specific regulation to general competition rules will be addressed. Sector specific regulation should only apply, it is argued, in one area, namely, emergency services. Number portability and carrier pre-selection may not be a problem since both of these were regulatory tools to open a monopoly environment in the fixed sector. In reality, that issue is likely to be resolved by cost/benefit analysis by either the consumer or the operator.

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**Chapter 6**

**The Application of Market Access in a Converged  
Environment**

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This chapter discusses the key issue in a fixed/mobile converged environment. It is in the context of this issue that policy choices and trade-offs between consumer choice and a competitive market become most controversial. The controversy focuses primarily on whether compliance with the principle of technology neutrality requires the migration of the existing access regime for fixed networks into the mobile sector, or the adaptation of the former to resemble the latter in the event of greater competition for call origination in the fixed sector. In this regard, the Scandinavian experience of growth of the mobile market overtaking that of the fixed market is important. In determining whether the interconnection directive should be extended to mobile operators, it is absolutely essential that consideration be given to whether likely market developments will require a limitation, rather than an expansion, of the scope of the directive.

A discussion of interconnection per se is beyond the scope of the terms of reference for this study. However, some observations regarding the study conducted by OVUM<sup>446</sup> merit mention. OVUM's proposals concerning the form of a revised interconnection directive, which would cover both voice and data communications, include the following:

- ◆ It should focus on the wholesale level (i.e., network interconnect services, access services and facilities, but not resale services) and should only address the supply of inputs for retail services.
- ◆ It should provide a single regulatory framework for fixed and mobile services. OVUM acknowledges the differences between the two industries, but is of the opinion that the best way to accommodate differences is not through separate regulation, given the growing importance of mobile services and the potential of fixed/mobile converged services.
- ◆ It should serve as an instrument of transition from market-opening legislation, such as the current interconnection directive, to the wider use of competition rules. Accordingly, it should be consistent with competition law principles.

OVUM's proposals concerning the transitional revision of the content of the interconnection directive, in order to move from varying degrees of competition to full competitiveness, include the following:

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<sup>446</sup> OVUM. A Review of the Interconnection Directive, Final Report to the Information Society Directorate . October 1999.

- ◆ It should divide the total interconnect service market into sub-markets, with the separate application of interconnection regulation to each sub-market, in order to take account of different levels of competitiveness.
- ◆ It should include a three-tier model of proportionate regulation, which distinguishes between:
  - operators without market power
  - operators with significant market power (SMP)
  - dominant operators

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**Chapter 6.1**

**Market Power**

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The public policy goal of ensuring any-to-any connectivity, which underpins regulatory intervention in the field of interconnection, is less obvious in the case of access issues. Because a request for access inevitably involves the use of another operator's resources, there are a number of policy issues relevant to whether access to any given network or service is necessary in particular circumstances. These policy issues vary greatly as between different commercial sectors and delivery platforms, especially in light of the different historical patterns of network and service evolution. The NRAs of individual Member States are currently dealing with a variety of access issues affecting fixed/mobile convergence, i.e., requests by new entrants for access to the local loop of the incumbent fixed network operator and/or requests by virtual network operators or mobile service providers to access the radio access network of mobile network operators, including requests for national roaming services. Such requests can give rise to important questions relating to future market structure, the extent to which competition has developed, and the liberalization measures required to promote competition. This section addresses issues affecting requests for access to the networks of fixed or mobile operators enjoying significant market power (SMP) or dominance.

The voice telephony directive<sup>447</sup> and the interconnection directive<sup>448</sup> lay down rules concerning the provision of access to the networks of operators, which have been designated by NRAs as having SMP. Although the provisions on access in the interconnection directive (Article 4.2) apply both to fixed and mobile operators with SMP, the special network access provisions in the voice telephony directive (Article 16) apply only to fixed network operators with SMP. Under the ONP Directives, access is one of the services, which must be made available to qualifying operators. However, the relevant provisions on access/special network access in the interconnection directive and voice telephony directive do not create an automatic right of access. They only place obligations on operators with SMP to respond to reasonable requests for access and lay down harmonized procedures, including criteria for NRAs, when dealing with requests for access.

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<sup>447</sup> European Parliament and European Council. Directive 98/10/EC of 26 February 1998 on the application of Open Network Provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment. (OJ 1998 L101/24).

<sup>448</sup> European Parliament and European Council. Directive 97/33/EC of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal services and interoperability through application of the principles of Open Network Provision (ONP). (OJ 1997 L199/32).

NRA practice throughout the EU demonstrates that various broad policy goals are applied with different weight by NRAs in the assessment of access requests by competitors<sup>449</sup>. Some of these factors are:

- ◆ user interests

This criterion reflects the Community's goal of delivering telecoms services to end users in a way which secures the maximum consumer benefit, both in the short and longer terms. The availability of access alternatives, for example, will have an immediate impact on the choices and prices available to consumers.

- ◆ promotion of fair and sustainable competition

This reflects the broad policy goals of expanded consumer choice, quality, and the promotion of economic efficiency. NRAs throughout the EU have expressed their commitment to ensure that both the short and the longer term future of competition is secured through the adoption of the access regimes adopted by Member States.

- ◆ stimulating innovative market offerings and providing users with a wide range of telecoms services at national and Community levels

As OFTEL of the United Kingdom has noted "...a straight refusal of the request that mobile networks should be under an obligation to supply access could have the effect of seriously restricting choice".

- ◆ relative market positions of the parties

OFTEL took into account the relative bargaining positions of the parties in a dispute over access to mobile networks between a small, newly founded operator (INMS) seeking a service from well-established market operators (Vodafone and BT Cellnet).

Importantly, in determining whether access to particular networks should be mandated, NRAs have also considered:

- ◆ the regulatory framework in which the specific telecoms market affected by the access request has developed
- ◆ the expectations of those who have invested in building networks under a given set of conditions

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<sup>449</sup> See, for example: OFTEL. Statement on National Roaming . July 1999 and Statement on Mobile Virtual Network Operators . October 1999 ; see the BIPT's (Belgian NRA) public consultation documents on the Evolution of the mobile telephony market towards the third generation . July 1999.



- ◆ the likely impact which changes in that regulatory framework may have on the security of investments already undertaken, and whether that impact may create uncertainties that discourage future investments in new services and new or expanded networks

Requests for access to the public telephone network infrastructure of a fixed SMP operator may be made under Article 16 of the voice telephony directive or Article 4.2 of the interconnection directive. Both of those provisions require SMP operators to deal with reasonable requests for access to their networks from organizations providing telecoms services. Article 16 of the voice telephony directive adds that this obligation may be limited, on a case-by-case basis, where:

- ◆ there are technically and commercially viable alternatives
- ◆ the requested access is inappropriate in relation to the resources available to meet the request

### **Technically and Commercially Viable Alternatives**

In evaluating access requests to fixed networks, it is highly relevant that there are no legal constraints to building competing fixed local access networks. There may also be other technically viable alternatives for providing the services planned by the organization requesting access (e.g., cable-TV networks and the resale of services offered by an existing operator). If these alternatives are judged to be commercially viable, there would be grounds for an NRA to deny access in a particular case. In determining the issue of commercial viability, the interpretation of the essential facilities concept under competition rules will usually be determinative.

Recently, in the Bronner Case, the Court of Justice explained the issue of commercial viability in the following terms: “for such access to be capable of being regarded as indispensable, it would be necessary ... to establish that it is not economically viable to create a second scheme for the distribution of daily newspapers with a circulation comparable to that of the daily newspapers distributed by the existing scheme”<sup>450</sup>. In that

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<sup>450</sup> Case C-7/97, *Oscar Bronner v. Mediaprint Zeitungs- und Zeitschriftenverlag* [1998] ECR I-7791.

case, Advocate General Jacobs explained the policy choices in terms of the balance between short term and long term goals, so that “if access ... to a facility were allowed too easily there would be no incentive for a competitor to develop competing facilities ... thus, reducing competition in the long term”. In substance, the Court considered that access cannot be granted exclusively on the ground that, by retaining a facility for its own use, a dominant undertaking retains an advantage over its competitors. Because the availability of spare capacity may vary in different parts of a network, access requests need to be assessed on a case-by-case basis. The burden of proof should be on the network operator to show that there is insufficient capacity in a particular location to satisfy the request for access.

The access issue affecting fixed networks, which is of fundamental importance to fixed/mobile convergence, is the availability of unbundled local loops. How regulators address local loop unbundling is likely to have an important bearing on the scope and speed with which the market can provide fixed/mobile converged offerings. It appears that independent mobile operators require access to the functionality embedded in the local switch in order to provide converged fixed/mobile products to the incumbent fixed operator’s customers. To date, numbers have been readily available in both the fixed and mobile sectors, albeit at some expense in various Member States for certain commercially advantageous numbers. In a fixed/mobile converging environment, numbers will become increasingly important as many of the key marketing strategies revolve around the ability of customers to retain one number, regardless of whether they are reached on their fixed or mobile phone. The underlying network intelligence necessary to identify such numbers, however, is embedded in a local switch or centralized database. Consequently, operators wishing to provide fixed/mobile converged products assert that they require the unbundling of this intelligence in the fixed network.

The debate over unbundling the local loop in Denmark initially arose as a result of the Danish fixed incumbent operator’s offer of a converged fixed/mobile service (the Duet service), to which mobile competitors also sought access. Some operators take the view that the unbundling of fixed networks is so important for the provision of fixed/mobile services that fixed operators launching new converged products should be obliged simultaneously to make unbundled local loop access available to competitors, so that they can compete immediately in the provision of such services. To the extent that competitors are denied access to a fixed incumbent’s local loop, the “first mover” advantage enjoyed by that fixed

incumbent for access to the Internet in particular, and higher bandwidth services in general, may be very significant. The ART in France, for example, has ruled that France Télécom cannot offer ADSL Internet access services without also offering competitors access to sufficiently unbundled local loops.

The availability, affordability, and scope of unbundled local loops on the fixed incumbent's network are currently the subject of major debate at both Community and Member State levels. Even where LLU has been introduced in principle, essential aspects of its implementation continue to be a work in progress. Some of the key aspects of the LLU debate are discussed below.

### **The Role of LLU**

The local access market is generally considered to include access, local and long distance traffic, Internet access traffic, and high-speed services to consumers. An operator who operates in the local loop has direct access to the customer, whether via its own infrastructure or through equipment leased from a third party.

The number of genuine alternative local loop providers competing with fixed incumbent operators is currently relatively low across the EU, and competition has been concentrated in the higher-activity areas, which provide higher returns on capital. Alternative market operators in the local loop in most EU countries are limited primarily to:

- ◆ operators having deployed their own high bandwidth optical fibre networks for large corporate customers
- ◆ cable TV operators, including relatively new operators who have immediately deployed networks allowing them to offer telecoms services, and older cable TV operators who are now modernising their networks in order to provide telecoms services

The local copper loop infrastructure of fixed incumbents has to date been able to deliver only narrowband services. However, xDSL technologies, which are currently being developed (and already deployed in some Member States) will make it possible to convey broadband services over existing copper loops. Access to the incumbent fixed operator's

copper loops, enhanced by xDSL technologies, is potentially attractive to new entrants, for two sets of reasons:

- ◆ Despite the existence of a number of alternative access options to consumers, including mobile operators, cable modems, higher bandwidth radio links, powerlines, and satellites, none of these alternatives has as yet been commercially exploited to deliver broadband services on a large scale. Alternatively, they display commercial or technical features, which limit their potential in the short term<sup>451</sup>. Access to enhanced local loops, by contrast, will allow operators to provide end-to-end broadband services on the local market in the short term, thereby preventing the fixed incumbent operator from extending or leveraging its dominance on the market for narrowband local services into emerging broadband services.
- ◆ LLU, with access to enhanced xDSL loops, is potentially attractive to new entrants, as compared to investing in their own local loops, because:
  - It replaces a large up-front capital investment cost with a rental cost which reduces the risk of market entry.
  - It allows the entrant to benefit from the economies of scale enjoyed by the incumbent.
  - It provides a low cost and relatively quick means of obtaining access to all the customers served in a given geographic area.

Thus, provided that it can be required without damaging the competitive development of alternative local loop providers, the introduction of LLU makes the traditional customer base of the fixed incumbent contestable by new operators, while also providing a means of giving consumers a choice in relation to the delivery of more advanced services which require higher bandwidth, thereby encouraging growth in the market. LLU can be particularly useful in the early stages of competition when new entrants have limited networks by providing a mechanism to stimulate growth and competition.

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<sup>451</sup> See, e.g.: OFTEL. Access to bandwidth: Bringing higher bandwidth services to the consumer, Consultation Document . December 1998. The ART in France, similarly concluded that, mobile networks will probably continue to focus on providing low-speed cellular services and satellite networks .

LLU is an access service which:

- ◆ is provided at a point between the network termination point (at the customer's premises) and the line-side of the access provider's local switch
- ◆ provides access to the local loop from the point of interconnect to the network termination point

There are two major variations of LLU, the first consisting of physical access to the transmission medium in the local loop (where access is defined in physical terms), and the second consisting of bitstream access (where a bitstream service is provided which does not require the physical control of the twisted copper pair).

In order for new entrants to be able to deliver their own higher bandwidth retail services, a number of alternative means of access to an incumbent's access network have been identified by NRAs throughout the EU which are based on these two groupings of physical or bitstream access:

- ◆ partial baseband leased circuit approach, where the local loop operator provides a telecoms service with defined characteristics to the new operator (i.e., effectively a leased line between the customer and the local exchange)
- ◆ bitstream access or xDSL access, where the incumbent owns and operates xDSL modems on each access line and the customer continues to contract with the local loop operator for access to the network, and receives telephony from the local loop operator, while acquiring higher bandwidth services from the new operator
- ◆ permanent virtual circuit access, where the local loop operator provides other operators with higher bandwidth access to the end customer using a point-to-point data service between the higher bandwidth customer access lines and the service provider's own site
- ◆ the simplest option, indirect access, where the higher bandwidth access line is connected to a broadband public switched network, but where the customer is still owned by the fixed incumbent operator

Access may be facilitated through co-location, virtual co-location, or direct connection (or remote co-location). Access can be local or remote. A number of those alternatives have been adopted at Member State level.

Currently, LLU is mandated in Austria, Denmark, Finland, Germany, Italy, and The Netherlands. As a result of the undertakings offered by the fixed incumbent operators in the Telia/Telenor case<sup>452</sup>, LLU was also to have been mandated in Sweden and Norway. Despite the decision of the Swedish and Norwegian operators not to carry out the planned merger, LLU was provided by Telia during the first quarter of 2000.

In the United Kingdom and France, the respective NRAs, following public consultations during the course of 1999, have also decided to introduce LLU. In both Member States, the majority of market operators indicated their preference for achieving LLU through the partial baseband leased circuit option (simply described as unbundled local loop or raw copper in France), possibly complemented by the permanent virtual circuit access option. In France, the bitstream access option was globally rejected by most respondents, arguing that it has no or only a few advantages compared with access to partial baseband leased circuits, and is beset with greater implementation difficulties.

In the United Kingdom, the incumbent fixed operator, BT, was strongly opposed to LLU in the form of partial baseband leased circuits, and advocated recourse to the permanent virtual circuit access option. In BT's opinion, the implementation of the latter option would render unnecessary any other option. OFTEL, however, has taken the view that there is a clear case for implementing LLU in the form of the partial baseband leased circuit option, and has scheduled its mandatory introduction for 1 July 2001. (OFTEL had already endorsed BT's preferred option of bitstream access, which means that two implementation options will be available in the United Kingdom.) The Irish NRA, the ODTR, was also conducting industry consultations on LLU in late 1999. In Sweden, the NRA conducted a public consultation during the course of 1999, which ended with the NRA submitting a proposal for a legislative amendment mandating LLU. The issue of LLU has yet to arise in either Greece or Portugal, as derogations were granted to these Member States.

The focus of regulatory attention in the countries where LLU is available has recently shifted dramatically from the fundamental issue of whether LLU should be available as a

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<sup>452</sup> The governments of Sweden and Norway submitted LLU commitments to the European Commission's Merger Task Force for the purpose of obtaining regulatory approval of the merger between their respective national fixed incumbent operators, Telia, and Telenor: Commission clears merger between Telia (Sweden) and Telenor (Norway) with substantial conditions. Press Release. (IP/99/746). 13 October 1999.

matter of principle, to questions regarding its cost, collocation details, and other technical elements necessary to its provision. For example, Tele Danmark and Denmark's alternative operators have been in dispute during 1999 over whether Tele Danmark may add additional charges to the cost of leasing Tele Denmark's raw copper, as originally determined by the Danish Telecommunications Industry Committee.

In Austria, the NRA has been called upon to resolve disputes between Telekom Austria and new entrants concerning the general terms and conditions for access to the local loop<sup>453</sup>. The pricing method chosen by the NRA follows the principle of forward looking LRAIC-orientation. In Germany, the requirement that the NRA approve LLU prices has led to an ongoing process of dispute resolution. In February 1999, the Reg TP fixed the price for access to the local loop at DM 25,40. Such price should in theory apply up to 31 March 2001, but the Reg TP Decision has been appealed. Further complaints are expected regarding the process of delivery of LLU.

One Member State, The Netherlands, has couched the introduction of LLU in a manner designed to encourage build or buy decisions by new operators (similar to the position adopted in Canada). Specifically, OPTA has prescribed a transition period of five years during which LLU pricing will evolve from a tariff based on historical costs to a tariff based on current costs. After this period, the fixed incumbent operator, KPN Telecom, will, in principle, be free to determine the tariff for this service on a commercial basis with other operators.

The issue of pricing and the difficulties involved with the implementation of LLU have also been addressed during the public consultation processes in France, Ireland, and the United Kingdom. Respondents in France, however, have argued that a solution to the problems involved with LLU implementation should not be a precondition to the introduction of LLU requirements in principle within the French regulatory framework. In all three Member States, attention has been drawn to the problems entailed in rebalancing tariffs, geographical de-averaging, and access to network information and interference issues. In France, the majority of respondents agreed with the principle of cost-orientation for LLU pricing, but opinions diverged as to which reference model should be chosen (LRAIC or

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<sup>453</sup> For a discussion of which, see: Martin Brodey, *Unbundled Access to the Local Loop in Austria*, C.T.L.R. 1999.

historical costs). The ART has not as yet indicated any particular costing formula preference. In the United Kingdom, OFTEL presented in its 1998 December consultation document three options for setting the price for LLU:

- ◆ line rental, less retail costs (retail minus)
- ◆ LRIC, plus a mark-up to account for costs that are common to the line and other BT services
- ◆ LRIC, plus lost profit from line rental and calls (known as ECPR, the efficient component pricing rule)

Following public consultation, OFTEL has indicated its preference for the second option. In its consultation paper on local loop unbundling, Ireland's ODTR takes the initial view that LRIC is the appropriate basis for LLU pricing. It contends that cost-oriented prices will be the best mechanism to encourage efficient build or buy decisions by new entrants.



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**Chapter 6.2**

**Sector Specific Regulation**

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Regulators are being asked whether the same degree of access to networks afforded by fixed operators with SMP should be mandated for the mobile sector (including the equivalent of LLU). The answer to the question depends largely on whether regulators wish to simply mirror the fixed environment, or whether a competitive number of mobile operators will be able to provide consumers with a sufficient degree of choice and competition.

The ongoing debate regarding which, if any, types of access should be afforded to mobile networks stems from a number of regulatory assumptions, which this chapter seeks to explore both individually and collectively. In summary, the regulatory assumptions, which have an influence on the access debate concerning mobile networks, are as follows:

- ◆ Spectrum scarcity is a barrier to entry.

Although a finite amount of spectrum means that the number of mobile operators can never be infinite, it is also true that this is a regulatory barrier, which can at least be partially overcome, even if not wholly overturned, if regulators adopt different practices to the allocation of frequencies.

- ◆ The mobile sector is oligopolistic.

Regulators are uncomfortable with the existence of only a handful of operators in a market, especially if an oligopolistic environment exists from the outset, with little likelihood of expansion in the number of operators as the market matures. Although a total of four mobile operators per Member State may cause concern in the longer term, recent patterns of commercial negotiation, combined with the advent of other regulatory policies, suggest that the number of providers of mobile services in the eyes of consumers could realistically be seven to eight (and possibly more) in many Member States. When coupled with an appropriate spectrum allocation policy, the disappearance of high entry and exit barriers will further assist in the entry of new providers of mobile services.

- ◆ Inbound calls to mobiles are a bottleneck.

It is generally understood by NRAs that mobile termination charges display bottleneck tendencies, similar to those found on the networks of fixed incumbents, despite the fact that, unlike the fixed sector, there is usually no dominant operator to the origination of calls. To the extent that mobile operators are adopting new tariff plans, increasing their European footprints, and becoming subject to competitive in-

house provision of mobile services through the use of UMTS technology (see later), the existence of a bottleneck for termination may be transient in nature. In this way, the market for mobile termination may increasingly display the hallmarks of competition, which the MMC has foreseen. Moreover, the functional level of competition relevant to the delivery of a call to its ultimate destination is at the inter-operator level. This embodies the concept of a natural market for interconnection; the fact that a given call can only terminate on one number is largely irrelevant if there is competition in the transmission of the call to the final operator.

◆ Inbound revenues subsidize outbound charges.

This proposition may be true, although:

- It may only be true at a particular historical point in the development of the mobile industry.
- It fails to take into account the fact that other parts of the mobile value chain are heavily subsidized in many Member States (e.g., prices for handsets), which would need to be rebalanced similar to the manner in which full tariff rebalancing should occur in the fixed sector.
- Cross-subsidization by a non-dominant entity does not infringe the competition rules.

◆ Prices should be cost-oriented to encourage economic efficiency.

In a network industry, parties with dominance should not be permitted to charge competitors for necessary industrial inputs at prices which are not related to cost, at least where no skill, foresight, or industry has been expended by the dominant entity. However, in a competitive market, access prices should, in principle, be driven by competition, not regulation. To the extent that those wholesale prices are excessively high, this may reflect some form of market failure rather than an economic inefficiency, which should be cured through additional forms of access regulation. Each of these propositions is evaluated in this chapter.

Requests for access to the radio access network of a mobile operator with SMP can be made under Article 4.2 of the interconnection directive. As to how far, and on what conditions, access to mobile networks is already mandated across the EU, the pattern is mixed. In some Member States (i.e., in Denmark and the United Kingdom), mobile network

operators are already required to provide some form of service provider access. However, in most Member States, this issue is currently under review or is at least on the regulatory agenda. NRAs have universally indicated a strong interest in carrying out public enquiries on the issue, in order to obtain industry input on different issues, including:

- ◆ how access to mobile networks should be resolved in the future
- ◆ how mobile access would affect the structure of competition
- ◆ what benefits and expenses to both end users and society as a whole lie in introducing new forms of access and third party utilization of existing mobile networks

In Denmark, the National Telecommunication Agency's Decision that Sonofon had SMP in the mobile market, and was therefore required to meet the reasonable requests of the Virtual Network Operator "Sense" for access, stemmed from Sense's request for an interconnection agreement with Sonofon for a number of bearer services and teleservices, from a request for details of the interface between the mobile terminal and Sonofon's GSM network, and between Sonofon's GSM network and Sense's network. Sense requested that the National Telecommunication Agency decide whether its request was a "reasonable request" under the terms of the Danish Interconnection Act.

On balance, the understanding of Article 16.1 of the voice telephony directive and the operative elements of the access notice suggests that only where all mobile operators in a given national territory refuse to grant access to their networks, and no further licenses are available, could a service provider assert that there is no technically viable alternative for bringing its services to the market.

Under the interconnection directive, NRAs are required to recognize the legitimate interests of both parties when dealing with requests to networks with SMP. Existing mobile operators in order to protect a period of exclusive use of their network may therefore legitimately invoke justifications based on the recoupment of initial investment.

During such periods, the imposition of unbundling obligations on mobile operators would clearly require stronger justification. However, once the initial costs of a mobile network operator have been recovered, the question is whether it would be appropriate to require some form of unbundled access for service providers. Ongoing consultation processes in many Member States may produce some valuable answers.

Once it is determined that access should be granted, the issue of charge becomes critical. Unlike the voice telephony directive, the interconnection directive does not explicitly mandate cost-orientation for access, and presumes that such charges should be commercially negotiated between the parties. Seen in this context, where commercial negotiations fail, NRAs may be called upon to resolve disputes and to set a charging formula for access.

- ◆ As noted above, an NRA may require cost-orientated access for a particular type of access, provided the obligation is proportional to the aim pursued. However, a recent request for indirect access to mobile networks filed with OFTEL by the company INMS indicates that this may not be the common outcome. OFTEL concluded that, although access should be mandatory in the specific circumstances of the case, it should be charged to the requesting operator at retail-minus prices (i.e., at retail prices less any savings for those elements of the retail service which the indirect operator will substitute for those of the network operator), rather than at cost-oriented prices (as used for indirect access to fixed networks).

Charging for access to mobile networks at purely cost-based rates would ignore the competitive conditions under which network investment has taken place in the mobile sector and the relative immaturity of the sector compared to the fixed sector.

The key criticism to which the retail minus formula is prone, is that historically it has been applied to utility sectors. In utility sectors, the concept of a retail price is relatively uncontroversial. However, in a volatile mobile sector characterized by multiple tariff packages, the concept of a retail price may prove to be more elusive. Similarly, the cost of those elements, which will be subtracted from the retail price (the minus element) are not certain in each case because of the nature of a mobile network, which is less susceptible to a precise breakdown of its various constituent elements than is a fixed network (see discussion below on VNOs).

For these reasons, the preference should be given to the negotiation by the parties of access on commercial terms. The level of competitiveness of mobile markets throughout the EU will be an essential element in determining whether, and the extent to which, access to mobile networks should be mandated. The collective impact of a number of different market and regulatory developments should be taken fully into account when determining critical issues relating to access to mobile networks.

There are a number of outstanding issues relating to various aspects of access to, or termination on, mobile networks, which will no doubt be the subject of continuing assessment by NRAs in the period up to the year 2002. Their relative importance will escalate with the introduction of third generation mobile systems.

As defined in the Commission Green Paper on a Common Approach in the Field of Mobile and Personal Communications in the European Union<sup>454</sup>, roaming is the “facility, supported by commercial arrangements between operators and/or service providers, which enables a subscriber to use his/her radio telephone equipment on any other network, which has entered into a roaming agreement in the same or another country for both outgoing and incoming calls”.

It should be noted that the roaming is, in principle, international (i.e., limited to roaming between operators established in different countries), but is also now available on a national basis (i.e., used between operators established in the same country). Roaming can be implemented either manually (by the customer) or automatically (by the operator/service providers). A variation of national roaming occurs when the operator applies different prices to zones within the scope of its own network. In such cases, users making calls outside their home coverage zone, defined by their mobile operator, will usually be charged a higher tariff.

Distinctive regulatory issues have arisen over the past few years in the context of roaming, for example, the scope of the GSM MOU Association Agreement. In early 1998 (Case IV/96.153 GSM International Roaming) the Commission’s Competition Directorate reviewed the standard international roaming agreement of the GSM MoU Association, which is designed to ensure that GSM mobile phone users in one country can use the GSM network in another country. In its decision<sup>455</sup>, the Commission envisaged that:

- ◆ Nothing in the agreement would prevent a consumer in one country from taking out a subscription with a network operating in another country.
- ◆ Commercially sensitive information provided to other operators in the context of roaming agreements would not be capable of being used for other (anti-competitive) purposes.

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<sup>454</sup> COM (94) 145 final.

<sup>455</sup> IP/98/147. 11 February 1998.

The Commission is currently considering the introduction of a proposed inter-operator tariff for roaming, which should result in lower prices for consumers in the European Union. At the time of writing, the Competition Directorate was about to launch a sectoral enquiry into the competitiveness of international roaming practices.

The initiation of a sectoral inquiry into international roaming practices would provide a competition-based analysis designed to determine whether regulatory bottlenecks or market failures exist or are likely to materialize. As such, sectoral enquiries provide an appropriate mechanism through which regulatory and competition policies can be linked.

National roaming allows a mobile network operator to access the networks of other operators to provide service to its own customers, typically in areas where the operator does not itself, have coverage. National roaming is considered to be beneficial for three reasons:

- ◆ It allows mobile network build-out to be economically sustainable.
- ◆ It can be pro-environmental.
- ◆ It may facilitate competition.

A number of NRAs have mandated that national roaming be afforded to third and fourth mobile operators, so as to enable them to compete effectively with the more established mobile operators during the initial rollout of their networks. Mandated national roaming has a typical lifespan of three years, after which new entrants are required to have rolled out their own networks.

Most recently, concerns have arisen that, in a highly competitive market of three or four mobile operators, mandated national roaming is unnecessary, as it is a service which will in all likelihood be offered by one of the existing operators on commercial terms. Later entrants in the mobile sector have also expressed reservations about the competitive disadvantages of national roaming.

National roaming became a significant regulatory issue in the third generation mobile systems licensing process in the United Kingdom, threatening to delay the award of licenses. The government decided that all four GSM network operators (2<sup>nd</sup> generation) would be required to allow UMTS licensees (3<sup>rd</sup> generation) to roam on their GSM networks. In August 1999, however, the High Court held that the United Kingdom government's attempt to impose additional conditions to this effect on the GSM licensees was unlawful. In October, the High Court of Appeal overturned the High Court judgment, holding that the

government's powers are sufficiently broad to be able to modify licenses in the manner prescribed. Consistent with its approach to costing for indirect access, OFTEL ruled that roaming on second generation networks by third generation operators would be at the retail plus formula.

The United Kingdom's decision to mandate national roaming, so as to supplement third generation coverage (which is set at a significantly lower level of penetration than GSM levels) until the year 2009, should be contrasted with the approach adopted by the ACCC, the National Competition Authority in Australia<sup>456</sup>. The ACCC's analysis consisted of two steps:

- ◆ Identify the relevant markets affected and analyze the current level of competition.
- ◆ Compare the level of competition likely to occur without mandatory roaming at the current level of regulatory intervention (the with/without or but/for test).

Similarly, it concluded that market forces would lead to competition between existing operators, preventing the imposition of exorbitant charges. Although the ACCC accepted that the price of national roaming remained an issue, it noted that there were also risks involved in prices being imposed by a regulator using a top-down methodology.

In another development over the course of 1999, the Finnish Competition Agency (the FCA) ruled on Telia Finland's dispute with Sonera and Radiolinja over national roaming rights in late September 1999. It concluded that both operators had priced national roaming so high that Telia Finland had no chance of providing national mobile services. The FCA is now attempting to set rates for national roaming with Sonera and Radiolinja. However, the Director of the FCA has declined to indicate whether the FCA favours any particular pricing model (e.g., retail-minus, cost-plus, or variants thereof). The FCA's express intention is to ensure that the roaming rates and conditions agreed by the parties promote competition by introducing new competitors. In addition, the FCA has made it clear that indirect access arrangements are not, in its view, substitutes for national roaming.

National roaming can assist new mobile entrants greatly by allowing them to obtain access to the broadest possible customer base, subject to a commitment to a relatively rapid

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<sup>456</sup> Public Inquiry into Declaration of Domestic Interconnector Roaming under Part XIC of the Trade Practices Act 1997. At: [www.accc.gov.au/contract/istelecom.htm](http://www.accc.gov.au/contract/istelecom.htm).



network roll out. This form of entry assistance greatly increases the overall competitiveness of any given national market.

To the greatest extent possible, operators should be encouraged to reach commercial agreement on national roaming without NRA involvement. A recent competition-based analysis in Australia concluded that, in markets with three or four existing mobile operators, there may be sufficient commercial incentive for existing operators to offer national roaming to new entrants without the need for regulatory intervention mandating national roaming.

A practice has arisen in Germany, and most recently in Finland, whereby a third or fourth entrant in the national mobile market has sought to circumvent national roaming rules (or the lack thereof) by taking advantage of the international roaming rights of a third party, but using them solely in a national context. A mobile wash request referred by the Commission's Competition Directorate-General is currently before the NRA and Competition Authority for resolution. When the Telia Finland–Sonera and Radiolinja negotiations broke down (see above), Telia Finland commenced service provision by accessing Sonera's network through the acquisition of services from Swisscom under international roaming agreements of the latter with Sonera and Radiolinja respectively (i.e., the use of the so-called mobile wash technique). After three weeks, Sonera terminated Swisscom's roaming agreement and denied Telia Finland access to its network. In addition to the proceedings before the Finnish Competition Authority, Telia Finland filed a complaint against Sonera and Radiolinja with the European Commission, alleging that the conduct of the Finnish mobile operators infringed Articles 81 (1) and 82.

The matter was referred by the European Commission to the Finnish NRA, which in turn passed the matter to the Finnish Competition Authority for final resolution. Before the final resolution of the case, the European Commission has refused to grant interim relief to Telia Finland, and the company has entered into service provider arrangements with the two Finnish mobile operators.

The availability of mobile wash practices indicates that the number of national competitors in any given Member State could be raised substantially. This could have a very positive effect on the growth on the overall competitiveness of the sector. Regulators should exercise caution in mandating the use of mobile wash practices, preferably leaving it to the relevant market actors to negotiate commercial agreements. The realization that all mobile operators need to be able to negotiate international roaming arrangements means that those

operators seeking to obtain national roaming rights on the basis of another operator's international roaming rights will be in a good position to do so. Similarly, by obtaining access in this way to another operator's home markets, they leave themselves open to providing a similar services on their home market.

The benefit of SIM lock devices, for both consumers and operators, is that they help deter the theft of handsets. However, they also have the effect of locking a customer handset to a particular network operator or service provider. The Commission has alleged that the SIM lock device could be used to prevent consumers who had purchased a mobile handset from later choosing which mobile phone best suited their needs, thereby raising serious anti-competitive concerns. The investigation, which was launched by the Commission in 1996, demonstrated that whilst most operators did not feel it necessary to use the SIM Lock feature, the risk of anti-competitive uses had been foreseen in certain countries, notably in France and Denmark, where special rules had been adopted to oversee its use. This was not, however, the case in all Member States<sup>457</sup>.

The SIM lock investigation<sup>458</sup> was concluded in August 1996, pursuant to which the Competition Directorate-General received assurances that SIM locking devices would allow end users to unlock their mobile handsets on the basis of information provided by the network operator/service provider. The practical effect of the SIM Lock decision is that consumers are no longer charged what were often significant amounts of money, for the ability to link their own handsets to another operator or service provider. The implementation of that decision in practice, ensures the competitiveness on a pan-European basis of multiple service options for consumers.

In February 1999, OFTEL published a consultative document setting out its proposals for the implementation of indirect access to mobile networks. Responses covering the key issues were received from a mix of consumer groups and industry players. OFTEL noted that there is already significant competition in the sector at the service level, and that adding to the number of competitors would not necessarily guarantee a greater degree of competition. Nevertheless, OFTEL indicated that that there should be an obligation to provide indirect access on the part of the two mobile networks that were parties at the time

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<sup>457</sup> The Commission takes action to prevent anti-competitive practices in the mobile phones sector . Commission Press Release. (IP/96/791). 8 August 1996.

<sup>458</sup> Case IV/35.914, *SIM Lock* [8 August 1996] Commission Press Release IP/96/791.

to the two current disputes on indirect access for mobile networks, namely, BT Cellnet and Vodafone.

OFTEL proposed that indirect access should also be made available at a retail-minus level (as for national roaming of a new entrant third generation operator on a second generation network), and prescribed the way in which it would determine charges, should it be called upon to do so<sup>459</sup>. OFTEL's grounds for this approach were as follows:

- ◆ Article 4 (1) of the interconnection directive provides that organizations authorized to provide public telecoms networks have an obligation to negotiate interconnection (i.e., not another form of access) with other such organizations.

In substance, OFTEL's arguments in favour of a retail-minus pricing system for indirect access were that:

- ◆ It ensures that competition is focused on those elements of the total retail call where the operator and the network operator are genuinely competing.
- ◆ It avoids a major change in the regulatory framework (which would increase regulatory risk).
- ◆ It avoids regulatory intervention dictating the pace of change in retail pricing. OFTEL considers that such intervention would be both unnecessary and potentially damaging in a new market in the United Kingdom that is already becoming effectively competitive.

OFTEL received a large number of comments<sup>460</sup> in response to its consultation documents regarding the indirect access principle. The comments relating to charging are of particular interest. In particular, INMS, a new entrant, argued that prices for calls to mobiles are maintained at artificially high levels by reason of the calling party pays convention, which prevails in the EU. INMS also objected to the retail minus pricing mechanism on the basis that it would distort competition in downstream service markets, particularly in relation to competition in call origination. INMS proposed that cost-based pricing would be more appropriate, arguing that the efficient component pricing rule (ECPR), on which retail-minus

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<sup>459</sup> Under the Interconnection Directive, if negotiations between the indirect access operators and the network operators do not result in agreement, and the dispute is referred to the Director General of Telecommunications, he has to consider the issue in light of the criteria set out in Article 9(5) of the Interconnection Directive.

<sup>460</sup> The comments referred to can be downloaded from the Oftel WEB site: [www.Oftel.uk](http://www.Oftel.uk)

charging is based, cannot be supported in such a context. INMS sought to demonstrate that the assumptions required to support ECPR are not reflected in the conditions found in the mobile market. INMS went on to claim that ECPR, particularly end user pricing, is inappropriate, inherently discriminatory, and in breach of ONP principles. The alleged discrimination could occur in three different ways, by producing:

- ◆ a profit squeeze
- ◆ the price follower effect
- ◆ an inherently distortive market price

INMS argued for the adoption of cost-based prices, addressing the argument that cost-based pricing may damage network competition, by noting that later entrant mobile operators such as Orange and One-2-One are extremely unlikely to exit the market (given the state of the development of competition).

It is claimed that QIA would require indirect access be provided, under the interconnection directive, Annex II<sup>461</sup>, to operators satisfying the following conditions:

- ◆ variety, whereby a QIA operator should provide a wide range of telecoms services, as well as offering two-way communications
- ◆ innovation, which means that a QIA operator should show a commitment to investment in better quality services by providing innovative market offerings
- ◆ multi-access, whereby a QIA operator is allowed to access indirectly the subscribers of operators with SMP. By obtaining multi-access, a QIA operator might claim that it could:
  - offer service provision to rural areas
  - improve resilience
  - in certain circumstances, offer its services to any of the existing mobile network companies through a roaming agreement

It was also argued that UIA, which would allow anyone with Annex II status to obtain indirect access, would damage the prospects for those operators seeking to establish a wide

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<sup>461</sup> A description of these operators can be found in the Appendix J: European Parliament and European Council. Directive 97/33/EC on Interconnection in Telecommunications with regard to ensuring Universal Service and Interoperability through the Application of the Principles of Open Network Provision (ONP). Annex II, Part IV 8.2..

range of telecoms services, because margins on voice would be cut so dramatically that this would erode the revenue streams needed for small start-up operations seeking to deliver innovative offerings. In contrast, QIA would lead to a substantial transfer of profits from network operators to indirect access operators, which would ensure that effective competition is stimulated.

The QIA approach would, if implemented, create *de facto* special rights in those operators, which could satisfy its standards. However, this would put an NRA in the invidious position of having to determine whether an operator satisfied certain qualitative criteria, which would be difficult to establish (i.e., tantamount to the establishment of a selective distribution system under competition rules). As such, the QIA approach would be inappropriate, except in those instances where the market was more mature and where limited reserves necessitated market entry by only a limited number of new entrants.

A mobile VNO is a special form of mobile service provider with typically at least one switch (MSC), a home location centre (HLR), an authentication centre (AUC), and its own series of subscription identities (SIM cards), but with no access network of its own because it does not have an allocation of spectrum. A mobile VNO, however, might have access to a mobile network identity number (IMSI) series, as well as mobile network telephone numbers (pursuant to its mobile network code (MNC) that identifies it as having access to spectrum).

A mobile VNO buys capacity from existing operators at non end user rates, which it then sells to end users at retail rates. Because it could in theory do so, without rolling out its own infrastructure, and could establish itself at minimal cost in a number of countries, a mobile VNO could provide pan-European services. A mobile VNO is able to market and sell its services in its own name and is generally responsible for the major portion of the production of those services.

The mobile VNO business model may be used as a relatively simple means of increasing a mobile operator's existing geographic footprint. Mobile VNOs have recently been a major regulatory issue in the Nordic countries, where a mobile VNO called Sense Communications sought to establish a regional footprint and was consistently denied interconnection at interconnection rates by mobile operators in the region. Although NRAs in the region did not permit operators to deny the Sense Communications access to their networks, the prices offered for access were not referable to actual costs. The mobile VNO

issue is likely to arise again, especially if entry into the mobile sector is considered to be restricted as a result of spectrum scarcity.

OFTEL has been consulting on the structure of the access regime for mobile networks in the United Kingdom for some time. After beginning its indirect access consultation, it moved rapidly to mobile VNOs, which it refers to as MVNOs.

In its June 1999 consultation into MVNOs, OFTEL considered whether, in the absence of commercial agreement, regulatory intervention might be necessary to ensure that would-be MVNOs can access existing mobile networks. OFTEL invited public comment on a range of issues, including its proposal to adopt a retail minus charging model, implemented on the basis set out in its February 1999 consultation document (on whether indirect access should be mandated). It went on to request comment on the definition of MVNOs; assessments of demand; views on whether there is a basis for requiring network operators to make MVNO services available in the absence of competition; comments on which operators should be liable (if there were an obligation); suggestions as to the terms (particularly in relation to charging) for service provision; and the identification of key, technical considerations.

The results of the June 1999 consultation and OFTEL's conclusions are found in its October 1999 Statement on MVNOs<sup>462</sup>. OFTEL concluded that it is not yet clear whether the interconnection directive applies to the provision of services to MVNOs, noting that if the interconnection directive is determined to apply to MVNOs in the future and OFTEL is asked to resolve a dispute, it would consider the impact of MVNOs on competition and consumers under the criteria set out in Article 9 (5) of the interconnection directive. In considering the economic benefits and costs of MVNOs, OFTEL concluded that it is not clear that innovation leading to the development of a wider range of value added services or converged services is necessarily dependent on regulatory action to help establish MVNOs. It decided that many converged fixed/mobile services could be provided if companies combined fixed services, indirect access, and mobile service provision. In considering whether MVNOs are necessary to address barriers to entry, OFTEL concluded that the development of effective competition was possible and that the market is moving towards such competition. OFTEL also noted that MVNOs are irrelevant in addressing the issue of

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<sup>462</sup> For reference and possible download, see [www.Oftel.uk](http://www.Oftel.uk). Follow instructions given on the screen.

spectrum scarcity, unless they have a subsidiary effect of increasing the intensity of competition between the underlying networks. However, OFTEL did acknowledge that MVNOs may be able to reduce costs for customers, by making it easier for consumers to change network operators. Similarly, if MVNOs can switch the underlying networks used by them and arbitrage the network's tariffs, prices could be pushed down. However, the prices of incoming calls to mobiles would not necessarily also decrease, since many calls will still be carried for significant parts of the transmission on mobile networks.

In a policy reversal, the Norwegian Ministry of Transport and Communications appears to have taken a position contrary to the decision earlier in 1999 of the NRA, which had favoured mandating network access for mobile VNOs. In a White Paper on telecoms submitted to the Norwegian Parliament in December 1999, the Ministry based its position on the negative impact which such a policy would have on investment in the mobile sector.

In the first half of 1999, the Commission concluded an investigation into the rates charged for fixed-to-mobile and mobile-to-fixed call termination, and the retention rates of fixed incumbents in their interconnection arrangements with mobile operators. During the course of that investigation, the intrinsic difficulties of equating mobile termination charges with fixed termination charges were borne out, with mobile tariffs generally being characterized by relatively low origination charges offset by relatively high termination charges.

The Commission closed that aspect of its investigation dealing with termination charges on mobile networks, after being satisfied that market developments were addressing its concerns regarding excessive pricing. Between February 1999 and August 1999, significant reductions in the price of fixed-to-mobile calls occurred in a number of EU Member States. In a number of instances these reductions were the result of NRAs requesting that the price of such calls be lowered.

In September 1999, the Information Society Directorate General (DG INFSO) indicated that it considered as appropriate, where justified and respecting the principle of proportionality, the definition by the NRAs (or the national competition authorities) of an upper benchmark for call termination on mobile networks. Mobile retail tariffs should, however, rely on competition. Moreover, the conditions set out by the national authorities for the determination of call termination charges should be sufficiently flexible in order to allow mobile operators to offer specific termination charges, and to reflect various

competitive economic conditions. DG INFSO also recommended that these conditions be reflected in the retail charges offered by the fixed operators to subscribers and that fixed operators provide subscribers with the necessary information on call termination charge applied by the mobile operators. It is expected that such a policy will have as an effect to increase customers' awareness and foster the emergence of price competition in the mobile call termination market.

In addition, a growing number of NRAs are designating mobile operators as having SMP with respect to the termination of all calls on the national market for interconnection, thereby subjecting such operators to cost-oriented termination rates. More recently, it was announced in mid-November 1999 that a private action was being brought against certain mobile operators in various EU Member States for excessive mobile call termination charges.



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**Chapter 6.3**

**Consumer Protection Measures**

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The scope and content of consumer protection rules governed by various provisions of the ONP voice telephony directive often vary according to both the type of operator providing the service (e.g., fixed or mobile) and the market position of such operators (e.g., operators with significant market power). The continued application of these criteria is called into question in the light of fixed/mobile convergence. In a fixed/mobile converged environment, the parameters of universal service obligations and the responsibilities of those operators which are designated to provide universal services, may need to be redefined, especially in light of the multiple categories of market operators, which are subject to consumer-oriented obligations.

The ONP voice telephony directive, which defines the bundle of universal services to be provided to consumers, requires Member States to ensure that all reasonable requests for connection to the fixed public telephone network at a fixed location, and for access to fixed public telephone services, are met by at least one operator. Member States may, if necessary, designate one or more universal service providers, so that service is available throughout the whole of the national territory.<sup>463</sup> Designated providers must provide a connection to the fixed network that is capable of allowing users to make and receive national and international calls, and that is capable of supporting speech and facsimile and data communications.<sup>464</sup>

Member States must also ensure that public pay telephones are provided so as to meet the reasonable needs of users in terms of both numbers of public telephones and their geographic coverage<sup>465</sup>, and may, where appropriate, take specific measures for disabled users and users with special social needs.

The definition of the universal service bundle, however, is only one aspect of the directive. The directive is also concerned with achieving an appropriate balance between the development of new services and the sustaining of competition on the one hand, and the protection of consumers in their relationship with service providers on the other. To this end, the directive defines different categories of operators, to which the range of obligations defined in the directive applies to varying degrees. The directive distinguishes between mobile operators and fixed operators, by excluding the former from many of the obligations set forth under the directive:

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<sup>463</sup> Article 5.1.

<sup>464</sup> Article 5.2.

<sup>465</sup> Article 7.

- ◆ Mobile operators are subject only to five key obligations set forth in the directive:
  - Article 6 on directory and enquiry services
  - Article 9 (b) on access to operator assistance services and enquiry services
  - Article 9 (c) on free access to emergency services
  - Article 10 (1) on an operator's obligation to provide consumers with a contract
  - Article 11 (1) on the publication of information on standard terms and conditions
- ◆ Fixed operators are subject to the following categories of obligations:
  - The provision of universal service is ensured through the designation by the Member States of universal service providers.
  - Significant market power is used as the criterion to distinguish further between remaining fixed operators.

Organizations with significant market power are subject to additional obligations relating to:

- quality of service
- the provision of additional facilities (calling line identification, direct dialling-in and call forwarding)
- tariff principles (cost-orientation, transparency and unbundling of services)
- cost-accounting principles<sup>466</sup>

Moreover, distinctions are also drawn among fixed operators in terms of the types of consumer obligations relevant to individual types of service, such as:

- universal service<sup>467</sup>
- access to fixed networks
- public telephone services
- voice telephony services

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<sup>466</sup> Article 8.

<sup>467</sup> In some cases, designated universal service providers come under additional obligations, provided that they also enjoy significant market power. This is true in the case of Article 15 on the provision of additional facilities and Article 17 on tariff principles and cost-orientation..

For instance, only providers of voice telephony services, together with designated universal service providers with significant market power, are under the obligation to provide the additional facilities listed in Article 15 of the directive. In light of the fact that Member States, pursuant to Recital 6 of the directive, should take into account the ability of an operator to provide universal services in designating such an operator, this has in effect meant that the designated universal provider in each Member State has been the incumbent fixed telecoms operator, which not only enjoys significant market power, but invariably has a dominant position.

The limited applicability of the provisions of the directive to mobile operators and the use of the concept of significant market power as the differentiating element between fixed operators raise difficulties in a fixed/mobile converging environment because distinct issues are tackled using the same set of regulatory triggers, namely, the first set of problems involves questions of redistribution and concerns the definition of the universal service bundle. For example, who should have the right to what service at what cost, who should pay for those services, who should provide the services, and how?

The second set of issues, by way of contrast, simply addresses consumer protection issues. These measures address how best to prevent harm to consumers and to prevent the occurrence of competitive market distortions characterized by significant disparities between both telecoms suppliers and consumers, and among suppliers themselves.

Regulatory measures addressing information-related obligations are derived from the asymmetric power enjoyed by telecoms operators as compared to consumers. These types of measures apply to all operators, regardless of their relative importance in the market and whatever the level of competition on that market, and also apply irrespective of the technology used. Such measures mainly deal with obligations designed to counterbalance consumers' relative lack of information and bargaining power, by requiring operators to provide consumers with sufficient information on their services and tariffs. This may also include positive obligations such as the provision of an itemized bill or selective call barring services, which allow the consumer to control his or her level of consumption. In the latter case, recourse to a *de minimis* rule or to commercial criteria (such as the length of time an operator has spent on the market) is envisaged if deemed necessary in order not to hinder the development of new market entrants.

The example of Denmark is instructive in this respect. Denmark has adopted a set of telecoms-specific, technology neutral, obligations in the field of consumer protection<sup>468</sup>. Some smaller market players have complained to the Danish NRA, the NTA that the requirements are disproportionate, both in economic and administrative terms, and have argued that an exemption should be available to smaller market actors. The NTA, however, is of the opinion that a system of exemption would be difficult to manage in practice. Exempting some providers, it believes, on the basis of their size, would not be appropriate given the regulation's objective of protecting consumers, implying that regulatory constraints should apply whatever the size of the operator. However, the NTA has considered the option of differentiating between operators according to the types of customers (whether they are individuals or enterprises) they serve and the services to which their customers subscribe. For example, the NTA suggests that operators could be subject to stricter obligations, notably in terms of the range of services offered to subscribers, where the amount paid by consumers varies with the level of<sup>469</sup> consumption.

In light of the above, there is a need to reconsider whether certain obligations regarding cost-orientation should be mandated, and to assess whether competition law will be sufficient of itself to tackle the abuse of market power with regard to retail pricing issues. In doing so, consideration should be given to the fact that universal service providers will in any event remain subject to the obligation to provide affordable services. Similarly, as regards the provision of additional facilities (e.g., calling line identification, call forwarding, and direct dialling in), where such measures are not necessary for the protection of the consumer (i.e., where their provision does not assist consumers in controlling their consumption patterns), the issue then becomes one of whether these measures are essential and therefore need to fall within the scope of the universal service umbrella; or non-essential and can be best left to the marketplace to provide via competitive service offerings.

Thus, it is suggested, firstly, that a distinction be established between universal service obligations and consumer protection measures. Universal service would be provided, as is now the case, by one or a few operators, subject to specific obligations in terms of the

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<sup>468</sup> Executive Order No. 581 of 6 July 1999 on the Provision of Telecommunications Networks and Services .

<sup>469</sup> Telestyrelsen. Udredning vedrørende regulering af udbudet af telenet og teletjenester . September 1999.

services to be provided and their tariff levels. Secondly, as a matter of principle, consumer protection measures should apply to all fixed and mobile operators. The uniform application of consumer protection measures to mobile and fixed operators was supported by the majority of telecoms market players, principally on the ground that any other policy would confuse consumers and distort competition.

To the extent that a service is regarded as being truly essential, it should be provided by the designated universal service provider(s). It appears to be unnecessary to impose such an obligation with respect to the mandated provision of additional facilities on service providers with SMP. Only when consumer protection measures are adopted because of the risks of abuse of market power, should additional distinctions be drawn between operators. In these circumstances, before imposing any new obligations, consideration should be given to whether the market is satisfying consumer demands. Consideration needs to be given to whether operators and business users can, in a fully competitive environment, derogate by contract from consumer protection standards, which would otherwise apply to all end users. In the alternative, consumer protection measures in the telecoms sector could be expressed to apply only to relations between operators and consumers acting outside their trade, business, or profession. Such a possibility would be consistent with other Community horizontal consumer protection legislation, which seeks to address consumer issues associated solely with private individuals acting outside the scope of their professional activities (e.g., the unfair contract terms and distance selling directives). It would also accord with the realities of sophisticated corporate consumers of communications services.

As regards the content of the universal service obligation, and consistent with the principle of technology neutrality, the limitation of the universal service bundle to fixed networks may need to be reconsidered.

### **Broadband/High Access Speed**

The European regulatory framework does not impose any obligation on universal service providers regarding the provision of particular bandwidth. Where Member States have

included in their definition of universal service a reference to minimum access speeds, these have never exceeded 2,400 bits/second<sup>470</sup>.

The provision of broadband communications as a part of universal service could nonetheless be facilitated if the principle of technology neutrality were applied in such a way as to refer to the options available in the delivery of the elements of the universal service bundle. Indeed, developments in satellite, mobile, and fixed cellular broadband access capabilities lead to the conclusion that these technologies could, over time, become alternatives to xDSL technologies in geographic areas characterized by lower fixed line density and longer local loops, thereby decreasing the costs of broadband access. It should also be noted that mandating the provision of broadband services at this stage would also have the effect of extending the current scope of universal service. As OFTEL puts it, however: “universal service is about finding ways of meeting the needs of those remaining few whom the unregulated market might choose not to serve. It is not about predicting what will be required in the future and requiring it in advance. Neither is it about prescribing what is required for future economic growth and prosperity”<sup>471</sup>.

On the other hand, those who argue that broadband access should be included in the scope of universal service base their claims on a prediction of what might be essential in the future for the full participation of all citizens in the information society, and on the need to avoid the emergence of a group of communications “have nots”.

Whether broadband access should be available to anyone, anywhere, including remote and low population density areas, is ultimately an issue of social policy. There is no justification for including broadband access as part of universal service at this stage of the development of the market. If it were decided to include broadband service in the future as part of the universal service obligation at Community level, a procedure linked to the feasibility of providing broadband access to everyone within a given Member State, should be made available, whereby Member States could defer such an obligation on a case-by-case basis.

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<sup>470</sup> BEUC. Universal Service in Telecommunications: European Consumers' Rights to Telecommunications Services. (BEUC/341/98). November 1998.

<sup>471</sup> OFTEL. Universal Telecommunications Services. Consultation, July 1999. Para. 2.11.

## Mobile Services

Including mobile services within the scope of universal service obligations might occur for two separate reasons:

- ◆ Mobile services could be introduced as a substitute for fixed services, where there are cost advantages in so doing
- ◆ Mobile services could be included as an extra service, supplementing the existing universal service bundle.

The fundamental difference between fixed and mobile services is that a mobile service normally connects individuals (as opposed to households) and it does so (almost) wherever individuals are. If the use of mobile service is not restricted, mobile services could not only provide any-to-any connectivity, but also anywhere-to-anywhere connectivity. Ensuring anywhere-to-anywhere connectivity in Europe would be a significant extension of the current scope of universal service, and would go much further than using mobile communications as a substitute for fixed services where to do so is cost-effective. If the choice is made to continue limiting the scope of universal service to the provision of any-to-any connectivity, then using mobile technologies would require the implementation of technical restrictions on the use of mobiles when provided as part of the universal service bundle. Whether the universal service bundle should be extended to ensure anywhere-to-anywhere connectivity is a question which warrants two observations. Firstly, such a decision is clearly a social policy question, the answer to which depends on what is considered essential to participate in the information society. Secondly, even if mobile services were deemed to be essential, this should not be sufficient to require their inclusion in the universal service bundle.

As noted by OFTEL, mobile telephony is already provided by the market to anyone on request and the critical question is therefore one of coverage and affordability. There seems to be no compelling reasons to move from guaranteeing affordable any-to-any voice communications for all EU citizens to ensuring anywhere-to-anywhere connectivity. As mobile services increasingly substitute for fixed services, it seems much more appropriate to require mobile operators to contribute to an overall universal service fund (if deemed to be necessary), as already occurs in a number of Member States.. The principle of affordability should include the concept of platform neutrality, which would mean that universal service



should be provided via the most economic means available. In this context, defining at the Community level the scope and operation of the “pay or play” principle in a fixed/mobile converging environment is of paramount importance.<sup>472</sup> The balance between what is essential and what is affordable need not be frozen in time. On the contrary, these concepts should evolve together, consistent with societal trends and technology improvements. Introducing a dynamic definition of universal service in EC legislation<sup>473</sup> that is reviewed regularly by the Commission in consultation with regulators and consumers is a flexible solution that takes account of Member States’ different approaches.

In Denmark, universal service obligations include the provision of relay and text telephone services to deaf persons, deaf-and-blind persons, and persons with impaired speech or hearing. Providers of public voice telephony must ensure that all their customers have access to the appointed universal service provider’s relay telephone services and text telephone services. Specific groups of handicapped persons may benefit from services at reduced rates. The universal service provider may implement low-usage subscriptions, in which case it is obligated to actively and regularly give guidance to individual end users as to which type of subscription is the most favourable. In France, the universal service obligations imposed on the universal service provider require special tariff schemes for certain categories of persons with low incomes or subject to a handicap. In the United Kingdom, BT has license obligations requiring it to provide a light user scheme (which entails rebates of the line rental if the phone line is not used frequently), and a limited service scheme (with low connection and rental costs, but with a bar on outgoing calls). OFTEL has made recommendations to the Secretary of State for Trade and Industry to introduce a new license condition that would place upon all telecoms operators offering fixed retail services, an obligation to provide equal access to basic telecoms services for people with disabilities.

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<sup>472</sup> Jean-Michel Hubert, the President of the French NRA, recognized, in his speech delivered at the *Semaine des Télécoms* on 1 December 1999, that the growth in the use of mobile services tends to give them the character of providing a non-statutory universal service function (primarily because of the breadth of their geographic coverage). In 1997, the contribution of mobile operators to the universal service fund was lowered in France on the condition that, *inter alia*, mobile operators improve their coverage of the French territory.

<sup>473</sup> That universal service is a dynamic concept was recognized as early as 1996 in: European Commission. Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions: Universal service for telecommunications in a fully liberalized environment – an essential element of the Information Society . COM (96) 73 final.

The Department of Trade and Industry is also currently reviewing the provision of text phones at an affordable price<sup>474</sup>.

Under Article 6 of the directive, which applies to both fixed and mobile services, subscribers have the right to have a listing in publicly available directories and to verify and, if necessary, correct or request the removal of, that entry. Directories listing all subscribers (except those who have indicated that they do not wish to be listed) must be available to users in a form approved by the NRA, whether printed or electronic, or both, and must be updated on a regular basis. Moreover, at least one directory enquiry service covering all listed subscriber numbers must be available to all users, including users of public pay telephones. Article 6 also requires that all organizations, which assign telephone numbers to subscribers, meet all reasonable requests to make available the relevant information in an agreed format on terms, which are fair, cost-oriented, and non-discriminatory.

While the scope of Article 6 does not require further amendments to cater for developments in fixed/mobile convergence, the implementation of that provision into domestic law by some Member States raises some doubts as the effectiveness of Article 6 in a converged environment. In Belgium, for example, mobile numbers are not included in publicly available directories and enquiry services<sup>475</sup>.

A policy of exclusion is not necessary to ensure the protection of privacy. Appropriate information to consumers on their rights not to be included in a directory should suffice<sup>476</sup>, and is likely to restrict significantly the scope, and thereby the utility, of directories. This will be even more important with the growth of fixed/mobile converged services and the introduction of personal numbers.

The Commission should ensure that Member States comply with the terms of Article 6 (2) of the ONP voice telephony directive, which provides that:

- ◆ Subscribers have the right to have an entry in publicly available directories.

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<sup>474</sup> OFTEL. Universal Telecommunications Services . Consultation, July 1999. The Royal National Institute for the Blind ( RNIB ) in the United Kingdom identifies the provision at affordable price of telecoms equipment adapted to visually impaired people as a major issue. In a brochure entitled *Telephones – what features do disabled people need?* , RNIB notes that, in many cases, little would be required to make telecoms equipment useful to people with disabilities.

<sup>475</sup> Article 109 (C) of the 1991 Law on the Reform of Certain Public Economic Enterprises .

<sup>476</sup> As provided for by the Data Protection Directives. See also Section 6.1.

- ◆ Directories of all subscribers who have not expressed opposition to be listed, including fixed, mobile, and personal numbers, are available to users.
- ◆ At least one telephone directory enquiry service covering all listed subscriber numbers is available to all users, including users of public pay telephones.

The exclusion of mobile numbers from public directories listings because mobile numbers are personal does not appear to be sufficient reason for failing to comply with Article 6 of the ONP voice telephony directive. Consumers always have the option of being excluded from the directory altogether; insofar as this right of exclusion is not the subject of a disproportionate fee, the privacy of a mobile subscriber can be maintained.

### Emergency Services

The widespread availability of mobile telephones has been both a benefit and a burden to the emergency services. The benefits are clear: in the event of an accident, fire, or crime, many passers-by now carry a mobile telephone and can contact the appropriate service rapidly. However, in some cases, mobile telephone users waste the time of the emergency services by making calls for help when experiencing relatively trivial problems. Under Article 9 (b) of the directive, fixed and mobile users must have free access to emergency services using the dialling code 112, as well as any other dialling codes specified by NRAs for use at national level<sup>477</sup>.

Emergency services on the 112 number can thus be reached on an EU-wide basis by mobile users using the GSM specifications, which incorporate an ETSI standard that allows users to dial emergency services without a SIM-card, i.e., cost free and without a subscriber agreement with the mobile operator in whose territory the call is made. Since access to emergency services is thereby secured, the convergence of fixed/mobile services does not appear to raise new regulatory concerns. However, the technological progress that will make fixed/mobile offers possible could be used to enhance the effectiveness of emergency services. For example, a number of companies have developed techniques that enable

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<sup>477</sup> This can also be accomplished by technical means. See, most recently: European Commission. Decision 99/645/EC of 15 September 1999 on a common technical Regulation for the attachment requirements for TETRA access to emergency service . (OJ 1999 L255/40).

operators to determine a subscriber's location quite precisely. This can be done using either a GPS receiver built into the handset or by measuring the time difference of the arrival of signals at different base stations. The former method clearly has limitations because it requires everyone to use a specialized handset. The network-based solution is preferable because it requires the use of software integrated with the network and can thus be incorporated more easily. A workshop held in May 1999 in Brussels called for the extension of regulations to include location determination for emergency calls made using mobile telephones.

The argument is all the more compelling when the following figures, based on statistics compiled in the United States, are taken into account:

- ◆ More than 50% of emergency calls will originate from a mobile handset.
- ◆ 2% of emergency calls are time-critical; for every 1000 mobile emergency calls, two lives could be saved if the caller's location is known.
- ◆ 10% of mobile callers cannot explain exactly where they are<sup>478</sup>.

In the EU, the telecommunications data and privacy protection directive<sup>479</sup> and the data protection directive<sup>480</sup> already provide for an extensive regulatory framework that addresses most of the concerns that have been expressed in the United States. It should be noted in particular that Article 7 of the data protection directive authorizes the processing of personal data where that processing is necessary "to protect the vital interests of the data subject". However, amendments to the telecommunications data and privacy protection directive may need to be adopted because the current text of Article 9 limits the power of emergency organizations (law enforcement agencies, ambulance services, and fire brigades) to override a

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<sup>478</sup> In the United States, the FCC has mandated that mobile operators be able to determine the location of a mobile 911 call (911 being the American equivalent of the European 112 number) within a range of 100 feet (approximately thirty metres) by October 2001. This obligation is to be read in conjunction with the 1999 Wireless Communications and Public Safety Act, which prohibits the use of location information for purposes other than emergencies without the express and prior authorization of the subscriber. However, concerns have been expressed that this prohibition is couched in language which is too broad to effectively protect subscribers from the misuse of private information, and it has been suggested that users should be able to turn off the tracking device at the push of a button.

<sup>479</sup> European Parliament and European Council. Directive 97/66/EC of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector. (OJ 1998 L24/1).

<sup>480</sup> European Parliament and European Council. Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data. (OJ 1995 L281/31).

limitation on access to location information only with respect to calling line identification services.

Another major issue is the question of who should pay for the implementation of emergency location-based services<sup>481</sup>. Both mobile networks and handsets will require upgrading, but it is also likely that the call centres used by emergency organizations will need to be adapted in order to receive and use this information.

To ensure location-based emergency services, amendments to the current regulatory framework may be needed, especially in the context of data protection rules. The question of who (i.e., the state authorities or the operators) should bear the cost of providing location-based emergency services needs to be addressed by the European Commission and the Member States in consultation.

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<sup>481</sup> European Commission DG XIII. Report on the Workshop on policy and regulatory issues for location-based systems and services . 10 May 1999.

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**Chapter 6.4**

**Summary**

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Chapter 6 discussed the changeover from sector-specific regulation to the application of competition rules. It focussed, in particular, on the concept of significant market power (SMP).

It tried to show that the scope of the relevant product and service markets vary among the different Member States, which is why the Commission needs to balance against the application of subsidiarity, the need for greater certainty. The reason for this is, of course, that otherwise the divergent approaches could distort the markets, with market power measured differently at the national level.

Chapter 6 argued that whatever market definition is adopted in the converged environment, it will only be those mobile operators that are owned by the incumbent fixed operators that can be dominant in such a market. However, this dominance is not gained from the possible market share, but from the strategic influence which that operator can, or will have, over competition in the mobile sector.

Chapter 7 will now focus on the application of the general competition rules in this converged market of fixed and mobile services.

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**Chapter 7**

**The Application of Competition Rules in a Converged  
Environment**

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The speed and scope of the transition from ex ante sector-specific regulation to the ex post application of competition rules will depend largely on the extent to which competition rules can adapt traditional analytical tools to the structural and behavioural challenges of technological and commercial convergence in the fixed and mobile sectors. In this part of the study, the extent to which existing European Court jurisprudence and Commission administrative practice can effectively address actual and potential market failure in a converged fixed/mobile environment, is examined. To this end, the following key issues are examined.

A key issue will be what types of abusive behaviour occur as a result of fixed/mobile convergence, and whether these specific types of abuse are susceptible to control under competition rules. Primarily, the integration of fixed and mobile services will bring greater potential for the bundling of services and the subsequent lack of transparency in commercial dealings, which may require the introduction of a series of structural ex ante obligations in order for anti-competitive practices to be capable of detection, or even to be prevented from occurring. Given the privileged market position of fixed incumbent operators, there is a question whether they are under an obligation of prior disclosure to competitors before they introduce fixed/mobile integrated packages and pricing schemes for such packages.

As a result of the future convergence of mobile and fixed terminal equipment, which may act as a gateway for the Internet and other content-rich applications, it is arguable that certain competition law remedies may be required to ensure the openness of such gateways.

With the growing number of new entrants in the fixed sector seeking to forge alliances with a limited number of mobile operators in order to provide integrated fixed/mobile service offerings, competition rules will need to be applied to determine which types of exclusive relationships will be accepted or refused.

### **Applying the Essential Facilities Doctrine**

In light of the Judgment of the European Court of Justice in *Oscar Bronner v. Mediaprint*, it is arguable that the essential facilities doctrine (a key legal element which would otherwise need to be satisfied, if access requests to dominant operators over all forms of infrastructure were to be mandated) may be more difficult to apply. It is therefore foreseeable that ex ante sector specific regulation may continue to be necessary to regulate

certain types of access issues, as competition rules may not always be able to produce satisfactory results of themselves.

The essential facilities doctrine emerged from the general obligation to deal imposed on dominant undertakings under Article 82 EC. The starting point for the development of the essential facilities doctrine under EC law was the recognition of the freedom to contract in early competition cases, such as *Volvo and Renault*<sup>482</sup>.

At this point it might be useful to discuss the essential facilities doctrine in the USA. The doctrine was inspired from developments in US law, so some attention should be given to the evolution of US law. As previously established, there are differences between EU and US competition laws. The doctrine in Europe is associated with Article 82 EC. The attention should therefore be on the in the corresponding provision in US law, namely the Sherman Act, s. 2<sup>483</sup>.

Conclusively, as said by Professor Eleanor Fox<sup>484</sup>:

Principally, US antitrust law proscribes only that which artificially lowers output and raises price (with a few exceptions); even a dominant firm has the right to compete hard and may do so even if it excludes competitors. EC competition law, among other things, protects small and middle-sized business firms from unfair exclusions and has a broader sweep against abusive practices.

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<sup>482</sup> Case 238/87, *Volvo v. Veng* [1988] ECR 6211; and *Consorzio italiano della componentistica di ricambio per autoveicoli (CICRA)* and Case 53/87, *Maxicar v. Renault* [1988] ECR 6039. At para. 16 of *Maxicar v. Renault*, the Court of Justice held that the exercise of an exclusive right could be prohibited where a dominant firm holds the exclusive right. The Court cited three cases as examples of potentially abusive behaviour in the context of a refusal to deal: (1) an arbitrary refusal to deliver spare parts to independent repairers; (2) the fixing of prices for spare parts at an unfair level; or (3) a decision no longer to produce spare parts for a particular model even though many cars of that model remain in circulation (provided that such conduct is liable to affect trade between Member States).

<sup>483</sup> Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of trade or commerce among the several states, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$ 10,000,000 if a corporation, or, if any other person \$ 350,000, or by imprisonment not exceeding three years, or by both said punishment, in the discretion of the Court. 15 USC § 2.

<sup>484</sup> See: E.M. Fox, *Toward World Antitrust and Market Access*. 1997. In this work, Professor Fox refers to mainly two articles, where the divergence between Article 82 EC and s.2 of the Sherman Act are studied. The two articles are: P. Jebsen and R. Stevens, *Assumptions, Goals and Dominant Undertakings: The Regulation of competition under Article 86 of the European Union*. (64 *Antitrust LJ* 443). 1996; and E.M. Fox. *Monopolization and Dominance in the United States and the European Community*. *Notre Dame Law Review* 981. 1996. See also the good work of: J. Temple Lang, *Defining Legitimate Competition: Companies Duties to Supply Competitors and Access to Essential Facilities*. *Fordham Law Journal* 437. 1994. 521.

In relationships between holders of a dominant position and their competitors, Article 82 prohibits refusals to supply under certain circumstances while under US law, undertakings in a dominant position enjoy in principle the same freedom to deal as others.

Inroads were gradually made into the rule of freedom of contract, firstly, in relation to refusals by dominant undertakings to supply dependent customers<sup>485</sup>, and secondly, in relation to refusals by dominant undertakings to supply new customers<sup>486</sup>. It was these developments that supported the emergence of the essential facilities doctrine, to which the Commission expressly referred in its far-reaching decision in B&I/Sealink<sup>487</sup>. In that case, the Commission decided as follows:

A dominant undertaking which owns and controls and itself uses an essential facility (i.e., a facility or infrastructure without access to which competitors cannot provide services to their customers), and which refuses competitors access to that facility or grants access to competitors only on terms less favourable than those which it gives its own services, thereby placing the competitors at a competitive disadvantage, infringes Article 82.

The owner of an essential facility, which also uses the essential facility, may not impose a competitive disadvantage on its competitor, also a user of the essential facility. "...That is

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<sup>485</sup> In *Commercial Solvents*, the Court of Justice held that an undertaking which has a dominant position in the market in raw material and which, with the object of reserving such raw materials for manufacturing its own derivatives, refuses to supply a customer, which is itself a manufacturer of such derivatives, and therefore risks eliminating all competition on the part of this customer, is abusing its dominant position... Joined Cases 6&7/73, *Commercial Solvents v. Commission* [1974] ECR 223. This view was upheld by the Commission in such cases as: Case 22/78, *Hugin Kassaregister and Hugin Cash Register v. Commission* [1979] ECR 1869, and by the Court of Justice in such cases as: Case 27/76, *United Brands v. Commission* [1978] ECR 207, and Case 311/84, *Télémarketing* [1985] ECR 3261.

<sup>486</sup> In *Magill*, the court held that refusal by the owner of an intellectual property right to grant a copyright license, even if it is the act of an undertaking holding a dominant position, cannot of itself constitute an abuse of a dominant position, but that the exercise of an exclusive right by the proprietor may, in exceptional circumstances, involve an abuse. In *Magill*, the Court found such exceptional circumstances in the fact that the refusal in question concerned information concerning the weekly schedules of certain television channels, the supply of which was indispensable for carrying on the business of publishing a general television guide. See for example: European Commission. Decision 89/589 of 4 November 1988, *London European/Sabena*. (OJ 1988 L317/47); European Commission. Decision 89/205 of 21 December 1988, *Magill v. BBC, RTE and ITI*. (OJ 1989 L78/43); and European Commission. Decision 92/213 of 25 February 1992, *British Midland Aer Lingus*. (OJ 1992 L96/34).

<sup>487</sup> The essence of this complaint was that Sealink, a car ferry operator which was also the owner of Hollyhead Harbour, intended to introduce a timetable which would seriously disrupt the scheduled services of B&I, a competing car ferry operator using Hollyhead Harbour, by causing two Sealink vessels to pass while the B&I ferry was berthed at the harbour, thereby in turn preventing the loading or discharging of vehicles and passengers. European Commission. Decision of 11 June 1992, *B&I Line v. Sealink Harbours Ltd. and Sealink Stena Ltd.* (C.M.L.R. 255). 1992.

so even if [the owner's] actions make, or are primarily intended to make its operations more efficient. Subject to any objective elements outside its control, such an undertaking is under a duty not to impose a competitive disadvantage ... without objective justification".

This doctrine was further developed in the *Ladbroke* case<sup>488</sup>, and its application appears to have reached its outer limits in a case concerning the Society for World-wide Interbank Financial Telecommunications s.c. (S.W.I.F.T.)<sup>489</sup>. S.W.I.F.T. operates a specific international telecoms network, which offers data communications and processing to financial institutions worldwide. Following a complaint by La Poste that S.W.I.F.T. had refused access to its network on the ground that La Poste was not a bank, the Commission concluded that S.W.I.F.T. held a monopolistic position in the market for international payment networks and was, therefore, an essential facility. Although it settled the case, S.W.I.F.T. maintained that it did not constitute such an essential facility, as alternative networks were available; the exclusion of La Poste had no appreciable effect on the structure of competition in the French banking sector, and La Poste already competed on the banking and fund transfer market in France without having access to S.W.I.F.T.'s network.

### Post-Access Notice

Following the adoption of the access notice in August 1998, the Commission sought to outline the precise scope of the doctrine of essential facilities in the particular context of the telecoms sector. Specifically, the access notice provides that a dominant access provider will be obliged to provide access to a service provider where no other service provider has been given access by the access provider to operate on that services market, and access to this facility is essential.

In determining whether a particular network infrastructure constitutes an essential facility, the access notice acknowledges that it must be "generally essential in order for

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<sup>488</sup> Case T-504/93, *Tierce Ladbroke SA v. Commission* [1997] ECR I-923, where the Court of First Instance determined that a refusal by PMU to allow Ladbroke access to television pictures of French horse races that were available only from PMU, and that were not broadcast in Belgium, in order to broadcast them in its Belgian betting shops, could not fall within Article 82. In particular, the Court determined that access to the televised broadcasts of horse races was not indispensable to Ladbroke.

<sup>489</sup> This case is not reported, however, its commented on by: J. Usher, *The Law of Money and Financial Services in the European Community*. (Oxford: EC Law, 1999). 71.

companies to compete” on the related market and that the “refusal of access must lead to the proposed activities being made either impossible or seriously and unavoidably uneconomic”. In addition, it is necessary to satisfy the following elements before access on this basis is mandated:

- ◆ The network operator from whom access is sought must have sufficient capacity to satisfy the request<sup>490</sup>.
- ◆ The refusal to grant access must amount to a restriction of competition, a failure to meet demand or an attempt to block the emergence of new service.
- ◆ Access must be offered at a reasonable price and on non-discriminatory terms and conditions; and there must be no objective justifications for the refusal.

In its first express reference since the adoption of the access notice to the doctrine of essential facilities, the Court of First Instance in *European Night Services*<sup>491</sup> reviewed a Commission decision to exempt a joint venture between several national railway operators and Eurostar to provide overnight passenger rail services between points in the United Kingdom and the Continent through the Channel Tunnel. The Commission had exempted the agreements for a period of eight years but required that services be made available to the joint venture’s competitors on the same terms as the joint venture, including access to locomotive, train crew and paths on each national network and in the Channel Tunnel, all of which the Commission considered to be essential facilities.

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<sup>490</sup> The lack of any comments on capacity limitations by the telecoms industry during the extensive consultation process for the Access Notice suggests that this is generally not seen to be a realistic problem in the fixed telecoms sector. Any concerns, which may arise in this regard, would appear to be limited to particular capacity concerns stemming from issues such as collocation rather than with respect to transmission capacity or other transmission elements. In any event, the Access Notice suggests that, in the event that capacity is insufficient to cover all requests for access, the infrastructure owner is obliged to ration access according to transparent and objective criteria. Indeed, this approach would appear to be consistent with the approach mandated in the Interconnection Directive, which provides that any conditions for interconnection relating to the protection of network integrity must be proportionate and non-discriminatory in nature, and based on objective criteria identified in advance. It must not give any preference in that regard to its own telecoms services. If necessary, it may need to reduce its own use of capacity in order to allow other operators a fair share. See, in particular: Kevin Coates, DG IV, EU Competition Rules and Access Problems in the Telecoms Sector. International Business Lawyer. July/August 1997.

<sup>491</sup> Joined Cases T-374/94, T-375/94, T-384/94, *European Night Services Ltd. (ENS) v. Commission* [1988] ECR II-3141.

On appeal, with respect to the interpretation of an essential facility, the Court of First Instance stated:

...the Court considers that neither the parent undertaking nor the joint venture thus set up may be regarded as being in possession of infrastructure, products or services which are “necessary” or “essential” for entry to the relevant market unless such infrastructure, products or services were not “interchangeable” and unless, by reason of their special characteristics – in particular the prohibitive cost of and/or time reasonably required for reproducing them – there are no viable alternatives available to potential competitors of the joint venture, which are thereby excluded from the market.

In applying this test, the Court held that the Commission could not treat the supply of train tracks, special locomotives, and crews to the joint venture by its parent undertakings as necessary or essential services, on the grounds that it could not be accepted that a possible refusal to supply the joint venture’s competitors with special locomotives for the Channel Tunnel would have the effect of excluding such competitors from either penetrating the relevant market or continuing to operate on it. In particular, the Commission had not demonstrated why the joint venture, which had such a small market share (i.e., between 5 to 8% of the total market for the transport of business travellers for whom scheduled air travel, high-speed rail travel, and the rail services to be operated by ENS are interchangeable modes of transport), could have any influence whatsoever on the functioning or structure of the markets in question<sup>492</sup>.

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<sup>492</sup> However, the Court noted that a refusal to supply access could possibly have an effect on competition had the Commission determined the railway operators to be dominant on a different market (i.e., the market for business and leisure travel). This appears to be consistent with the terms of the Access Notice, which provides in respect of access to a facility deemed to be essential, that it would be insufficient to demonstrate that one competitor needed access to a facility in order to compete in the downstream market. It would be necessary to demonstrate that access is necessary for all except exceptional competitors in order for access to be made compulsory. See, fn 67 of the Access Notice.

In any event, the Commission's analysis failed to demonstrate that competitors could not obtain the locomotives in question either directly from manufacturers or indirectly by renting them from other undertakings<sup>493</sup>.

The approach taken by the Court of First Instance in *European Night Services* was also supported by the Court of Justice in *Oscar Bronner v. Mediaprint*<sup>494</sup>. Bronner alleged that the Mediaprint group was abusing its de facto dominant position in Austria on the market for home-delivery schemes, by not allowing Bronner access to its nation-wide home delivery service for daily newspapers against payment of reasonable remuneration. While there were a number of regional or local networks used to deliver newspapers and periodicals, Mediaprint's network was the only nation-wide network. In support of its claim, Bronner argued that services such as postal delivery did not represent equivalent alternatives to home delivery, as delivery to the subscriber in the early morning hours could not be guaranteed by such means. In addition, Bronner argued that it would be entirely unprofitable for it to organize its own home delivery service in view of its small number of subscribers. Accordingly, Bronner alleged that Mediaprint's network was an essential facility for the purposes of EC competition rules.

Even if there were only one nation-wide home delivery network in Austria and the owner of that scheme held a dominant position in the market for newspaper distribution services, the Court of Justice held that these factors were not sufficient to determine that the refusal to grant access amounted to an abuse. On the basis that the case law on the abusive exercise of intellectual property rights was applicable to the exercise of any property right (relying on *Magill*), the existence of an abuse where there is an alleged essential facility is based on the following preconditions:

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<sup>493</sup> In a similar manner, the Access Notice states in relation to an essential facility that if there were no commercially feasible alternatives to the access requested, then unless access is granted, the party requesting access would not be able to operate on the service market. Indeed, the Reference Paper (the WTO Reference Paper) attached to the schedule of specific commitments of the Community and the Member States annexed to the Fourth Protocol to the General Agreement on Trade in Services (GATS, but now known as the World Trade Organization) defines an essential facility as meaning facilities of a public telecommunications transport network and service that: ... (b) cannot feasibly be economically or technically substituted in order to provide a service.

<sup>494</sup> Case C-7/97, *Oscar Bronner v. Mediaprint Zeitungs- und Zeitschriftenverlag* [1998] ECR I-7791.

- ◆ The “refusal of the service comprised in home delivery must be likely to eliminate all competition in the daily newspaper market [i.e., downstream market] on the part of the person requesting the service”.
- ◆ The refusal to allow access to the network must “be incapable of being objectively justified”.
- ◆ The service in itself must be indispensable to carrying out that person’s business, inasmuch as there is no actual or potential substitute in existence for that home-delivery scheme”<sup>495</sup>.

In his opinion, Advocate General Jacobs added that “the mere fact by retaining a facility for its own use a dominant undertaking retains an advantage over a competitor cannot justify requiring access to it”<sup>496</sup>. This approach appears on first review to be much more limited in its scope than the equivalent test set forth in the WTO Reference Paper, to which the European Community is legally committed. The WTO Reference Paper leaves open the possibility of essential facilities being controlled by a limited number of undertakings in the telecoms sector. Specifically, the WTO Reference Paper defines essential facilities as “facilities of a public telecommunications transport network or service that: ...are exclusively or predominantly provided by a single or limited number of suppliers (emphasis added)”. As regards realistic potential alternatives, the Court stated that, “It does not appear that there are any technical, legal or even economic obstacles capable of making it impossible, or even unreasonably difficult, for any other publisher of daily newspapers to establish, alone or in cooperation with other publishers, its own nationwide home delivery scheme and use it to distribute its own daily newspapers.”.

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<sup>495</sup> In *Magill*, such exceptional circumstances included the fact that the refusal in question, inter alia: (i) prevented the emergence of a new product for which there was potential consumer demand; (ii) was not justified by objective considerations; and (iii) was likely to exclude all competition in the secondary market for television guides.

<sup>496</sup> This requirement appears to be at odds with both the Opinion of the Advocate General (which the Court is not bound to uphold) and the terms of the Access Notice. Specifically, Advocate General Jacobs reiterates the principle that it is important not to lose sight of the fact that the primary purpose of Article 86 is to prevent distortion of competition – and in particular to safeguard the interests of consumers – rather than to protect the position of particular competitors. In addition, footnote 67 to the Access Notice provides in relation to the essential facilities doctrine that it would be insufficient to demonstrate that one competitor needed access to a facility in order to compete in the downstream market. It would be necessary to demonstrate that access is necessary for all except exceptional competitors in order for access to be made compulsory. The Court of Justice, on the other hand, refers to all competition on the part of any given competitor.



The Court added that it was not sufficient to argue that such potential alternatives were not economically viable by reason of the small circulation of the daily newspaper(s) to be distributed. Rather, it would be necessary to demonstrate that it was not economically viable to create a second home delivery scheme with a circulation comparable to that of the daily newspapers distributed under by the existing scheme (i.e., on the same scale as the existing network). In this regard, Advocate General Jacobs pointed out that:

It would be necessary to establish that the level of investment required to set up a nation-wide home distribution system would be such as to deter an enterprising publisher who was convinced that there was a market for another large daily newspaper from entering the market. It may well be uneconomic as Bronner suggests, establishing a nation-wide system for a newspaper with a low circulation. In the short term, therefore, losses might be anticipated, requiring a certain level of investment. But the purpose of establishing a competing nation-wide network would be to allow it to compete on equal terms with Mediaprint's newspapers and substantially to increase geographical coverage and circulation.

While not referred to in the Court's judgment, the opinion of the Advocate General also notes that the spectacular growth of Brunner's publication hardly seemed consistent with the view that Mediaprint's home delivery system was essential for it to compete on the newspaper market<sup>497</sup>.

### **Applicability of the Essential Facilities Doctrine to the Telecommunications Sector**

Following *Oscar Bronner v. Mediaprint and European Night Services*, the legal standard of proof appears to have been significantly raised for a party alleging that a facility is truly essential under EU competition rules. Indeed, it appears that both the Commission and the Courts have recently adopted a much more cautious approach on this issue than they have historically.

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<sup>497</sup> This factor would also apply to an examination of whether the refusal of the service comprised in home delivery be likely to eliminate all competition in the daily newspaper market on the part of the person requesting the service, as noted above. It is questionable whether Bronner would have enjoyed even greater growth had it had access to a nation-wide home delivery scheme. Indeed, it is arguable that such access would not have allowed it to achieve comparable market shares to Mediaprint in the downstream newspaper market.

The adoption of a higher standard by the Court to prove the existence of an essential facility, thereby taking into consideration the legitimate business interests of the access provider, is likely to have a significant impact on the telecoms sector, where the costs of rolling out, maintaining, and operating networks are substantial. In this regard, the Commission's practice in the period prior to the adoption of the access notice did not leave much scope for accounting for the legitimate business interests of holders of telecoms facilities in downstream markets, and had been criticized for seeking to protect competitors, rather than competition. It has also been argued that it tended to discourage investment in such access facilities<sup>498</sup>. In restricting the scope of the essential facilities doctrine, *Oscar Bronner v. Mediaprint* and the access notice entail an assessment of the effects on investment in the longer term, i.e., that the level of investment required for network rollout and the overall effect on competition are legitimate objects of review<sup>499</sup>.

It is worthwhile noting Advocate General Jacobs in this regard:

The justification in terms of competition policy for interfering with a dominant undertaking's freedom to contract requires a careful balance of conflicting considerations. In the long term it is generally pro-competitive and in the interest of consumers to allow a company to retain for its own use facilities, which it has developed for the purpose of its business.

...For example, if access to a production, purchasing, or distribution facility were allowed too easily there would be no incentive for a competitor to develop competing facilities. Thus while competition was increased in the short term it would be reduced in the long term. Moreover, the incentive for a dominant undertaking to invest in efficient facilities would be reduced if its competitors were, upon request, able to share the benefits<sup>500</sup>.

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<sup>498</sup> See, for example: D. Ridyard, *Essential Facilities and the Obligation to Supply Competitors under UK and EC Competition Law*. 8 E.C.L.R. 438. 1996.

<sup>499</sup> In the Access Notice, it is expressly recognized that it may be necessary for new market entrants to recoup their investment before being required to provide access. Consequently, at para. 91 it is stated that, Relevant justification [to provide access] could include...the need for a facility owner which has undertaken investment aimed at the introduction of a new product or service to have sufficient time and opportunity to use the facility in order to place that new product or service on the market.

<sup>500</sup> Any such analysis in the telecoms sector will of course be required to take account of the progress of liberalization in the relevant market. In light of the industry structure and regulation of the telecoms sector in any given Member State, such an analysis would need to take into account whether the NRA in each case favoured the development of a services or infrastructure competitive model.

While the Advocate General, followed by the Court, rejected the application of the essential facilities doctrine in cases where control of the facility merely gives its holder a competitive advantage, neither the Court nor the Advocate General ruled out the possibility of applying the essential facilities doctrine in individual cases. In particular, the opinion of the Advocate General does not rule out the possibility that the costs of replicating a facility may be so high that they amount to an insurmountable barrier to entry, because they allow the access provider to have a “genuine stranglehold on the related market”. In this regard, he refers to situations where the “duplication of the facility is impossible or extremely difficult owing to physical, geographical or legal constraints or is highly undesirable for reasons of public policy”.

Following recent case law, it is clear that, in the absence of exceptional circumstances, the doctrine of essential facilities cannot be relied on as the sole or principal tool to regulate ex post interconnection and access relationships in the telecoms sector. But to the extent that a number of key observations of the Advocate-General in *Oscar Bronner v. Mediaprint* are followed by the Court in future proceedings or amplified by the Commission in its future administrative practice, the doctrine of essential facilities may still play an important role in the telecoms sector. In particular, in the fixed/mobile context it is conceivable that an operator with a “genuine stranglehold on a related market”<sup>501</sup> can be found to have control of an essential facility to which access is sought; and incumbent fixed operators, which have benefited from a monopoly regime and network expansion funded by the state, can be considered to control an essential facility. In light of these significant exceptions to the test in *Oscar Bronner v. Mediaprint*, it is arguable that the doctrine of essential facilities continues to have resilience in the telecoms sector, and will be able to address many types of anti-competitive behaviour by operators with dominance.

Realistically, the doctrine of essential facilities is unlikely to be used to attack a particular form of refusal to deal in the absence of other grounds of legal challenge. The doctrine of non-discrimination, the obligation of dominant operators to provide unbundled access, the dependence of operators on an entity currently providing them with access which might be denied in the future, and the denial of access to parties seeking to vertically integrate their operations, are all grounds on which a challenge to a denial of access are likely to be based

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<sup>501</sup> For example, a mobile market when compared to a fixed market.

(with greater chance of success than a claim relying solely on the doctrine of essential facilities). Consequently, practice suggests that any perceived negative effect of Oscar Bronner v. Mediaprint case should not be exaggerated by regulators.

### **Collective Dominance and Oligopolistic Markets**

Traditionally, Article 81 has been considered to be an inadequate enforcement tool to address anti-competitive issues arising from oligopolistic market structures<sup>502</sup>. It is arguable that the legal standard necessary for a finding of collective dominance is so high that there may be a continuing need for sector-specific ex ante regulation in sectors characterized by a relatively small number of market actors (e.g., the mobile sector).

Dominance may not only be found to exist in respect of a single entity, but may also be held to exist collectively in conjunction with other competitors. In a mobile sector characterized by few players, the potential application of this doctrine may have a significant impact on the effect of competition rules in a fixed/mobile converged environment. However, this concept, described as collective dominance or joint dominance, appears to be still very much in its developmental phase, in particular as there appears to be a clear divergence in the case law between Article 82 case law and cases decided under the merger regulation.

### **Approach under Article 82**

According to the case law of the European Court concerning Article 82, undertakings that have links between themselves that allow them to present themselves on the market as a single, integrated undertaking can be judged to be collectively dominant. In Municipality of

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<sup>502</sup> See, for example: B. J. Rodger, Oligopolistic Market Failure: Collective Dominance versus Complex Monopoly, *European Competition Law Review*, 1995:1. 21-29.; J. Briones, Oligopolistic Dominance: Is there a Common Approach in Different Jurisdictions? A Review of Decisions Adopted by the Commission under the Merger Regulation, *European Competition Law Review*, 1995:6. 334-347; B. J. Rodger, Market Integration and the Development of European Competition Policy to Meet New Demands: A Study of the Control of Oligopolistic Markets and the Concept of a Collective Dominant Position Under Article [82] of the EC, *Legal Issues of European Integration*, 1994: Vol. 2. 1-26; R. Smith and D. Round, Competition Assessment and Strategic Behaviour, *European Competition Law Review*, 1998. 225-236.

*Almelo v. Energiebedrijf Ijsselmij NV*<sup>503</sup>, a case concerning regional electricity distributors in The Netherlands, the Court of Justice determined that a collective dominant position could exist where the undertakings holding that dominant position were linked in such a way that they adopted the same conduct on the relevant market. This was confirmed by the Court in *Centro Servizi Spediporto Srl v. Spedizioni Marittima del Golfo Srl*<sup>504</sup>, where the Court added that the links between the undertakings in the group, which caused them to adopt the same conduct on the market, also implied that there was no competition between them<sup>505</sup>. These cases preceded *Compagnie Maritimes Belges Transports SA and Others v. Commission*<sup>506</sup>, where the Court of First Instance, upholding a Commission Decision, stated that, “as a result of the close relations which shipping companies maintain with each other within a liner conference, they are capable together of implementing in common on the relevant market practices such as to constitute unilateral conduct. Such conduct may involve infringements of Article 86 if the other requirements for the application of that provision are also met.”

The Court of Justice’s judgment in *Bagnasco and Others v. Banca Popolare di Novara* and another case<sup>507</sup> provides additional guidance in this respect. This case concerned a Commission decision rejecting an allegation that several Italian banks could be considered to be collectively dominant, simply by virtue of the fact of their membership in the Italian Banking Association (the ABI), in which almost all Italian banks were members. The Advocate General supported the Commission’s view<sup>508</sup>, concluding:

In my opinion, the banks belonging to the ABI do not hold a collective dominant position on the Italian banking market, because membership of that association does not create between the various banking institutions economic links which are so close as to cause them to adopt the same commercial strategy. Membership of the ABI does not preclude the banks belonging to it from trading on the market individually. ABI members present themselves on the market as undertakings pursuing independent commercial strategies which are the same only as regards those

<sup>503</sup> Case C-393/92, *Centro Servizi Spediporto Srl v. Spedizioni Marittima del Golfo Srl* [1994] ECR I-1477.

<sup>504</sup> Case C-96/94, *Bagnasco and Others v. Banca Popolare di Novara* [1995] ECR I-2883.

<sup>505</sup> This last requirement appears to be supported by several authors. See, for example: J. Temple Lang, *European Union Law-Managing Economic Change*. S. Roche & Temperley.

<sup>506</sup> Joined Cases T-24/93 to T-26/93 and T-28/93, [1996] ECR II-1201.

<sup>507</sup> Joined Cases C-215/96 and C-216/96, [1999] ECR I-135.

<sup>508</sup> The Court did not refer to this aspect of the case in its judgment.

services in respect of which ABI has adopted a decision restrictive of competition which is followed by all its members and which falls within the scope of Article 81 EC. If the view is taken that the members of the ABI hold a collective dominant position, the same could be said of all professional associations in a particular economic sector, and the decisions adopted by those associations could in all cases be assessed on the basis of Article 81. This would give rise to a systematic recycling of the facts constituting an infringement of Article 81 whenever there was possibility of Article 82 being applied on grounds of abuse of a collective dominant position. In this connection, I think there is a clear difference between the degree of integration among the undertakings belonging to a professional association such as the ABI and that among the undertakings forming a shipping conference. The latter may hold a collective dominant position, as the Court of Justice and the Court of First Instance have recognized, because, in relation to customer, they present themselves on the market as one and the same entity. Undertakings belonging to a professional association, on the other hand, do not act on the market as an integrated entity.

Therefore, it seems that the following factors must be present in order to sustain the existence of a collective dominant position under Article 82 EC:

- ◆ The economic links between two or more undertakings are so close as to cause them to adopt the same commercial strategy, thereby presenting themselves to customers on the market as being one and the same entity or an integrated entity.
- ◆ The undertakings are, collectively, free from effective competition, in accordance with the criteria, which have been developed for single dominant undertakings, and there is no significant competition between the companies in question.

Oligopoly simply refers to a small number of participants on a relevant market<sup>509</sup>. A tight oligopoly refers to the situation where market participants are few and interdependent with one other to a lesser or greater extent. Such interdependence is not the result of any collusion, but is the result of the particular characteristics of the market in question, namely, that if any participant were to adopt a particular commercial strategy, the other participants in the market would react in a similar manner, more or less immediately. Accordingly, in such an environment, it is difficult to gain a competitive advantage. Unlike collective dominance,

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<sup>509</sup> The Court of Justice has ruled that Article 82 EC cannot apply to oligopolistic scenarios.

however, the parallel conduct in question is carried out by independent undertakings, acting in the absence of agreement or collusive behaviour between them<sup>510</sup>.

### Approach under the Merger Regulation

In *France & Others v. Commission*<sup>511</sup>, the Court of Justice confirmed that the Commission may adopt preventative measures under the merger regulation with respect to a concentration, which could create or strengthen a collective dominant position as a result of which effective competition would be significantly impeded within the common market. In particular, the Court stated:

In the case of an alleged collective dominant position [in the context of the merger regulation], the Commission is therefore obliged to assess, using a prospective analysis of the reference market, whether the concentration which has been referred to it leads to a situation in which effective competition in the relevant market is significantly impeded by the undertakings involved in the concentration and one or more undertakings which together, in particular because of correlative factors which exist between them, are able to adopt a common policy on the market and act to a considerable extent independently of their competitors, their customers, and also of consumers.

In this case, the Court of Justice relied upon a number of structural links between the merging undertakings, Kali und Salz GmbH and Mitteldeutsche Kali AG and Société Commerciale des Potasses et de l'Azote (SCPA), in order to determine that the merger would create a position of collective dominance on the market for potash-salt-based products for agricultural use in the EU (with the exception of Germany). Such structural links included the fact that both were members of the same export cartel, and that they had privileged product distribution links with each other. Despite consideration of the structural links between the parties in *France & Others v. Commission*, the necessity of identifying such structural links has been largely ignored by the Court of First Instance in a subsequent case,

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<sup>510</sup> Case 85/76, *Hoffman - La Roche & Co AB v. Commission* [1979] ECR 461.

<sup>511</sup> Joined Cases C-68/94 and C-30/95, *France & Others v. Commission* [1998] ECR I-1375.

*Gencor Ltd v. Commission*<sup>512</sup>. In this case, consistent with the sweeping language used in the access notice, the Court of First Instance held that the existence of structural links was only an example of the situation in which a collective dominant position may exist, but not a legal precondition for the existence of such a position, nor was it the case that the links in question needed to be structural rather than simply economic. In addition, the following factors were considered by the Court in its examination of whether the parties, which operate in the international platinum mining market, had a collectively dominant position: high concentration levels, stable and symmetric market shares<sup>513</sup>; similarity of cost structures; stagnant demand and few growth prospects; inelastic demand; transparent pricing; homogenous products; and low levels of technological innovation. Ultimately, the Court of Justice implied that no structural links are necessary to establish joint dominance under the merger regulation, although they may be highly relevant<sup>514</sup>.

The Court of Justice appears to have adopted a slightly alternative approach when examining collective dominance under the merger regulation, adopted under Article 82 EC. This may be justified to a certain extent by the different policy objectives pursued by these two legal instruments. Article 82 is an instrument for dealing with abusive conduct on relevant product and geographic markets, whereas the merger regulation is more concerned with the effect of a merger on market structure in those markets. Whether the two emerging legal standards will, over time, merge may be decided by the Court of Justice in the pending Article 82 EC case of *Compagnie Maritime Belge*<sup>515</sup>. In the *Gencor/Lohrno* case, the findings of the Court on collective dominance were not limited to the merger regulation, but also apply by implication to abusive practices falling within the scope of Article 82.

There are two elements of the decision that distinguish the case from the earlier cases. Firstly, the post-merger oligopoly would have had three (as opposed to only two) members.

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<sup>512</sup> Case T-102/96, *Gencor Ltd v. Commission*, [25 March 1999] Not yet published.

<sup>513</sup> In Joined Cases C-68/94 and C-30/95, *France and Others v. Commission* [1998] ECR I-1375, the Court of Justice noted that a market share of 60% cannot of itself point conclusively to the existence of a collective dominant position on the part of the undertakings concerned.

<sup>514</sup> See para. 273. As Professor Korah notes, as a result of the judgment, the need for links to establish joint dominance becomes of minor importance; see V. Korah, *Gencor Ltd v. Commission: Collective Dominance*, *European Competition Law Review*, 1999, 337-341.

<sup>515</sup> Case C-395/96P, *Compagnie Maritime Belge v. Commission*, Opinion of the Advocate General dated 29 October 1998.



Secondly, the nature of the products involved and the history of competition on the market was critical.

In the telecoms sector, the Commission indicated in *Vodafone/AirTouch*, Case No. IV/M. 1430, that, unless the merged entity divested one of its joint controlling interests in the third German mobile operator, its joint control of the largest mobile operator in Germany would have created a duopolistic market situation.

Until recently, there existed an enforcement gap in the extent to which traditional competition rules under Articles 81 and 82 EC could address particular types of market failure in highly concentrated parts of the communications sector. Recent case law in the context of mergers, however, suggests that the traditional evidentiary burdens for establishing collective dominance have been largely dismantled because: (i) there are no formal links which need to be established between competitors to establish collective dominance (*Gencor*) and (ii) a merger creating an oligopoly situation in an apparently historically dynamic consumer market may be deemed to be anti-competitive (*Airtours*). The net effect of these recent cases may be that certain concentrated markets within network industries, such as those found in the communications sector, may fall afoul of this expansive view of collective dominance under the merger regulation. Moreover, it appears that the logic of this case law when reviewing competitive structure under the merger regulation might also be extended under Article 82 EC to the assessment of abusive practices.

The application of the doctrine of collective dominance, in its current form, is perhaps not appropriate in a dynamic market such as the telecoms sector. Mere pricing parallelism in a concentrated but expanding market need not be indicative of collusive behaviour. Nor does high pricing in a particular part of the value chain by all market actors necessarily amount to tacit collusion. Conduct of this type in the telecoms sector may be the result of only transient or residual market failure or the existence of some other form of bottleneck service or network infrastructure. In these situations, it would be more appropriate to deal with a lack of price elasticity or high prices by targeted regulatory intervention which addresses market failure, rather than relying on the doctrine of collective dominance. The doctrine of collective dominance is ill equipped to address the high level of competition which exists across the sector.

If fixed/mobile convergence leads to a situation where the restrictive practices of certain operators, such as those controlling essential technologies for handsets, effectively

reduce overall competition and innovation (i.e., become a bottleneck), it is arguable that a light form of ex ante regulation would be a more effective means of regulating digital gateway issues than ex post competition rules. An ex ante approach could also ensure that public interest objectives are clearly defined in a precise legal framework, thereby providing legal certainty for investors. This would also leave room for case-by-case analysis and a complementary role for the EC competition rules, which are better designed to tackle particular grey area cases.

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## Chapter 7.1

### Summary

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Chapter 7 discussed the conversion from sector-specific regulation to the application of competition rules. This conversion is dependent on the degree to which competition rules can acquire the analytical tools necessary to deal with the technological and commercial aspects of convergence in the fixed and mobile markets.

The chapter sought to show how the jurisprudence of the European Court and decisions of the European Commission could address potential market failure. To this end, the chapter examined, firstly, how market power could be identified after total convergence between fixed and mobile markets. Secondly, it examined whether application of the essential facilities doctrine could adequately replace sector-specific regulation, especially reflecting interconnection and access questions.

Under the final part of the chapter concerned with the merger regulation and oligopolistic markets, attention was drawn to the growing number of new entrants, especially in the fixed sector. It was shown that the fixed sector operators merged or went into alliances with a limited number of mobile operators in order to make fixed/mobile customer offerings. Competition rules need to be applied to this area, developing a clear indication of those relationships that should be accepted or refused.

In the following chapter, the conclusions of the study will be presented.

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**Chapter 8**

**Recent Developments and Conclusion**

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In addition to what has been discussed in this thesis, it is important to note the recent developments in the European telecommunications sector. The new regulatory framework evolved from a response to the conclusions of the special European Council of Lisbon of 23 - 24 March 2000. It also built on the Communication on the results of the public consultation on the 1999 Review of the Electronic Communications Sector and the principles and orientations for the new regulatory framework<sup>516</sup>.

The Commission proposed, in July 2000, a package of measures for a new regulatory framework for electronic communications networks and services. The package consists of five proposed European Parliament and Council directives under Article 95<sup>517</sup>, one Commission directive to be adopted under Article 86<sup>518</sup>, and one proposed Commission Decision on a regulatory framework for radio spectrum<sup>519</sup>.

The Commission also proposed a European Parliament and Council Regulation for unbundled access to the local loop which was adopted in December 2000 and entered into force on 2 January 2001<sup>520</sup>. The Commission proposal for a Regulation for unbundled access to the local loop was adopted by the EP and Council in December 2000 and has been in force since 2 January 2001.

Before submitting these proposals, the Commission had examined the impact of convergence on this sector and had conducted an examination of the use in the Community of radio spectrum by Member States and by non-governmental bodies.

The new proposals when implemented are intended to provide a coherent, reliable, and flexible approach to the regulation of electronic communication networks and services in fast moving markets. The proposals provide a lighter regulatory touch where markets have become more competitive, yet ensure that a minimum of services are available to all users at an affordable price and that the basic rights of consumers continue to be protected.

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<sup>516</sup> (COM(2000)239)

<sup>517</sup> Directive (2002/21/EC) on a Common Regulatory Framework, OJ L 108, 24.04.2002 p. 33. Directive (2002/19/EC) on Access and Interconnection, OJ L 108, 24.04.2002 p. 7. Directive (2002/20/EC) on Authorisation, OJ L 108, 24.04.2002 p. 21. Directive (2002/22/EC) on Universal Service and User's Rights, OJ L 108, 24.04.2002 p. 51. Draft Directive on Data and Privacy, OJ L 201, 31.07.2002 p. 37

<sup>518</sup> Directive on Competition in the Markets for Electronic Services OJ C 96, 27.03.2001 p. 2-7

<sup>519</sup> Directives in the New Regulatory for Electronic Communications Networks and Services and the Decision on Radio Spectrum, 24 april 2002, OJ L 10, 24/04/2002.

<sup>520</sup> Regulation (EC) No 2887/2000 of 18 December 2000

The new regulatory framework for electronic communications networks and services will be applied in all Member States from 25 July 2003.

The purpose of new regulatory framework is to ensure harmonization across the single market and guarantee legal certainty. Article 15:1 of the Framework Directive requires the adoption of a Recommendation on Relevant Product and Service Markets. This will identify those product and service markets within the electronic communications sector, the characteristics of which may be such as to justify the imposition of regulatory obligations set out in the specific directives. This is without prejudice to markets that may be defined in specific cases under competition law. The markets identified in the recommendation will be markets defined in accordance with the principles of competition law.

The recommendation plays an important role in achieving both of these objectives, as it seeks to ensure that the same product and services markets will be subject to a market analysis in all Member States and that market players will be aware in advance of the markets to be analysed. It will only be possible for NRAs (National Regulatory Authorities) to regulate markets which differ from those identified in the recommendation, where this is justified by national circumstances and where the Commission does not raise any objections, in accordance with the procedures referred to in Articles 7(4) and 15(3) of the Framework Directive. As competition and convergence develops, it is expected that the range of markets identified in the recommendation will in the future be reduced.

The importance to entrants of obtaining unbundled access to the local loop “the last mile” across the European Union was acknowledged by the European Commission in the Fifth Report on the Implementation of Telecommunications Regulatory Package<sup>521</sup> and was reaffirmed by the Commission in the 1999 review<sup>522</sup> process. The Commission took the position that the liberalization of the local loop of telephone lines owned by former government telecommunications operators which have enjoyed a long period of legal monopoly, will enhance competition and benefit consumers by leading to lower prices for services such as local calls, Internet access and other products. Those product ranges will be

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<sup>521</sup> Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions, *Fifth Report on the Implementation of the Telecommunications Regulatory Package*, (COM (1999) 537), 11.11.1999

<sup>522</sup> Communication from the Commission on the 1999 Communications review, *Towards a new framework for Electronic Communications infrastructure and associated services*, (COM (1999) 539), 10.11.1999

broadened to include innovative broadband offerings, which can be provided with xDSL technology.

The Commission and the EFTA Surveillance Authority launched in July 2000 the Second Phase of the Local Loop Unbundling Sectoral Enquiry under a Decision of 27 July 1999 under Article 12 of Regulation 17/1962<sup>523</sup>. The Commission and the EFTA Surveillance Authority directed the Second Phase Enquiry to obtain the views of new entrants in terms of their understanding of how fixed incumbents have been able to satisfy the terms of Regulation 2887/2000<sup>524</sup>. The primary purpose of Regulation 2887/2000 is the establishment of harmonised conditions for unbundled access to the local loop.

The result of the Second Phase Inquiry was presented in the Commission's Seventh Report on the Implementation of the Telecommunications Regulatory Package, adopted on 26 November 2001.

The key conclusions were:

- ✓ Progress in the development of competition in local broadband access markets is not satisfactory, and should be speeded up by NRA's,
- ✓ The implementation of the Regulations has been very disappointing,
- ✓ The number of fully unbundled lines represents a small percentage of the total access lines in Europe,
- ✓ Shared access was operational in only four Member States,
- ✓ In most Member States, the number of high-speed access lines held by new entrants is not comparable to the number of the incumbent's retail access lines.
- ✓ NRAs need to take action to ensure that wholesale DSL is offered to entrants on non-discriminatory terms.

The general trend in the framework directive is towards less detailed ex ante regulation, for operators without significant market power (SMP), and more ex post checks based essentially on competition rules. In a new recommendation,<sup>525</sup> the Commission identifies 18

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<sup>523</sup> Regulation No 17/62, implementing Articles 81 and 82 of the Treaty (OJ No 013, 21.02.1962)

<sup>524</sup> Regulation No 2887/2000 of the European Parliament and of the Council of 18 December 2000 on unbundled access to the local loop (OJ L 336, 30.12.2000 pp. 4-8).

<sup>525</sup> Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic networks and services. C(2003)497 Brussels, 11/02/2003



markets in the telecoms and media sector, in which the national regulators can impose regulatory rules to prevent a company from abusing its dominance in such a sector. This recommendation is possibly as important as the Framework itself.

Under the rules laid out in the recommendation, NRAs should undertake an analysis of the listed markets and assess if these markets are subject to a situation where one market operator has a significant market power. If there is such a dominant position, NRAs will be able to impose sector specific obligations, but they will have to consult other NRAs in the European Regulators Group (ERG). If the ERG accepts the imposed measures, the Commission can still veto them if it thinks they are not in line with the EU's competition rules.

It could be interesting to note that one of the essential markets mentioned in the recommendation deals with broadband access. In this market, the incumbent telecoms groups control about 80 % of the EU's high-speed telephone lines. In the preparations of the recommendation the incumbent telecoms groups have lobbied the Commission to keep broadband access out of this list of "relevant markets".

This leads, in this writer's view, to the conclusion that the new regulatory framework will deal with problems due to lack of effective competition. However, the markets identified by the Commission in the recommendation require the NRAs to analyze certain specific markets. One of those markets is the minimum set of leased lines, identified in the Universal Service Directive<sup>526</sup>. It also identifies the provision of access to and use of the public telephone network at a fixed location. Further, the Access Directive<sup>527</sup> gives the NRAs the possibility to limit obligations concerning access systems to undertakings with significant market power, after an analysis, and this limitation is at the discretion of the individual Member State. It would perhaps have been better to give this power to a European Regulator or to directly apply competition law, more so perhaps as the NRAs define relevant markets appropriate to national circumstances. This could be a problem when defining relevant geographic markets in their territory. The definition of relevant markets must change over time as the characteristics of products and services evolve and the

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<sup>526</sup> Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) 24 April 2002

<sup>527</sup> Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) 24 April 2002.

possibilities for demand and supply substitution change. It is especially important where the characteristics are continually evolving, and new products and services appear and where the way in which such products and services are produced and delivered evolves because of technological evolution. The new satellites and the laser-based services are examples of such technological evolution. The convergence of fixed/mobile services where similar services can be delivered over different types of network is another example. From this it follows that it will be necessary over time to re-examine the markets identified in the recommendation. This, in this writer's view, could be better served by a European Regulator applying competition law than by national NRAs with obvious national interests.

The experience of the initial phase of liberalization in the European Union is that ex ante regulation has served as an important complement to competition law in dealing with two particular types of problems that market entrants have faced following liberalization. The first is the need for a market entrant or potential competitor to obtain access to existing networks belonging to other operators in order to serve customers. The second is the fact that the competitive provision of many electronic communications services also depends on negotiating interconnection with other networks to facilitate the necessary connectivity.

This experience does not necessarily imply that these two problems will persist indefinitely or in all circumstances. The evidence arising from the establishment of mobile cellular networks, and from the establishment of widespread voluntary agreements to exchange Internet traffic on a best efforts basis, indicates that there have not been persistent obstacles to market entry in these two areas. In addition, technology and markets in this sector can change rapidly, so that an obstacle to the development of competition at one point in time can subsequently be removed or disappear over a given horizon.

It is considered that the criteria for identifying markets for the purposes of the new regulatory framework should include an overall assessment of the effectiveness of competition law alone in addressing the market failures concerned. Such an assessment will draw on the experience gained from the application of competition law and the imposition of ex ante regulatory obligations in the electronic communications sector as a complementary instrument. Only markets where national and Community competition law is not considered sufficient by itself to redress market failures and to ensure effective and sustainable competition over a foreseeable time horizon should be identified for potential ex ante regulation.

What would therefore be the best way to identify relevant markets?

- ◆ The first criterion is whether a market is subject to high and non-transitory entry barriers. The presence of high and non-transitory entry barriers, although a necessary condition, is not of itself a sufficient condition to warrant inclusion of a given defined market. Given the dynamic character of electronic communications markets, possibilities for the market to tend towards a competitive outcome, in spite of high and non-transitory barriers to entry, need also to be taken into consideration.
- ◆ The second criterion, therefore, is whether a market has characteristics such that it will tend over time towards effective competition. This criterion is a dynamic one and takes into account a number of structural and behavioural aspects which on balance indicate whether or not, over the time period considered, the market has characteristics which may be such as to justify the imposition of regulatory obligations as set out in the specific directives of the new regulatory framework.
- ◆ The third criterion considers the sufficiency of competition law by itself (absent *ex ante* regulation), taking account of the particular characteristics of the electronic communications sector.

As the title of Annex I of the Framework directive makes clear, all the market areas listed therein need to be included in the initial version of the recommendation in order that NRAs can carry out a review of existing obligations imposed under the 1998 regulatory framework. If they were not included, Article 15(3) of the Framework directive would require NRAs to notify them individually to the Commission under the procedure set out in Article 7 of the Framework directive.

However, Article 15(1) of the Framework directive requires the Commission to define markets in accordance with the principles of competition law. The market areas set out in Annex I of the Framework directive cannot all be regarded as having been so defined. Where NRAs have imposed obligations on SMP operators in market areas under the 1998 regulatory framework, they should therefore analyze whether there is effective competition on the corresponding competition law markets identified in the annex to the recommendation.

Provided that NRAs analyze relevant markets using the product or service market definitions listed in the annex, there is no need to notify the Commission in accordance with Article 15(3) and Article 7(4a) of the Framework Directive. However, it is this writer's view,

that national interest could be given preference over the obligation to ensure fair competition in the telecommunications sector.

This work has considered the legal fundamentals of EC telecommunications law.

Part I of this Study examined EC telecommunications law on its way to full liberalization, from the 1987 Green Paper to the fully liberalized market, which was in place in 1998. The considerable achievement over this ten-year period must be acknowledged. It was also shown how Article 86 was used by the Commission to force the liberalization process. The disagreement between the Commission on the one hand, and the European Council on the other, as to the legal basis on which to carry out the Community's objectives, a disagreement which eventually led to the 1989 compromise, is then discussed. The compromise led to the Commission agreeing to, in the future, obtain the Member States' support before enacting any directives under Article 86. The important terminal equipment directive later strengthened that link.

The conclusion was drawn that "enforcement is the key to success", with some consideration being given to the energy and postal services. Part I ended with a more practical discussion of interconnection, which is considered to be the key element of Community Telecommunications policy.

Part II examined consumer expectations in the converged fixed/mobile market. It showed that the majority of the customers in the telecommunications market will actually subscribe to some form of converged service, and that the regulatory regime for that kind of service needs therefore to be carefully tailored to these new circumstances. It noted that the regulatory regimes of the two different markets are indeed different. This then allowed a discussion of the substitution of fixed with mobile services, a phenomenon which is in fact taking place both at the call level and at the service level. Further, it showed that the distinction between fixed and mobile will be less clear as the convergence of the markets develops, and that this requires that the regulatory framework be consistent in its approach towards the two markets. Part II concluded that if this were not the case, there would be a concern that the development of the converged markets might be distorted.

Part III developed further the discussion under part II, and considered the framework for converged fixed and mobile services, with a special emphasis on the different markets. The complexity of the sector was noted and to some extent the desire by the consumer

protection authorities to let specialist regulators handle the problems. It also discussed the possibility of allowing competition rules in the area by firstly, discussing the level of competition in the market for services, and secondly, the desirability of a market where operators and providers were encouraged to meet the needs of the customers to win their business. It continued to discuss the changeover from sector-specific regulation to the application of competition rules, with a special emphasis on significant market power. It also showed that the Commission needs to balance against the application of subsidiarity, the need for greater certainty, as the scope of the relevant product and service markets vary among the different Member States. The perhaps obvious reason for this is that otherwise this divergent approach could distort the markets, if market power is measured differently at the national level. Part III then argued that whatever market definition is adopted in the converged environment, it will only be those mobile operators that are owned by the incumbent fixed operators that can be dominant in such a market. Part III ended with a discussion of the conversion from sector-specific regulation to the application of competition rules. It showed that this conversion is dependent on the degree to which competition law can acquire the analytical tools to deal with the technical and commercial aspects of convergence in the fixed and mobile markets.

The liberalization process in the telecommunications sector was mainly developed by three important Court of Justice cases. Firstly, the *British Telecommunications case*<sup>528</sup> was an early example of the application of competition rules in the telecommunications sector. Secondly, the *Tetra Pak case*<sup>529</sup> answered the question whether competition rules can be used to restrain anti-competitive practices in a particular market or market segment, if market power exists in another market or market segment. The Court found that Tetra Pak was “in a situation comparable to that of holding a dominant position on the markets in question as a whole”. In the literature, this is referred to as Associated Markets Dominance. Thirdly, *Oscar Bronner v Mediaprint*<sup>530</sup>, examined the essential facility doctrine, and that ruling, though restrictive, suggests that the doctrine may still be of relevance in the telecommunications field. In particular, the case showed that it is likely that an operator with strength on a related market

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<sup>528</sup> Case 41/83, *Italy v. Commission* [1985] ECR 873 (*British Telecommunications Case*).

<sup>529</sup> Case T-83/91, *Tetra Pak International v. Commission* [1994] ECR I-755; on appeal: Case C-333/94P, *Tetra Pak International SA v. Commission* [1996] ECR I-5951.

<sup>530</sup> Case C-7/97, *Oscar Bronner v. Mediaprint Zeitungs-und Zeitschriftenverlag* [1998] ECR-I-7791.

(a mobile market compared to a fixed market) can be found to have control of an essential facility to which access is needed. In particular, incumbent fixed operators, which have benefited from a monopoly regime and its network, funded by the state through taxes, can be considered to control an essential facility.

At this point in the conclusion, it could be of interest to consider the reflections from industry, three years after the liberalization of the telecommunications market and to examine what impact the European Community's liberalization programme has had in practice.

The reality in the marketplace indicates that aims and reality still differ widely within the telecommunications market. In particular, progress on liberalizing the link between homes and local exchanges (the local loop unbundling or as it is referred to "the last mile") remains slow and painful in most Member States<sup>531</sup>. As shown by ECTA, a total or near total control of all DSL (Digital Subscriber Line) lines by incumbent operators are shown in Austria, Belgium, France, Germany, Ireland, Italy, Portugal, Spain, Sweden, and the UK. In the UK most of the around 20 operators who signed up to locate equipment in British Telecommunications' exchanges, afterwards pulled out leaving around five possible competitors. The situation is a serious worry for Erki Liikanen, European Union Information Society Commissioner, whose commitment to local loop unbundling as a cornerstone of a competitive, broadband Europe made it possible for the Information Society Directorate to pass the local loop unbundling legislation in very quick time. The legislation came into force on 1 January 2001.

It is this writer's view that the winners to date from local loop unbundling in Europe are the incumbents. One proof of this could be that many of Europe's incumbents are now working ahead of competition to launch services under the assumption that their customers are connected, and that most of them will be either too laid-back or too uncertain to change service providers. A good example of this scenario is France, where competitive operators have been forced to fight severely to secure a reasonable deal for France Telecom's Netissimo service. While France Telecom's competitors have been forced to devote a lot of time and money in fighting court battles, France Telecom has taken the opportunity to go ahead with a very ambitious service rollout.

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<sup>531</sup> For a full update on the developments in the local loop unbundling see, [www.Ectaportal.com/ecta2001\\_home/dsl\\_july01.htm](http://www.Ectaportal.com/ecta2001_home/dsl_july01.htm). This website will be updated on a regularly basis. The figures are from ECTA (European Competitive Telecommunications Association).

Tying up competitors' resources in time consuming legal battles is just one of the many weapons available to the incumbents. As Erki Liikanen put it<sup>532</sup>, pricing and co-location issues remain the greatest source of dispute. Erki Liikanen has urged the regulators (NRAs) in the Member States to take a much more active role in ensuring cost-oriented wholesale tariffs and adequate co-location arrangements to counter discriminatory behaviour. As said earlier in the study, it is also this writer's view that the NRAs are very weak players in the telecommunications markets throughout the European Union. This weakness could well be one of reasons why the telecommunications markets are slowing down, and at the expense of the customers.

"Today's situation is clearly a failure", is a statement made by ECTA<sup>533</sup>, who is calling on the Commission and national regulators to develop a new model that "incorporates both a carrot and a stick"<sup>534</sup>. "Despite the best intentions of policy makers, many competitors are beginning to feel that local loop unbundling may simply never fly"<sup>535</sup>. "What we have right now is simply window dressing for a liberalized market"<sup>536</sup>. One suggested solution envisages a new set of regulations based loosely on the US model, which ties incumbent's ability to move into new markets to their ability to prove full liberalization of their own local networks. Another proposition would see incumbents prevented from offering their own DSL product until at least two others are providing competitive broadband services. Finally, Erki Liikanen has called upon the spectre of prosecution under the European Community's competition rules for Member States failing to comply with open market principles.

It should, however, also be mentioned in this conclusion that some players in the telecommunications markets see the downturn as good news for the spread of optical wireless, or free-space lasers. In this technology, a laser beam sends a signal through the air, rather than along a glass fibre, to a receiver a short distance (about two kilometres) away. Free space lasers are an option. They do not even have to have a license to operate and

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<sup>532</sup> In a speech to the European Commission in July 2001, quoted in the Financial Times. (18 July 2001).

<sup>533</sup> Phil Evans, ECTA's Managing Director in an interview with the Financial Times. (18 July 2001) reporter Sarah Parkes.

<sup>534</sup> Phil Evans, ECTA's Managing Director in an interview with the Financial Times. (18 July 2001) reporter Sarah Parkes.

<sup>535</sup> Phil Evans, ECTA's Managing Director in an interview with the Financial Times. (18 July 2001) reporter Sarah Parkes.

<sup>536</sup> Phil Evans, ECTA's Managing Director in an interview with the Financial Times. (18 July 2001) reporter Sarah Parkes.

thereby reduce the costs and time it takes to bring a system on line. The attributes of free space laser are such that the technology can also work inside buildings connecting users to a LAN (Local Area Network). Free space lasers can also work between buildings where the aim could be to connect them in a LAN, rather than to plug into the long-distance backbone. Optical wireless is now also making advances into the mobile networks, where it connects base stations to the fibre backbone; in what is known as the back-haul link<sup>537</sup>, which will further reduce the cost, for the benefit of the consumer.

The rest of this conclusion discusses a regulatory model that is appropriate for the converged fixed/mobile market and considers key requirements for the application of competition rules in the future.

In the converged telecommunications market, fixed communications will continue to be important and most customers will use both a fixed and a mobile service. The demand for converged services from a single supplier will therefore grow, as the vast majority of the customers will subscribe to some form of converged service. As shown in this study, the regulations for fixed and mobile services are very different. In summary, regulation in the fixed market focuses on the incumbent operator and seeks to ensure that other operators can compete on a fair basis. The mobile market has been far more competitive and the different mobile markets in the European Union have not had as extensive regulations as those applying in the fixed market.

Universal service obligations, for example, which are placed solely on the fixed incumbents, have no relevance in the mobile sector. From a customer's point of view, the substitutability, at the service level and at the call level, of fixed and mobile services, can lead to confusion regarding the distinction between the two. Customer concerns in the converged market are best tackled by creating competition in the services. As discussed in this study, price, quality, and contractual terms are best handled by service providers competing to win the customers' business. Another concern is, of course, health and safety,

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<sup>537</sup> For further information on this interesting development in the telecommunications market, see BT project together with Imperial College and University College, (two parts of London University). A separate report can be downloaded from [www.ft.com/fittelecoms](http://www.ft.com/fittelecoms). Of special interest is Ms. Carbonneau's research in the free space links, where she concludes that free space links can offer 99.9% reliability. This is perfectly acceptable, she says, especially to people who have no alternative.



but such concerns could be met by legal actions in civil courts under general consumer protection legislation.

It is this writer's view that only one issue requires sector specific regulation, namely access to emergency services. In this study, carrier pre-selection and number portability are discussed as possible issues that could need sector specific regulation, but as those issues were used to liberalize the telecommunications market, there cannot be a need after liberalization to regulate those issues specifically.

As it is most likely that the fixed and mobile sectors will continue to converge, the interests of all players in the telecommunications market are best served by removing the regulatory powers from specialist sectoral regulators, relying instead on general competition law, and, in the consumer area mentioned above, on consumer protection authorities.

A transition to an environment governed by competition law, apart from access to emergency services would admittedly require a vast regulatory process. This should be handled by the European Commission, as coordinator, and the different NRAs in the Member States, as implementers of the regulatory regime, given their power to enforce competition law in the sector.

Future regulation should be based on competition law, drawing on a full understanding of markets under Article 81 and Article 82 of the EC Treaty. Key issues concern access and abuse of market power. Other competition issues which will have to be addressed are cross-subsidizations and mergers. These issues are especially significant for the incumbent operators, given the opportunities open to them because of their dominance. They could be addressed not only by the merger regulation but also with notices, guidelines, or recommendations from the European Commission.

Regarding access, special consideration will need to be given to bottlenecks and market failure tendencies. Sector-specific regulation could, admittedly, be the best way to address these problems, at least in the beginning of the transition period, to the application of competition rules. The main difficulty would then be to identify the market failures and/or the bottlenecks. Most likely, bottlenecks will appear in the areas of intellectual property rights and in the control of networks interfaces, servers, and navigators. For this purpose,

especially concerning intellectual property rights, Article 12 of Regulation 17/62<sup>538</sup> could be used as a sectoral approach to identify market failures concerning specific subject matters. The search for possible market failure or bottlenecks could then be carried out by, obviously, the Commission being granted the right under Article 12 and by the NRAs.

When these abusive forms of behaviours have been identified, it should be determined whether they should be handled under competition rules or by sector specific regulation. As discussed earlier in this study two different approaches could be adopted.

Firstly is the asymmetric approach, which will apply only to those operators who have significant market power, who are in a dominant position. These operators are subject to structural safeguards so as to protect competition. This is especially significant after the ECJ judgement in the *Tetra Pak case*, because their position in a special market can allow them to exercise market power across the converged service market.

Secondly is the symmetric approach, which should be applicable to those operators that control bottlenecks or whose services indicate market failure. In this area, the regulation should be consistent with competition law principles and be applicable even if the operator is not in a dominant position in the converged market or in segments of such market.

It is this writer's view that access-related questions could well be the most important and most significant issues which competition law will have to address. Views from industry show that frustrated business service providers are now demanding financial penalties for incumbent operators blocking leased line competition. Some operators even claim that even though there are EU directives and recommendations from the European Commission, the NRAs have done very little to enforce competitive leased line pricing. They are calling for the Commission to open proceedings against those Member States which fail to enforce cost-orientation under these directives<sup>539</sup>. To summarize the views of this section of industry it could be said that EBONE and WORLDCOM, together with the ECTA<sup>540</sup>, now want

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<sup>538</sup> Regulation 17/62 implements Articles 81 and Article 82 EC, OJ L13/204, 1962. Article 12 gives the European Commission the power to undertake sectoral enquiries whenever circumstances suggest that competition is being restricted or distorted in a specific sector of the economy.

<sup>539</sup> For an interesting view and for a discussion on these subjects see: Communications Week International. Articles and comments can be downloaded from [URL:http://www.totaltele.com](http://www.totaltele.com). Information and question could be sent to [info@totalemp.com](mailto:info@totalemp.com).

<sup>540</sup> European Telecommunications Association. Reading, England.

regulators to require incumbents to provide service level agreements for leased lines and exact penalties for failing to do so.

Finally, according to Yankee Group research, commissioned by EBONE, leased lines are the preferred technology for broadband access among the 87 large corporations surveyed. The research also indicates that European businesses pay 150 times more for broadband local lines than for international lines. Drawing on these examples from industry, the view is taken that a competitive market is necessary for the competitiveness of the telecommunications sector as a whole.

A question raised by this is whether these regulatory measures could be taken by notices, recommendations, or guidelines, sometimes referred to as soft law. It would be, as this writer sees it, an advantage if this would be the case as it would be more flexible in addressing technological and market changes. However, as noted by the vast majority of the industry, if the European Telecoms industry should move towards the new connectionless competition model, the role of the National Regulatory Authorities has to change to give them more enforcement powers, or perhaps even create a European regulatory body with legislative enforcement powers.

Another example of a present barrier to competition, in the context of local loop unbundling, was given by the industry in August 2001. In a negotiation with BT, BT took the view that all, in this case ten, new entrants were to present a united view before entering into negotiations. As the operators obviously are competitors in the market, it was with great difficulty that a united view could be presented, mainly because the operators clearly did not wish to present their business strategies in front of their competitors. Further, the charge for interconnection had to be negotiated with BT, which led to a strategic analysis of a possible affordable cost for the operators and not, as anticipated by the directives, a cost benefit analysis. Admittedly, the UK Office of Telecommunications (OFTEL) is one of the first regulators to recognize the problem and has now issued fines against British Telecom for not complying with the OFTEL regulation.

As far back as August 2000, the European Commission mandated local loop unbundling across the European Union. Local exchanges should be low rent. New entrants should enter the market and apply for a place in the incumbent's territory. The idea was that with just a little negotiation the new operators should be running their interconnection deals, develop DSL technology, and unblock the access network.

The telecommunications sector meltdown had, according to industry, nothing to do with problems with the technology, not even whether the model for wholesale DSL would work. It is the collected views of the industry that meltdown is caused by the immovability of the incumbents. In July 2001, UK regulator OFTEL made an attempt to solve the problems by announcing that it was to cut British Telecom's unbundling charges and soften the terms and conditions for competitive operators. Unfortunately, the modified terms and conditions only reflected the weaknesses of those they replaced. About a year ago, August 2000, 40 operators were negotiating with BT and OFTEL to try to agree to the terms and conditions, which would enable them to interconnect to BT's local loop. BT decided to take what some operators have referred to as the "Fawly Towers approach" – a carrier would function much more efficiently without the guests. By the end of the year 2000, the process seemed intractable and involved endless negotiations. As a consequence of this, many of the new operators pulled out or scaled back the plans for interconnection to the local loop.

It is now argued by the incumbents and the watchdogs that the telecommunications downturn stalled the local loop unbundling. It is this writer's view that it was, and is, the incumbent's immovability and the weakness of the NRAs, and to a significant degree the operators themselves that caused the telecommunications meltdown. The NRAs must take a significant share in that responsibility as they took the incumbents' attitude for granted. That is not the way to negotiate with an incumbent former monopolist.

This behaviour has all been at the expense of the customer. The transition from monopoly to full competition must lead to a shift from the incumbent operator to all the actors in the telecommunications market. This will inevitably require the NRAs to strike a difficult balance between regulatory intervention in the best interest of the customers and the acknowledgement that a competitive market could be the best place to provide different types of consumer benefits. It should, however, be made clear that there is a difference between consumer welfare and consumer benefits, and it should be made clear that low cost consumer benefits should never be at the expense of consumer welfare.

This in turn raises the question when, and for that matter if, specific universal service obligations in order to protect consumers are necessary. It is this writer's view that they should apply to all market players whatever their market shares, and certainly whatever other services they provide. Not even, in this writer's view, when positive obligations may hinder market entry, should market power be taken into account, and a new operator should never

be exempt from these obligations. It is important that these obligations should be applicable both to fixed and mobile operators in a fixed/mobile converged environment.

This view leads then to the question whether sector-specific regulation in any case should be extended to the mobile sector. This writer's view is that sector-specific regulation should gradually disappear in favour of horizontal consumer protection rules. Having said that, it might be necessary to have sector-specific regulation in the areas of service where the consumers have little or no experience, for instance, in number portability and in pre-carrier selection, but over time when consumer knowledge increases, it may be possible to rely on general consumer protection rules.

Undoubtedly, to reach the ideal competitive marketplace governed by Competition law it is preferred that regulatory intervention should be kept to the minimum necessary, letting the sector-specific regulation gradually be replaced by the application of competition law. This scenario can be found in other markets of the World, such as United States, Canada, and Australia. Within the European Union, only one Member State, Holland, has a policy of regulatory withdrawal and this writer would like to conclude with a quote from the chairman of OPTRA, the Holland NRA, "...the regulator should withdraw, or even forego a role, if the underlying policy objective has been met by the market forces. Such 'sunset clauses' or appropriate regulatory forbearance would reflect the dynamic nature of the international market better than detailed supranational legal provision to be meticulously incorporated in domestic law<sup>541</sup>".

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<sup>541</sup> Study for EC DJ Information Society. Contract 98/48487. (Bruxelles, Luxembourg: 2000).

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## APPENDICES

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**Appendix A**

**Glossary**

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**2G**

Second-Generation mobile telephony (digital cellular voice telephony). The spectrums are within the 880 MHz-915 MHz, 925-960 MHz, 1710-1785 MHz or 1805-1880 MHz bands.

**3G**

Third-Generation mobile telephony (a generic term covering a range of future wireless network technologies, including UMTS).

**ABC**

*Activity Based Costing.*

A process whereby costs are allocated on the demand of each product and/or service makes on all the company. Specific cost allocation is based upon studies of organizational cost drivers and activities.

**ACCESS CHARGE**

See Interconnect Charge.

Access charge has two meanings. The usage of the interconnect charge definition and the narrow meaning of the local access charge. Access charge has therefore been replaced with Interconnect Charge for clarity of meaning.

**ACCESS CODE**

Short numbers beginning with 1 which enable callers to reach services provided on telecommunications networks (e.g., 192 for directory enquiries) or to select a choice of carrier.

**ACCESSIBILITY**

The segment targeted must be able to be reached and served adequately by the firm's promotion and distribution system.

**ACH**

*Automated Clearing House*

An electronic funds transfer system governed by operating rules that provide clearance of electronic payments with participating financial institutions.

**ACCOUNTING ARRANGEMENTS**

Agreements MADE between two international operators at each end of a particular route for the handling of international calls. They include arrangements for each operator to pay the other for the termination of calls in their respective countries.

**ACR**

*Anonymous Call Rejection*

The calling user has eliminated a service, which automatically rejects any incoming calls where the presentation of the calling line identification.

**ACS**

*Analogue Cellular System.*

Cellular system using analogue transmission techniques. Standards used in Europe are NMT, TACS, Radiocom 2000, and C-net.

**ACTT**

*Approvals Committee for Terminal Equipment*

Created by Directive 91/263/EEC, responsible for the adoption of the Common Technical Regulations (CTR) on which EU harmonised type approval procedures is based.

**AD**

Application development

A process that includes the following steps:

- ♦ identifying a need
- ♦ defining the requirements
- ♦ planning the overall application structure or architecture
- ♦ developing the code or programming instructions.
- ♦ monitoring progress
- ♦ testing results

**ADC**

*Access Deficit Charge*

In the UK, BT seeks to make an ADC to interconnecting operators. Where it is not waived, the ADC is included as a component of the total Interconnect Charge. The ADC seeks to recover a share of the total Local Access Loss, including an element (to date unquantified) relating to the Universal Service Obligation.

**ADSL**

*Asymmetric Digital Subscriber Line*

Part of the DSL group of line-coding technologies developed by Bell Laboratories to carry high bit-rate signals over copper pairs. Seen as an alternative to cable-based networks for residential services.

**AFFILIATE**

Companies that sell other manufacturers' or retailers' (sponsoring merchants') products on their Web sites. Users select a product at the affiliate Web site, but the sale is actually transacted at the sponsoring merchant's Web site.

**AF**

*Avoidance of Frequency Interference*

Measures undertaken to ensure that the use of a transmitting device does not disturb receiving equipment to an extent, which would cause significant loss of information, intended for that receiver.

**AGCOM**

*Autorità per la Garanzie nelle Comunicazioni*

The Italian National Regulatory Authority (NRA), together with the Ministry of Communications.



**AIC**

Average Incremental Cost.

**ALLOCATION**

Entry in the Table of Frequency Allocations of a given frequency band allowing the use of that band by one or more Radio communications services under specified conditions. (See International Radio Regulations of the ITU; see also Assignment)

**ALPHA-NUMERIC  
DIALLING/ KEYPAD**

Dialling a telephone number by using the corresponding letters on the telephone's keypad that corresponds to the name of the service or the called party e.g. "0-800-flowers.

**AMPS**

*Advanced Mobile Phone System*

US Analogue Cellular System standard.

Analogue Cellular system

Cellular system using analogue transmission techniques. Standards used in Europe are inter alia NMT, TACS, Radiocom 2000, and C-Net.

**ANI**

*Alternative Network Infrastructure*

Infrastructure capacity established by Organizations other than the telecommunications Organizations, for own use or for offering capacity to other users or to service providers. When offered to others, it is referred to as Third Party infrastructure

**ANSI**

*American National Standards Institute (USA)*

**APC**

*Aeronautical Public Correspondence services*

Generic term for Radio communications based services, allowing airline passengers to communicate from a plane whilst in flight. Systems are being developed based on both satellite and terrestrial systems. Within Europe, the *Terrestrial Flight Telecommunications System (TFTS)* is now entering service with a number of airlines.

**APPLET**

A small program that runs within an application. Applets are commonly used to make otherwise static World Wide Web pages more interactive.

**APPLICATION**

A task that a user performs using Telecommunications. A number of different attributes are used to distinguish applications type of information to be communicated, mobility of user, speed of transmission, etc.

**APPLICATION INTEGRATION**

The process of a) keeping redundant copies of data (in independently designed applications) consistent, and/or b) enabling end-users to access data and functionality

from independently designed applications on a single user interface.

**APPLICATION LAYER**

The top of the seven-layer Open Systems Interconnection (OSI) model, generally regarded as offering an interface to, and largely defined by, the network user.

**ARBITRAGE**

The ability to buy for one price and sell on for a higher price.

**ARCHITECTURE**

A framework for a communications system, which gives definitions of its functions, interfaces and procedures.

**ARP**

*Address Resolution Protocol*

Internet protocol (IP) used in IPv4 to map an IP address to a media access control (MAC) address. A MAC is a 48-bit code for layer 2 networking maintained by the Institute of Electrical and Electronics Engineers (IEEE) and hardwired into network adapters. Also called Ethernet address.

**ARPANET**

*Advanced Research Projects Agency Network*

The forerunner of the Internet that was a pioneering long-haul network. It served as the testbed for many areas of inter-network technology development and testing and acted as the central backbone during the development of the Internet.

**ART**

*Autorité de Régulation des Télécommunications*

The French National Regulatory Authority (NRA), together with the Ministry of Economic Affairs, finance and Industry.

**ASN**

*Advanced Ship Notice*

An electronic data interchange (EDI) transaction that identifies the contents of a container that is en route from a supplier to a customer.

**ASP**

*Application Service Provider*

An organization that hosts software applications on its own servers within its own facilities. Customers access the application via private lines or the Internet. Also called a commercial service provider.

**ASSIGNMENT**

Of a radio frequency or a radio channel: authorisation given by an administration for use of a particular radio frequency or radio frequency channel, subject to specific conditions. See Article 1 of the *Radio Regulations*.

**ATM***Asynchronous Transfer Mode*

Cell-switching technology, carrying information in fixed-length cells using statistical multiplexing techniques. Since the cell size is fixed, ATM can operate at a wide range of speeds, currently from 45 Mbps to 2.5 Gbps in long distance. Lower speed (down to 2Mbps) can also be provided for use in local networks).

**AT&T***American Telephone & Telegraph Co.***AUCTIONING**

License or frequency award procedures, where allocation is to the highest bidder. This method has been used in a number of countries outside the European Union and has been used for GSM in Greece.

**AUTHENTICATION SERVICE**

A mechanism for the secure authentication of the identity of network clients by servers and vice versa, without presuming the operating system integrity of either.

**AUTHORIZATION**

Occurs when the merchant, its merchant bank, and the customer's card-issuing bank work together to verify that the electronic payment should be permitted given the customer's credit limit or the amount in the customer's bank account.

**B7**

A modern signalling system, based on standards set by the CCITT (the former name of the world telecommunications standards-making body), for the transfer of messages between entities in telecommunications networks that enables the setting up, routing and clearing of calls and the transfer of other relevant information related to the operation of these networks. The B7 signalling system is used for the transfer of such messages between different networks as well as within individual networks.

**BABT***British Approvals Board for Telecommunications* (See BSI.)

BABT can grant approvals for all types of apparatus, other than CRA, (Call Routing Apparatus), which still require approval by OFTEL.

**BACKHAUL**

The link from the cable head to the international switching centre.

**BACK-OFFICE**

The business processes and operational functions that happen internally or through the supply chain. These functions often include inventory management, order

processing and tracking, shipping and receiving, purchasing and distribution.

**BANDWIDTH**

The range of frequencies, expressed in Hertz (Hz), that can pass over a given transmission channel. The bandwidth determines the rate at which information can be transmitted through the circuit. The greater the bandwidth, the more information can be transmitted through the circuit in a given amount of time. In digital technology the equivalent measure is throughput, which is measured in bits per second, Voice telephony typically requires 64 kb/s but the latest technology using sampling techniques allows this to be reduced.

**BEAUTY CONTEST**

The award of scarce resources, such as the right to use radio spectrum, according to technical criteria, such as the applicant's ability and commitment to provide the designated service, rather than financial criteria.

**BELGACOM**

The Belgian incumbent.

**BI***Business Intelligence*

User-led (versus computer-led) process of exploring data, data relationships, and trends to improve business decision-making. Insights derived from BI's inquiry and analysis techniques are critical to enterprise-wide strategic planning efforts. BI technology is divided into interactive query tools, reporting tools, decision support systems, and executive information systems.

**BIOMETRICS**

A method of identification or authentication that measures a unique physical or behavioural biological characteristic such as a fingerprint, face, voice, or iris of the eye.

**BIPT***Belgisch Instituut voor Postdiensten en Telecommunicatie.*

The Belgian National Regulatory Authority (NRA), together with the Minister for Telecommunications and Public Undertakings.

**BIT**

The minimum unit of binary information as stored in a computer system. A bit can have only two states, on or off, which are commonly called ones (1) and zeros (0). The combination of ones and zeros determines which information is entered into and processed by the computer.

**BOC***Bell Operating Company*

(USA: One of the local operating companies of the former AT&T "BELL SYSTEM" that became independent through the court-ordered break-up of AT&T in 1984 following the "MFJ" order).

**BOTTLENECK**

An essential facility, which has some tradition in the USA antitrust policy. The "essential facility" doctrine originally evolved from a railroad case in 1912. A number of railroads had controlled the only bridge into St. Louis and denied access to this bridge to their competitors. The Supreme Court decreed the bridge a bottleneck and declared denial of access to be a restraint of trade in violation of the Sherman Act. The main elements of a bottleneck are:

- ◆ control of a facility by a single firm
- ◆ facility essential for production
- ◆ inability of others to practically duplicate the facility
- ◆ denial of access with substantial harm to competition
- ◆ absence of a valid business reason for not providing access

Interconnection as a bottleneck has received a lot of attention and from it the need for mandatory interconnection has been derived.

**BPS**

*Bits Per Second*

The basic unit of measurement for serial data transmission capacity. Represented as Kbps, or kilobit/s, for thousands of bits per second; Mbps, or megabit/s, for millions of bits per second; Gbps, or gigabit/s, for billions of bits per second; Tbps, or terabit/s, for trillions of bits per second.

**BROADBAND**

Transmission equipment and media that can support a wide range of electromagnetic frequencies. Any voice communications channel having a bandwidth greater than a voice grade telecommunications channel; sometimes used synonymously with wideband. Typically, the technology of CATV transmission as applied to data communications; employs coaxial cable as the transmission medium and radio frequency carrier signals in the 50 to 500 Mhz range.

**BROWSER**

A software program used to locate and display information on an intranet, extranet or the Internet. Browsers are most often used to access Web pages and most display graphics, photographs, text, and multimedia information.

**BSI**

*British Standards Institute*

Operates under Section 22 of the UK Telecommunications Act 1984, which provides a statutory framework for approvals procedure. BSI draws up standards and the BABT evaluates equipment against these standards and operates a certification scheme.

**BT**

*British Telecom.*

The UK incumbent.

**BUNDLING**

The tying of one service or product to the supply of

others including some situations where the supply of services are linked through the use of discounts.

**BUSY HOUR**

When designing a telephone service, capacity has to be proved to meet peak rather than average loads. Typically planning is done for the busiest hour of a typical day. The need to cater for busy hour loads means that capacity is often idle.

**C7**

A modern signalling system, based on standards set by the CCITT (the former name of the world telecommunication standards-making body), for the transfer of messages between entities in telecommunications network that enables the setting up, routing and clearing of calls and the transfer of other relevant information related to the operation of these networks. The C7 signalling system is used for the transfer of such messages between different networks as well as within individual networks.

**CA**

*Certificate (certification) Authority*

Either internal or third party entities that affirm or electronically vouch for an individual's identity. They are used to vouch for the identity of a device, such as a Web server, a network router, or an application. The certificate is backed by a profile stored in a database that is referenced to retrieve a public key or to check attributes such as permissions and roles.

**CACHE**

A temporary storage area for instructions and data near a computer's central processing unit (CPU), usually implemented in high-speed memory. It replicates information from main memory or storage in a way that facilitates quicker access, using fewer resources than the original source.

**CAMEL**

*Customised Applications for Mobile Network Enhanced Logic*

Allows roamed customers to access the value added services of their home network, even if the visited network does not support those services.

**CAP**

*Competitive Access Provider*

Term applied in USA to companies providing services directly to customer premises in competition with the local Regional Bell Operating Companies (RBOC's).

**CARRIER PRE-SELECTION**

Possibility for customers to determine his or her own default carrier on a semi-permanent basis or thus avoiding any additional dialling.

**CARRIER SELECTION**

The possibility for customers to choose their long-distance or international operator e.g. by dialling a code or by determining the default carrier.

**CATV**

*Cable Television*

**CATV NETWORKS**

*Cable Television Networks*

Systems authorised for the distribution of broadcasting / television programmes. In many cases also suitable for the transmission of telecommunications.

**CBC**

*Capacity Based Charging*

An emerging system for interconnect charging where the purchaser rents "capacity" (e.g. (switching or transmission capacity in discrete units) from an established operator. The purchaser pays a fixed price for access to the network regardless of the actual traffic utilization, (up to a maximum of the capacity rented). There may be a separate variable charge for call set up, signalling etc. This contrasts with "cost per unit/2 charging" where a user pays for actual calls conveyed, often on a "minute of use" basis.

**CCA**

An approach used in Incremental Costing to account for the costs of fixed assets expansion in discounted cash flow terms. The change in present value of projected capital expenditure as a consequence of fixed assets expansion is spread across the consequent additional capacity of the fixed assets (Not across the units of capacity in use); thus the present value per unit of incremental capacity associated with the advancement or postponement of investment expenditure is derived.

**CCITT**

*Comite Consultatif International de Telephonie et de Telegraphie*

International Consultative Committee for Telephone and Telegraph, an advisory committee within the ITU that recommends data communications standards. Following the ITU reorganization these functions are now carried out by TSB.

**C-COMMERCE**

*Collaborative Commerce*

Electronically enabled business interactions among an enterprise's internal personnel, suppliers, business partners, and customers throughout a given trading community.

**CDMA**

*Code Division Multiple Access*

Special coding technique for digital radio transmission whereby information in digital form is combined with a second coded digital stream to "smear" the information simultaneously across a wide radio frequency bandwidth. By using a known coded signal at both transmitter and

receiver, the original information can be recovered at the receiver. Currently used in some DCS's on an experimental basis.

**CELLULAR SYSTEMS**

Mobile Radio communications Networks, usually covering a large area, in which the area of service is divided into a number of smaller "cells" each is having its own transmitter/ receiver equipment (base station). The use of cells allows for the same frequency to be re-used in different cells.

**CEN/CENELEC**

*European Committee for Standardisation and European Committee for Electro technical Standardisation*

Major European standardisation Organizations. Responsible inter alia for the preparation of standards relating to electro-magnetic compatibility under Directives 89/336/EEC and 92/31/EEC .

**CEPT**

*European Conference of Postal and Telecommunications Administration*

(Membership is now confined to National Regulatory Authority (NRA) and encompasses all the EU Member States and most of other European countries including the countries of Eastern and Central Europe. CEPT activities are divided between ECTRA, NRA and ERC).

**CGI**

*Common Gateway Interface*

A data-passing specification used when a Web server must send or receive data from an application such as a database. A CGI script passes the request from the Web server to a database, gets the output, and returns it to the Web client.

**CHANNEL**

1. In data communications, a one-way path along which signals can be sent between two or more points.
2. In telecommunications, a transmission path (one-or two-way) between two or more points provided by a common carrier.
3. In business terminology, a channel refers to the route by which a company's products or services are delivered to the marketplace or end-user. A channel can be referred to as a marketing, sales, or a distribution channel.

**CHATLINE**

A service which allows more than two persons simultaneously to conduct a telephone conversation with one another and where the persons concerned are normally strangers to each other to begin with.

**CLI**

*Calling Line Identification*

**CLIENT**

A system or a program that requests the activity of one or more other systems or programs, called servers, to accomplish specific tasks. In a client/server environment, the workstation is usually the client.

**CMT**

*Comisión del Mercado de las Telecomunicaciones*

The Spanish National Regulatory Authority (NRA), together with the State Secretary for Telecommunications and the Information Society.

**C-NET**

Analogue cellular system standard.

**COAX**

*Coaxial (Cable)*

A type of cable generally used for conveying television pictures.

**COCOM**

The Organization responsible for determining the security exports control system for NATO countries and Japan.

**COMPARATIVE BIDDING**

License award procedure based on the review and comparison of the quality of the projects against defined criteria. This method is widely used throughout the European Union.

**COMPRESSION**

The application of any of several techniques that reduce the number of bits required to represent information in data transmission or storage, therefore conserving bandwidth and/or memory.

**COOKIE**

A permanent code placed in a file on a client computer's hard disk by a server that the client has visited. The code uniquely identifies the client. When the PC user returns, they are automatically entered into the site without relogging in.

**CORPORATE NETWORK**

Corporate networks are generally networks established by a single Organization encompassing distinct legal entities, such as a company its subsidiaries or its branches in other Member States incorporated under the relevant domestic company law.

**COST CATEGORIES**

Specific classes of costs differentiated, according to their relationship with changes in output. Examples include fixed, variable, common or sunk.

**COST ITEMS**

These are specific cost the firm and classified by Management. Examples include administrative expenses, maintenance, finance etc.

**COST ORIENTATION**

This term is usually used in the context that, tariffs and Interconnect charges should be cost oriented. Cost orientation implies a relationship with underlying cost of service but without specifying what that relationship is.

**COST OF SERVICE**

The cost of providing a particular service, or family of services, to customers determined using an appropriate cost standard. The cost is distinguished from interconnect charges made to other operators for use of the network and from retail tariffs to end users, both of which determine the revenue of the firm.

**COST STANDARD**

In EC legislation this term is synonymous with Cost Accounting System. A Cost Standard is the principle by which the pool of costs is allocated to individual services to determine Service Costs as a basis for financial reporting or regulatory or commercial decision-making. Examples include FDC (Fully Distributed Costing), MC (Marginal Costing) and LRIC (Long Run Incremental Costing).

**CPI**

*Consumer Price Index*

**CRM**

*Customer Relationship Management*

An enterprise-wide business strategy designed to optimise profitability, revenue, and customer needs satisfaction. To accomplish this the enterprise must organize operations around customer segments, fostering customer satisfying behaviours and linking processes from customers back through suppliers.

**CROSS SUBSIDY**

The financing of losses made in one market by pricing below incremental costs from profit made in another.

**C/S**

*Client/Server*

The splitting of an application into tasks performed on separate computing devices — a programmable workstation such as a personal computer (PC) and a server. The PC (the client) does some of its own processing, while the server typically stores information and software. The two sides are connected by a local-area network (LAN) or wide-area network (WAN).

**CTM**

*Cordless Terminal Mobility*

A general term encompassing short-range radio technology allowing cordless terminals to be used anywhere within range of the base transmitter.

**CT2***Cordless Telephony*

Equipment standard based on an ETSI interim standard. Current use primarily with Telepoint Applications. A digital system using frequency shift keying in the 854 to 868 MHz band using the time division duplex.

**CTR***Common Technical Regulations*

Type approval of terminal equipment according to the procedures of Directive 91/263/EEC.

**CUG***Closed User Groups (CUGs)*

refer to entities not necessarily bound by economic links, but which can be identified as being part of a group on the basis of a lasting professional relationship among themselves, or with another entity of the group, and whose internal communications needs result from the common interest underlying this lasting relationship. In general, the link between the members of the group is a common business activity. Examples of activities likely to fall into this category are fund transfers for the banking industry, reservation systems for airlines, information transfers between universities involved in a common research project, re-insurance for the insurance industry, inter-library activities, common design projects, and different institutions or services of intergovernmental or international Organizations.

In the context of the Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services, individual cases, and definitions used in Member States are subject to screening by the Commission. The Directive indeed refers to the public and not to CUGs. The Commission must therefore ascertain that the definitions of CUG by Member States do not exclude voice telephony between users who have existing common links between themselves, such that they could not reasonably be regarded as being members of the public (i.e. any random person, without distinction of belonging or membership). See Part I of this Green Paper, COM(94)440, 25.10.1994, section VI (1).

**DCS***Digital Cellular System*

Cellular Systems, utilizing digital (bit-based) transmission techniques).

**DCS 1800**

Standard for micro cellular communications systems developed by ETSI building on the GSM standard. Such system operates with very small cells, varying in size between a few hundred metres and a few kilometres. Operating at 1800 Mhz.

**DECT***Digital Cordless Telecommunications*

New Digital cordless standard developed by ETSI.

**DECISION SUPPORT SYSTEM**

A system designed to support strategic (versus operating) decisions. Decision support systems allow the computer rather than the user to make decisions. The system tends to be user-friendly and emphasize ad hoc query, reporting, and analysis capabilities. This is in contrast to online transaction processing, which focuses on low-cost, fast-response, and predictably structured applications.

**DIEL**

The Advisory Committee on Telecommunications for Disabled and elderly People.

**DIGITAL**

The generation, storing, processing, and transmission of all electronic data (e.g., words, numbers, even voices) in one of two states represented as 0s and 1s. Computers only understand and read digital data.

**DIGITAL SIGNATURE**

String of bits that identifies the originator of a message or transaction and is the result of the application of the originator's private key to a one-way hash of the (encrypted) message file. Also provides message integrity.

**DISC***Digital International Switching Centre***DLE***Digital Local Exchange***DMSU***Digital Main Switch Unit***DNS***Domain Name System (or Service)*

Name resolution software that lets users locate computers on a UNIX network or the Internet (TCP/IP network) by domain name. The DNS root name servers maintain a database of domain names (host names) and their corresponding IP addresses and are responsible for one or more top-level domain names, e.g., com or edu.

**DOMAIN**

A group of nodes on a network forming an administrative entity. On the Internet, a part of the naming hierarchy that refers to groupings of networks based on organization type or geography.

**DOUBLE TANDEM CONVEYANCE**

A service provided by a network operator to interconnected network operators whereby a call passed on to the operator's network at a tandem exchange (i.e. one that routes calls between exchanges but not having direct connections to end users) is passed to another tandem exchange and then on to a local exchange (i.e. one that does have direct connections to end users) and finally on to the end user.

**DSI**

*Detailed Spectrum Investigations*

of radio usage, one of the key tasks given the European Radio communications Office, aiming at the development of a common European Table of Frequency Allocations by Directive 91/288/EEC establishing harmonised frequency bands for DECT.

**DSL**

*Digital Subscriber Line*

**DSRR**

*Digital Short Range Radio*

New digital standard developed by ETSI in the Private Mobile Radio (PMR) communications field, to be used over short distances.

**DT**

*Deutsche Telekom*

The German incumbent.

**DTI**

*Department of Trade and Industry*

**DUCTS**

The tubes through which cables are laid.

**EASY ACCESS**

Method for carrier selection whereby the local access provider determines the default carrier with the possibility of call-by-call override by the user through dialling a code.

**EBC**

*Element-Based Charging*

(e.g. for interconnection)

**EC**

*Electronic Commerce*

The use of communication technologies to transmit business information and transact business. Taking an order over the telephone is a simple form of EC. Internet commerce is also EC but is only one of several advanced forms of EC that use technology, integrated applications, and business processes to link enterprises.

**ECP**

*Efficient Component Pricing*

A pricing proposal developed by Baumol and Willig, which set the Interconnect Charge as the incremental cost of production, plus the Opportunity Costs (OC) associated with providing the service to competitors. OCs may be calculated by reference to:

- ◆ resources used in acquiring an asset,
- ◆ alternative asset uses,
- ◆ unavailable capacity or revenue foregone.

(This has been implemented in the UK and New Zealand Telecommunications Industries to account for access deficits).

**ECTRA**

*The European Committee for Telecommunications Regulatory Affairs*

Created as one of the three committees under the CEPT structure. It includes a number of project teams covering inter alia licensing, numbering, interconnection mobile communications, testing and type-approval. Council Resolution 92/C318/EEC of 19.11.92. on the promotion of co-operation on Europe-wide numbering, identified several tasks for ECTRA in numbering co-ordination, including the creation of a European numbering space and the preparation of European positions for discussions within ITU. ECTRA has set up the European Telecommunications Office.

**EEA**

*European Economic Area*

Includes all EC and EFTA countries part from Liechtenstein and Switzerland.

**EETT**

The Greek National Regulatory Authority (NRA), together with the Ministry of Transport and Communications.

**EIRCOM**

The Irish incumbent.

**EMC**

*ElectroMagnetic Compatibility*

The ability of a device, unit, or system to function satisfactorily in its electromagnetic environment without introducing unacceptable electromagnetic disturbances to anything in that environment

**ENF**

*European Numbering Forum*

An industry Forum to discuss numbering and numbering related issues. The ENF is open to any Organization that has an interest in numbering or addressing and that is represented at the European level. The ENF was established in 1994 following the Council Resolution 92/C318/EEC of 19 November 1992 that called for industry co-operation in the area of numbering.

**ENO***European Numbering Office*

The European Numbering Office called for in the Council Resolution 92/C318/02 of 19 November 1992 on the promotion of Europe-wide co-operation on numbering of telecommunications services will be located in Copenhagen, as part of the European Telecommunications Office (see also ECTRA).

**EPT***Enterprise des Postes et Télécommunications*

The Luxembourg incumbent.

**EQUAL ACCESS**

The ability for a customer to access any long-range distance carrier irrespective of the Organization providing the local loop.

**ERC***European Radio communications Committee*

One of the three committees created under the new structure of CEPT. The ERC develops Radio communications policies, assists ITU conferences and plays a general co-ordinating role in frequency matters).

**ERLANG**

A widely used unit of telecommunications traffic intensity, named after work of the Danish statistician DK Erlang. One Erlang is the intensity at which one traffic path would be continuously occupied, e.g. one call per hour, equivalent to 3600 call-seconds. To measure the call traffic over a channel, an average may be taken over a period of time, generally an hour

**ERMES***European Radio Messaging System*

New digital paging standard developed by ETSI, supported by Directive 90/544/EEC establishing harmonised frequency bands for *ERMES* and a Council Recommendation on its co-ordinated introduction. *ERMES* will permit the reception of tones and/or numeric or alphanumeric messages.

**ERO***European Radio communications Office*

The European Radio communications Office (ERO) called for in the Council Resolution of 28 June 1990 90/C166/02 on the strengthening of the Europe-wide co-operation on radio frequencies, in particular with regard to services with a pan-European dimension was created by the ERC and started operations in Copenhagen in May 1991.

**ESSENTIAL REQUIREMENTS**

are non-economic reasons in the general interest, which may cause a Member State to restrict access to the public telecommunications networks or public telecommunications services.

**ETHERNET**

A baseband local-area network (LAN) developed by Xerox and supported by Intel, Digital Equipment, and Hewlett-Packard. It has a bus topology with carrier sense multiple access with collision detection (CSMA/CD) access control.

**ETI***European Telecommunications Institute (now ETSI)***ETNO***European Public Telecommunications Network Operators Association*

Currently comprising the incumbent operators in Europe but discussions are ongoing to open up to independent mobile operators.

**ETNS***European Telephony Numbering Space*

A numbering space that sits parallel to the national numbering spaces. Numbers from the ETNS will be available anywhere in the European Union (and later on Europe). When implemented, a services numbered from the ETNS can be accessed by a single pan-European number from any place in the Union (and later on Europe).

**ETO***European Telecommunications Office*

ETO Began operations on September 1, 1994. 21 CEPT countries have signed the MOU on the establishment of ETO.

**ETSI***European Telecommunications Standards Institute.*

The European standards Organization in the communications field, having the task of producing European Telecommunications standards (ETS), having European-wide application and acceptance, in the area of telecommunications.

**EUROBIT**

European Association of Manufacturers of Business Machines and Information Technology Industry.

**EUTELSAT***European Telecommunications Satellite Organization*

Created by the Eutelsat Convention and the related Operating Agreement.

**EXCLUSIVE RIGHTS**

An exclusive right exists where the operation of a mobile network or the provision of a mobile service within a given area is reserved by a Member State to a single public or private operator. (See draft Commission Directive of 1 December 1993 amending Directives 88/301/EEC and 90/388/EEC with regard to satellite communications).



**EXTRANET**

A collaborative, Internet-based network to link an enterprise with its suppliers, customers or other external business partners and to facilitate intercompany relationships. Extranets use Internet-derived applications and technology to become the secured extensions of internal business processes to external business partners.

**FAC/ FDC**

*Fully Allocated Costs/ Fully Distributed Costing*

A cost standard, which allocates all of an Organization's costs to services. FAC generally include the costs directly attributable to the service, plus a share of indirect costs and general overheads. The rules for determining the shares of the indirect costs and overheads are usually casually related but no entirely non-arbitrary set of rules exist.

**FCC**

*Federal Communications Commission*

Washington DC, USA regulatory agency established by the Communications ACT of 1934, charged with regulating all electrical and radio communications in the USA.

**FDMA**

*Frequency Division Multiple Access*

The commonest form of multiple access. The transponder bandwidth is divided into a number of sub-bands, each centred on its own carrier. Then, using the FDM method, a number of transmission channels are multiplexed on to each carrier.

**FINNET GROUP**

The Finnish incumbent grouping of local network operators.

**FIRST COME/FIRST SERVES LICENSING**

License award procedure, where licenses are awarded in order of application, normally within the limits of the frequencies available. This method is used extensively for private mobile radio systems and satellite services.

**FPLMT**

*Future Land Public Land Mobile Telecommunications*

A terrestrial mobile communications system that will not be fully defined until the year 2000, and which is in direct competition with satellite mobile telephone systems using LEO satellites. Now called IMT - 2000.

**FREE PHONE SERVICE**

A service that is (can be accessed) free of charge to the customer. The access code "800" is generally associated with this freephone.

**FRIACO**

*Flat-Rate Internet Access Call Origination*

**FT**

*France Télécom*

The French incumbent.

**FTC**

*Fair Trading Condition*

Modelled on Articles 81 and 82 of the EC Treaty and prohibits the abuse of a dominant market position and agreements which restrict or distort competition.

**GATEWAY**

A conceptual or logical network station that serves to interconnect two otherwise incompatible networks, network nodes, sub networks or devices. Gateways perform a protocol-conversion operation across a wide spectrum of communications functions or layers.

**GII**

*Global Information Infrastructure*

US term for worldwide information infrastructure or superhighway. See also NII

**GOLDEN NUMBERS**

Golden numbers are telephone numbers that distinguish themselves from all other numbers in a given number range because they are attractive to have, are easy to learn or remember, subjectively pleasing or are in use and known by the general public or client base. Golden numbers may have a big commercial value. For instance, the digits that relate to "FLOWERS" on the standardised alphanumeric keyboard may have special value to a flower service.

**GPS**

*Global Positioning System*

Satellite system used, inter alia, for maritime, air and terrestrial navigation providing extremely accurate location and positioning information for ships, planes, vehicles or individuals throughout the world that carry a GPS receiver.

**GREEN PAPER**

In the European Union context the European Commission consultative documents setting out basic policy goals for public debate. Key Green Papers issued in the Telecommunications Sector are the 1987 Green Paper on the development of a common market for Telecommunications services and equipment COM(87)290, the 1990 Green Paper on Satellite Communications COM(90)490, the Green Paper on a common approach in the field of mobile and personal communications in the European Union COM(94)145 and the Green Paper on the Liberalisation of Telecommunications Infrastructure and Cable Television Networks COM(94)682 Part I and II.

**GSM**

*The Global System for Mobile Communications*

The central standard, developed by ETSI, for digital, second generation, mobile systems, using TDMA techniques. Directive 87/372/EEC establishing harmonised frequency bands have supported GSM for GSM. The system supports Roaming and a broad range of features. Initially GSM stood for "Groupe Speciale Mobile" developed under the CEPT).

**HDSL**

*High-Bandwidth Digital Subscriber Line*

DSL technology, which has been standardised in Europe by ETSI using 2B1Q-coding technology, allows the provision of 2 Mbps circuits using two copper-based pairs. Seen as an alternative to optical fibre and traditional methods for the E1 connection to business customers.

**HERTZ**

1 cycle/second, measurement unit for radio frequencies. 1 kHz corresponds to 1000 Hz; 1 MHz corresponds to 1 million Hz; 1 GHz corresponds to 1 billion Hz (1000 MHz).

**HLC**

*High Level Committee*

Heads of NRA's. Since 1992 recognised as a permanent forum by Council Resolution 93/C 213/01 of July 22, 1993; OJ 1993 C 213/1. DG IV (Competition) and DG XIII (Telecommunications) jointly chair the HLC).

**HUBBING**

The routing of international traffic via an intermediate third country.

**IBC**

*Integrated Broadband Communications*

**IBPT**

*Institut Belge des Services Postaux et de Télécommunications*

The National Regulatory Authority (NRA), together with the Minister for Telecommunications and Public Undertakings.

**ICP**

*Instituto das Comunicacoes de Portugal*

The Portuguese National Regulatory Authority (NRA).

**ICPS**

*Interim Carrier Pre-Selection*

**IEC**

*Interconnection Extension Circuit*

**ILT**

*Institut Luxembourgeois des Télécommunications*

The Luxembourg National Regulatory Authority (NRA).

**IMT-2000**

*International Mobile Telecommunications 2000*

(2000 stands for 2000 Mhz, the proposed frequency, as well as the intended start date). See FPLMTS.

**IN**

*Intelligent Networks*

Centralised computing intelligence and databases supplement the basic network so that advanced telecommunications services such as Freephone can be more easily offered. The development of IN will require substantial investment. IN will allow more flexible services but will introduce greater complexity.

**INCUMBENT**

Telecommunications organizations granted special and exclusive rights by Member States or public operator(s), which enjoy a de facto monopoly before liberalization.

**INDEX**

A numerical scale used to show how a variable has changed over time against a given reference number, normally 100.

**INFRASTRUCTURE**

From a business perspective, the infrastructure is a shared resource, the state of which bounds the adaptability and change capacity of the enterprise. From a technology perspective, it is the enterprise wide technology used to support the e-business environment and includes the hardware, software, physical plant, communications platforms, network systems, and database architecture.

**INMARSAT**

*International Maritime Satellite Organization*, established by the INMARSAT Convention and the related operating agreement.

**INTEGRATION HUBS**

An emerging form of super-process ware; rather than a new technology, they are a way of architecting an integration solution. They provide real-time transformation, translation, and routing of messages across multiple enterprises. They support multiple data formats (including EDI formats and XML) and multidimensional views of the data.

**INTELSAT**

*The International Satellite Organization*

Established by the INTELSAT Convention and the related Operating Agreement.

**INTERCONNECT CHARGE**

This is the charge that one operator makes to another network operator for the conveyance of traffic over the first operator's network. Any such interconnect charge for the interconnection of two operators' network should be considered to have two components:

An initial connection charge reflecting the up-front cost of physical connection of one network to another and any consequent costs arising. A conveyance charge reflecting the transmission cost of traffic conveyed through on operators' network on behalf of another. Two further charge elements, which do not relate directly to interconnect are often incorporated into interconnect agreements:

- ◆ A tariff imbalance charge to recover the subsidies of profit making services to loss making services where such profits and losses arise out of cost and tariff imbalances. Without this charge element competitors would select "overpriced" services without contributing to the "under priced" services.
- ◆ A charge for the USO and Social Obligations required by the TO.

**INTERCONNECTION**

Used to describe any task associated with connection of two networks operated by different Organizations. Of particular concern are the commercial terms of any agreement between Organizations to interconnect their networks.

**INTERNET**

Data communications network based on the Internet Protocol TCP/IP. TCP/IP was developed as a US military computer based communications standard which has over recent years met great success in academic and later in commercial applications - particularly for Internetworking among different LAN environments and servers.

**INTRANET**

A network internal to an enterprise that uses the same methodology and techniques as the Internet. It is not necessarily connected to the Internet and is commonly secured from using firewalls. Intranets are often used in an organization's local-area networks (LANs) or wide-area networks (WANs).

**IPF**

*Interconnect Policy Forum*

A forum consisting of industry representatives and chaired by OFTEL which meets periodically to discuss commercial and regulatory aspects of interconnection which are of interest to the industry generally.

**IPRs**

*Intellectual Property Rights*

**IPSec**

*IP Security*

A working group of the Internet Engineering Task Force (IETF) that is developing a security standard for Internet Protocol (IP). Also, the security standard developed by a workgroup of the Internet Engineering Task Force (IETF). It defines protocols for authentication, privacy, and data integrity based on encryption and X.509 digital certificates.

**ISDN**

*Integrated Services Digital Network*

A networking technique that unifies data and voice communication into a single medium. Defined in the Council Resolution on the development of the integrated services digital network in the Community as a European-wide telecommunications infrastructure for 1993 and beyond (92/C 158/01). See also Council Recommendation of 5 June 1992 ...ISDN offerings in accordance with ONP principles (92/383/EEC); OJ L200/10, Common Technical Regulation for ISDN (95/526/EC); OJ 300/38. The term EURO-ISDN is used to address an ISDN implementation fully based on harmonised European standards and in accordance with the MOU on ISDN). B-ISDN is the next generation of ISDN services that allow higher bandwidth services to be provided using the ATM technology.

**IT**

An umbrella term for all types of automated information handling techniques, including computing and Telecommunications.

**ITA**

*Interim Type Approval*

Provisional approval for terminal equipment, established inter alia for GSM terminals.

**ITU**

*International Telecommunications Union*

The UNs specialized agency for telecommunications. The structure of the ITU has recently been reviewed to adapt it to the changing information and telecommunications environment. Formal changes were agreed at an Additional Plenipotentiary Conference in December 1992 and came in operation in March 1993. These have separated the ITU into three sectors: Standardisation, Radio communications and Development.

**JAVA**

A programming language based on C and developed by Sun Microsystems that extends and complements the basic capabilities of Hypertext Mark-up Language (HTML). Java has become a viable alternative to other programming languages with the rapid growth of the Internet, as it has the potential to work on an unlimited number of computing devices and operating systems.

**JV***Joint Venture***KEY**

A password or table needed to decipher encoded data. An encryption key is a string of digits that when used with a cryptographic algorithm produces cipher text.

**KPN**

The Netherlands incumbent.

**LAN***Local Area Network*

A system for linking terminals, programs, storage and geographic devices at multiple workstations over relatively small geographic areas.

**LEO***Low Earth Orbiting satellite*

Non-geostationary satellites in low-earth orbits. LEO concepts play a particular role in current proposals for satellite-based Personal Communications services.

**LLU***Local Loop Unbundling*

A service whereby a telecommunications organization provides unbundled access to its local loop to another telecommunications organization.

**LOCAL ACCESS LOSS**

In most countries, the cost attributed to the provision and maintenance of the local loop exceeds the revenues earned from tariffs charged for local retail access. Conventionally, the revenues considered in this calculation include only the initial connection and line rental charges, they exclude revenues earned from calls conveyed. The local access loss arises for four reasons:

- ♦ inefficiencies
- ♦ tariff imbalances
- ♦ loss incurred by operators to serve uneconomic customers (because of the USO)
- ♦ losses incurred by operators to serve customers whom they would serve without a USO because they are profitable once incoming and outgoing call revenues are included

**LOCAL LOOP**

A line connecting a customer's telephone equipment with the local telephone company exchange.

**LOTTERY**

License award procedure on the basis of lotteries, which has been used particularly in the United States.

**MARKET INFLUENCE**

The ability to raise prices above the competitive level in that market for a non-transitory period without losing sales to such a degree as to make this unprofitable.

**MC***Marginal Costing*

A cost standard, which measures the cost of producing one, more unit of output or the cost saved by producing one less unit of output holding constant the production levels of all other products and services to the firm.

**MCN***Micro Cellular Networks*

Cellular Systems where normal-sized cells in the cellular mobile radio network are split into very small geographical areas of between a few hundred metres up to a few kilometres ("micro-cells"). This technique confers higher network capacities, lower power transmitters, higher frequency efficiency through greater frequency re-use and longer air-time (or lighter handsets) for a given battery technology.

**Mbps***Megabits per second***MDF***Main Distribution Frame*

The apparatus in the local concentrator (exchange) building where the copper cables terminate and cross connection to other apparatus can be made by flexible jumpers.

**MFJ***Modified Final Judgement*

USA: The Court-approved antitrust (Competition Law) "consent order" separating the local and long distance businesses of AT&T ("Divestiture") effective January 1984.

**MIGRATION**

The movement of telephone numbers from one range (often a non-specified range) to another (specified) range.

**MNO***Mobile Network Operator*

Operator of mobile network infrastructure supporting the transmission and provision of Radio communications services. The activities of MNO's in most cases also integrate mobile Service Provider (SP) functions (direct service to end-users) within their overall business.

**MNP***Mobile Number Portability*

**MOBILE DATA**

Specific radio-based communications services for numeric and alphanumeric data transmission. Such services are currently used primarily for closed user group applications, through for example, remote database access or data/ E-mail transfer between portable computers and a home network.

**MODEM**

A device which converts digital signals from a data-transmitting terminal into modulated analogue signals which can be carried by a public telephone network.

**MOU**

*Memorandum of Understanding*

MOUs in the telecommunications field in Europe have been entered into between operator's and/ or equipment manufacturers or other market participants for the roll out of new products and services.

**NARROWBAND**

A service or connection allowing only a limited amount of information to be conveyed, such as for telephony. This compare with broadband which allows a considerable amount of information to be conveyed.

**NCA**

*National Competition Authority*

In 1962, the Council adopted Regulation 17/62; JO 1962, 13/204; OJ 1959-62, 87, which empowered the Commission, acting in close and constant liaison with the competent authorities of the Member States, to take the requisite measures to apply the competition rules. The dividing line between the Commission's and the NCA's competence to apply Articles 81 and 82 of the Treaty is set out in Article 9(3) of Regulation 17).

**NETWORK OPERATORS**

Operators that install, manage and operate their own telecommunications transmission network to provide public telephony services or public network services.

**NETWORK SERVICES**

The conveyance of calls, messages and signals over a telecommunications network, including any necessary switching; network services may be network interconnection services, which are provided to other network operators to enable calls and associated functions to be passed through interconnected networks, or basic retail network services which are provided to other customers such as end users or service providers.

**NFG**

*Network Futures Group*

An industry Committee formed to advise OFTEL and the industry on generic issues associated with interconnection and interoperability.

**NGS**

*Next Generation Switches*

**NII**

*National Information Infrastructure*

The US concept for ubiquitous availability of communications infrastructure (both telecommunications and cable) for the whole range of voice, data, and multi-media services, as proposed by the Clinton Administration. Also known as Information Superhighway.

**NMT**

*Nordic Mobile Telephone*

Analogue Cellular System standard.

**NON-GEOGRAPHIC SERVICES**

Telecommunications services that are numbered from national city area or local community.

**NRA**

*National Regulatory Authority*

Directive 88/301 and 90/388 both require Member States to ensure the separation of regulatory activities from the operation and provision of services by Telecommunications Organizations.

**NTA**

*National Telecom Agency (Telestyrelsen)*

The Danish National Regulatory Authority (NRA)

**NTP**

*Network Termination Point*

Used in a regulatory sense to refer to the physical and logical point at the boundary between a customer's system and the public Telecommunications Network. Precise definitions are service dependant.

**NUA**

NUA is the authoritative online source for information on Internet demographics and trends. NUA was founded in 1996. NUA Internet Surveys was acquired in June 2001 by the Scope Communications Group, Ireland's leading IT Media Company.

**NUMBER PORTABILITY**

The possibility for a subscriber to keep his telephone number while changing operator, type of service, and/or location.

**OCB**

*Outgoing Calls Barred*

Used by all operators as an alternative to disconnection of service. If a customer fails to settle their account within a specified time period, the operator will offer OCB with a repayment plan. If a customer defaults on that payment plan, the operator may disconnect the service.

**ODTR**

*Office of the Director of Telecommunications Regulation*  
The Irish National Regulatory Authority (NRA).

**OFTEL**

*Office of Telecommunications*

The UK National Regulatory Authority (NRA), together with the Department of Trade and Industry.

An independent regulatory body headed by a semi-independent government official (the Director General of Telecommunications).

OFTEL is acting in collaboration with the Government Department, DTI and has the functions of advising the DTI on the grant of telecommunications licenses, monitoring the operation of the networks, enforcing licenses and recommending changes. The Competition and Services Utilities Act 1992 has increased the power of OFTEL in the area of consumer protection.

**ONA**

*Open Network Architecture*

USA: FCC-mandated programme for RBOC's to develop non-discriminatory standards and procedures for access, interconnection and use of "bottleneck" facilities.

**ONP**

*Open Network Provision*

Defined in Council Directive 90/387/EEC.

A developing set of pan-European standards for ensuring the provision of the Network infrastructure by European Telecommunications administrations to users and competitive service providers on terms equal to those for the administration themselves.

**OPTA**

*Onafhankelijke Post en Telecommunicatie Autoriteit*

The Netherlands National Regulatory Authority (NRA).

**OPTICAL FIBRE**

Cable made of glass fibres through which signals are transmitted as pulses of light. It is a broadband medium that can easily provide capacity for a large number of channels.

**OSI**

*Open Systems Interconnection model*

A standard committee of Member States national regulatory authorities (NRA) and others (EC, PTOs and user representatives), which supervises the European Commission's development of the ONP programme. This covers measures aimed at ensuring that services which are not yet required to be liberalized in all Member States are regulated in such a way as to guarantee their supply in accordance with certain standards of objectivity, transparency and non-discrimination.

**OTE**

The Greek incumbent.

**PABX**

*Private Automatic Branch Exchange*

Telephone switch providing speech connections within an Organization, while also allowing user access to both public switches and private network facilities outside the Organization. The terms EPABX, PBX and PABX are used interchangeably.

**PAC**

*Payphone Access Charge*

A charge made by British Telecom to compensate for freephone calls from payphones to cover the costs of running and maintaining BT payphones. It is charged to third parties who use freephone numbers originating on payphones. BT makes a corresponding internal charge. The PAC is referred to in BT's Carrier Price List as the Public payphone Supplementary Call Conveyance Charge (PPSCCC).

**PACKET SWITCHING**

A data communications technique where a message is broken down into fixed-length units which are then transmitted to their destination through the fastest route: although all units in a message may not travel the same pathway, the receiving station ascertains that all units are received and in proper sequence before forwarding the complete message to an addressee.

**PAGING**

Radio communications based service involving non-speech, one-way personal selective calling with a tone, vibration or visual alert. The system may either simply inform the user that someone is trying to contact him or her or may also carry a numeric or alphanumeric message.

**PAMR**

*Public Access Mobile Radio*

Provides shared use of a common radio communications system for activities similar to PMR. By providing a shared use PAMR can make more efficient use of the frequencies available by allocating conversations to free channels within a group of channels available. See TETRA.

**PCN**

*Personal Communications Network*

A telecommunications network in which the user terminal is a light, handheld portable device that remains with the individual as he or she moves along.

**PCS**

*Personal Communications Services*

A generic term for services which provide person-to-person calling, independent of location, terminal used, the means of transmission (wired or wireless) and/or the choice of technology.

**PDA***Personal Digital Assistants*

Portable computer-based and often hand-held devices combining a wide range of functions, such as diary, address book, word processor, calculator, etc. and which may support radio-based links for data transmission and/or to Local Area Networks.

**PDC***Personal Digital Cellular*

Japanese mobile digital standard, which has been developed in parallel with the Personal Handy Phone (PHP) standard (similar to a two-way Telepoint Application) and the N-Star Mobile Satellite System.

**PERSONAL NUMBERS**

A user with a personal number can instruct all calls to that number to be diverted to any other number (including a voice mail box).

**PHYSICAL COLLOCATION**

A service offered by a network operator to interconnected network operators whereby the latter may place, install and maintain equipment, software, and databases on its premises in order to interconnect with its network.

**PIN***Personal Identification Number*

PIN is used in GSM and other subscriber card-based systems to ascertain identity of subscribers and check authorisation of access.

**PMR***Private Mobile Radio*

Private radio communications system, usually operating on a local or regional basis from a single or small number of radio channels. Users normally have to wait until a channel is clear before they can use it, as the base station can only communicate with individual mobiles. Large users may manage many mobiles from a single base station (taxi firms). Communication is generally limited to a single (closed user) group.

**POI***Point Of Interconnection*

European Interconnection Forum's "Framework Interconnection Guidelines" description for the actual connection of one network to another network.

**POTS***"Plain Old Telephone Service"***PPN***Personal and Portable Numbers*

Personal and portable numbers are numbers, which are to be independent of network, service provider, location and terminal used, in contrast to current numbering, which are country, network, and operator specific. Such personal numbers would be of general application (and

therefore portable) across mobile and fixed network services, providing full personal mobility and therefore a key element in Universal Personal Telecommunications (UPT).

**PSTN***Public Switched Telephone Network*

The complete public telephone system, including telephones, local and trunked lines and exchanges.

**PT***Portugal Telecom*

The Portuguese incumbent.

**PTO***Public Telecommunications Operator***PTS***Post- och Telestyrelsen.*

The Swedish National Regulatory Authority (NRA).

**PTT***Post, Telegraph and Telephone Administration*

Telecommunications Operator providing public services with special rights or duties.

**PUBLIC FIXED NETWORK SERVICES**

The conveyance of calls, messages and signals over a telecommunications network, including any necessary switching; they may be network interconnection services, which are provided to other network operators to enable calls and associated functions to be passed through interconnected networks, or basic retail network services, which are provided to other customers such as end users or service providers.

**PUBLIC FIXED VOICE TELEPHONY**

A service available to the public for the direct transport on a commercial basis of real-time speech via the public switched network, such that any user can use equipment connected to a network termination point at a fixed location to communicate with another user of equipment connected to another termination point.

**PUBLIC MOBILE TELEPHONY NETWORK**

A public telephone network where the network termination points are not at fixed locations.

**PUBLIC MOBILE TELEPHONE SERVICE**

A telephone service whose provision consists, wholly or partly, in the establishment of radiocommunications to one mobile user, and makes use wholly or partly of a public mobile telephone network.

**PUBLIC TELECOMMUNICATIONS NETWORK**

A telecommunications network used, in whole or in part, for the provision of publicly available telecommunications services.

**QMNC***Qualifying Multinational Corporate Customers*

Selected multinational customers meeting certain criteria and eligible to be direct customers of the joint venture.

**QoS**

The ability to define a level of performance in a data communications system. In e-business, QoS governs access as the site reaches or exceeds capacity and sets priorities for user sessions.

**RACE***Research and Development Programme in Advanced Communications Technologies for Europe*

The RACE programme is defined in Council Decision 91/352/EEC of 7 June 1971 adopting a specific research and technological development programme in the field of telecommunications technologies. Within the mobile and Personal Communications line, a number of projects participate in the work towards third generation mobile systems (UMTS and MBS). These include MONET, ATDMA, CODIT, MBS, SAINT, TSUNAMI and PLATON.

**RADIOCOM 2000**

Analogue Cellular System standard.

**RBOC***Regional Bell Operating Companies*

USA: The seven regional holding companies that control the various BOC's after the court-ordered break-up of AT&T in 1984, following the "MFJ" order. Each RBOC owns two or more "BOCs", but the terms are often used interchangeable, along with RHC (Regional Holding Company).

**RE-FARMING**

The re-allocation of radio spectrum (in particular the re-allocation of radio spectrum currently licensed for use with equipment complying with GSM or DCS 1800 standards to allow the use of equipment complying with 3G standard).

**Reg TP***Regulierungsbehörde für Telekommunikation und Post*

The German National Regulatory Authority (NRA).

**RES***Radio Equipment and Systems Committee*

ETSI Technical Committee (TC), with broad responsibilities in the field of Radio communications equipment and systems.

**RESALE**

This concept relates to the use by an independent service provider of a leased line, which is then made available to another user. Value added features may or may not be added. Resale is now permitted in the UK except for specific international applications.

**RIO***Reference Interconnection Offer*

The terms and conditions for interconnection offered by operators with SMP status for the purpose of the Interconnection Directive.

**ROAMING**

Facility, supported by commercial arrangements between operators and/or service providers, which enables a subscriber to use his/her radio telephone equipment on any other network which has entered into a roaming agreement in the same or another country for both outgoing and incoming calls.

**RTT***Road Transport Telematics*

A range of programmes, aimed at developing the radio-based technology to provide road users with up to date information (traffic conditions, route guidance, etc.) and to support traffic management and control. Particular examples of these projects are the EU-programme DRIVE - Dedicated Road Infrastructure for Vehicle Safety in Europe, and within the EUREKA programme - PROMETHEUS.

**SCRAMBLING**

The act of encoding a signal (eg. a TV programme) so that it can only be accessed by those customers with the necessary decoding equipment.

**SDH***Synchronous Digital Hierarchy*

Synchronous transmission system allowing multiplexing of signal at different speeds over the same medium, on an "add-drop" basis. Under SDH, user information is grouped within "virtual containers" (VCs), which in turn can be encapsulated into "frames" containing monitoring information for transmission at higher speed.

**SERVICE PROVIDERS**

Service providers offer services to end users involving the use of mobile networks and services. The role of service providers may vary between that of airtime reseller to the provision of sophisticated value added services. Service providers may be independent or form part of a mobile network operation.

**SES***Satellite Earth Station Committee*

ETSI Technical Committee (TC), covering inter alia mobile satellite communications equipment.



**SHARED COST SERVICE**

Service for which the cost of the call are shared between the caller and the called party, generally resulting in the caller paying local rate and the called party being charged with any additional costs.

**SIM**

*Subscriber Identity Module*

**SINGLE TANDEM CONVEYANCE**

A service provider by a network operator to interconnected network operators whereby a call passed on to the operator's network at a tandem exchange (i.e. one that routes calls between exchanges but not having direct connections to end users) is passed on to a local exchange (i.e. one that does have direct connections to end users).

**SGMS**

*Second Generation Mobile Systems*

A generic term encompassing digital mobile networks and technology currently being deployed. It includes GSM, DCS 1800, ERMES, DECT, TETRA, TFTS, and DSRR.

**SIM-CARD**

*Subscriber Identification Module.*

A plastic card containing a microprocessor and memory for use with GSM and DCS 1800 networks. The card contains details of the subscriber, the subscriber's services and personal telephone directories. Only through the use of a legitimate card, can a user enable a piece of equipment for use on the network. In GSM the SIM is realized on a SM (Smart Card) that can be used in any GSM terminal.

**SMART CARD**

A plastic card with built-in programmable chip used to enable subscriber access to various communications services especially in the financial and leisure industries.

**SMG**

*Special Mobile Group*

ETSI Technical Committee (TC), with special responsibility for GSM, DCS 1800, and the development of UMTS.

**SOCIAL OBLIGATION**

Obligations imposed upon the TO to provide such services as public telephones, provision of special equipment for disabled people, emergency service numbers etc., that would not be provided under strictly commercial circumstances.

**SONERA**

The Finnish incumbent long-distance operator.

**SP**

*Service Provider*

Service Providers offer services to end users involving

the use of mobile networks and services. The role of service providers may vary between that of airtime reseller to the provision of sophisticated value added services. Service Providers may be independent or form part of a mobile network operation.

**SPECIAL RIGHTS**

A special right exists where a Member State within a given area designates, other than according to objective, proportional, transparent and non-discriminatory criteria, several competing undertakings or limits the number other than according to such criteria or grants one or more of these undertakings a lasting particular advantage other than those advantages referred to in Article 87 of the EEC Treaty. (See draft Commission Directive of 1 December 1993 amending Directives 88/301/EEC and 90/388/EEC with regard to satellite communications - see also Exclusive Rights)

**SS7**

*Signalling System 7*

Major digital protocol/ signalling system for managing and transmitting control and routing information in networks.

**SUNK COST**

These are costs, which an Organization is either committed to paying of has paid.

**TA**

*Telekom Austria AG*

The Austrian incumbent.

**TAC**

*The Telecommunications Administration Centre.*

*(Telehallintokeskus - Teleförvaltningen)*

The Finnish National Regulatory Authority (NRA).

**TACS**

*Total Access Communication System.*

**TACS**

*Telecommunications Advisory Committees*

Independent regional advisory bodies set up by OFTEL.

**TDMA**

*Time Division Multiple Access*

Special coding technique for digital radio transmission whereby information in digital form is packed and transmitted during pre-arranged time periods. The packaged information is rearranged so that speech and data appears continuously. TDMA is the transmission technique used for the GSM system.

**TELECOMMUNICATIONS**

Conveyance of speech, music, and other sounds, visual images or signals by electric, magnetic, electro-magnetic, electro-chemical or electro-mechanical means.

**TELECOMMUNICATIONS NETWORK**

Transmission systems and, where applicable, switching equipment and other resources which permit the conveyance of signals between defined termination points by wire, by radio, by optical or by other electromagnetic means. (See for further information Article 2(1)© of the Interconnection Directive).

**TELE DANMARK**

The Danish incumbent.

**TELEFÓNICA**

The Spanish incumbent.

**TELEPOINT**

Limited mobility service involving the use of a cordless telephone, carried by the user, to access the public network from any point within range of shared radio base-stations. These have, so far, been developed mainly in town centres, railway stations etc.

**TELIA**

The Swedish incumbent.

**TEN**

*Trans-European Network*

Generic term for interconnected networks and services available on a pan-European basis.

**TERMINAL ID**

The EIN Equipment Identification Number. Each piece of GSM mobile or transportable equipment (the terminal) has certain information programmed during manufacture which can be used to uniquely identify the unit and which the network uses to track stolen equipment and to disable in the event of certain malfunctions.

**TETRA**

*Trans European Trunked Radio*

Digital trunked mobile PAMR standard being developed by ETSI. TETRA is a mobile communications system to be used for applications on a shared basis, such as by closed user groups.

**TFTS**

*Terrestrial Flight Telephone System*

A digital APC standard developed by ETSI and now entering into service with a number of airlines. The system comprises airborne equipment and a series of ground stations through which telephone users whilst in flight can initiate calls.

**TGS**

*Third Generation Systems* (See UMIS.)

**THIRD PARTY**

A firm that wishes to provide end-users with a digital service in respect of which the use of Access Control services is necessary. Third parties could be retailers or banks, for example.

**THIRD GENERATION MOBILE SYSTEMS**

A European 3G mobile communications system will provide an enhanced range of multimedia services (eg. High speed Internet access). 3G networks are expected to enter service in 2002/3 using radion spectrum in the 2GHz bands.

**TI**

*Telecommunications Infrastructure*

The underlying physical components associated with the provision of telecommunications transmission capacity. The establishment of telecommunications infrastructure may require rights of way, frequency assignments, ducts, manholes, poles, cables, aerials, towers, buildings etc. Telecommunications infrastructure specifically excludes switching equipment associated with the provision of switched telecommunications services. See also Alternative infrastructure and public telecommunications infrastructure.

**TI**

*Telecom Italia*

The Italian incumbent.

**TKC (TKK)**

*Telekom-Control GmbH.*

The Austrian National Regulatory Authority (NRA).

**TO**

*Telecommunications Organisations*

Defined in Directive 90/388/EEC as public or private bodies to which Member States grant special or exclusive rights for the provision of a public telecommunications network and, when applicable service.

**TRANSCONTROL**

The process of converting digital television services from the format provided by on broadcaster into a format such that it can be re-transmitted by another broadcaster.

**TRANSIT**

A transit service is a conveyance service provided by a network between two points of interconnection. It is, therefore, a service that links two networks that are not in themselves interconnected.

**TRUNK NETWORK**

That part of a telecommunications network which provides connections between customer-serving exchanges.

**TROMBING**

Sending traffic, which comes from a fixed and is destined for a mobile network in the same country via a second country to take advantage of beneficial accounting rates for termination of international traffic on mobile networks.

**TS***Telecommunications Services*

According to Commission Directive 90/388 (as amended by Commission Directive 94/46) telecommunications services means services whose provision consists currently, wholly or partly, in the transmission and routing of signals on the public telecommunications networks by means of telecommunications processes, with the exception of radio and television broadcasting to the public. In this context, the term telecommunications services is generally understood to be concerned with the provision of transmission, switching and other activities for the purpose of the conveyance of signals, without regard to the content of the messages transmitted.

**TSB**

*Telecommunications Standardisation Bureau.* (See CCITT.)

**UIFS***Universal International Freephone Service*

ITU-T Recommendation establishing a global Freephone service behind the country code 800. The implementation is a matter of commercial negotiation between individual operators.

**UMTS***Universal Mobile Telecommunications System*

A technology and standard for third generation mobile digital systems, currently under development within ETSI and by the RACE programme. UMTS should support full personal communications services, delivered over a combination of fixed and mobile networks. Work in the framework of the ITU in this field is carried out under Future Public Land Mobile Telecommunications System. (FPLMTS).

**UNICE**

*Union of Industrial and Employers Confederations of Europe*

**UNIVERSAL SERVICE**

The provision of telecommunications services permitting access to a defined minimum service of specified quality to all users everywhere and, in the light of specific national conditions, at an affordable price. The notion of Universal Service also includes, in particular, service to disadvantaged users such as deaf and other disabled users. Political orientations concerning the scope of Universal Service have been provided by Council Resolution 94/C 48/01 and the associated Commission statement.

**UNIX**

An operating system originally designed by Bell Laboratories, Unix has proven to be adaptable to a variety of platforms. It is the dominant operating system for critical applications, servers, and high-end workstations because of its scalability and support of complex processing.

**UPT***Universal Personal Telecommunications*

ITU-T Recommendation for establishing a personal communications environment where the individual can be reached through a single (personal) number independent of network or location.

**URL***Uniform Resource Locator*

The character string that identifies an Internet document's exact name and location, in the form *http://* allowed by a domain name or IP address.

**USER**

Users means end-users, including consumers (e.g. residential end-users), and service providers, including telecommunications Organizations where the latter provide services which are or maybe provided by others. For further definition see Article 2(1)(e) of the Interconnection Directive.

**USF***Universal Service Fund*

Special arrangements for collecting contributions to the cost of Universal Service Obligations and transferring funds to those network operators taking on those obligations. Universal Service Funds are in operation in a number of countries, e.g. in US and Australia, and are normally established under strict regulatory oversight. An alternative or supplement to access charges (which are normally paid directly to the operators of network infrastructure as a contribution to their cost of Universal Service Obligations). See also Access Charges.

**USO***Universal Service Obligation*

The Council Resolution of 7 February 1994, 94/C 48/06, OJ C 48/1, 16.02.94 on the development of universal service in the Telecommunications sector, defined a USO as an obligation to provide a defined minimum service to all users at an affordable price. By definition, this would provide an obligation on the TO to provide voice telephony services at a "loss" or under conditions falling outside normal commercial conditions to some subscribers.

**VAS**

*Value Added Service*

**VERTICAL INTEGRATION**

Where a single company is active in more than one stage in the production and supply of a good or service eg. where a network operator also provides enhanced services which are carried over the network or supplies the consumer equipment needed to access services it provides.

**VIRTUAL COLLOCATION**

A service offered by a network operator to interconnected network operators whereby the latter may select equipment, software, and databases to be placed, installed and maintained by the former on its premises in order to allow the latter to interconnect with its network.

**VOICE MAIL**

Facility to leave a voice message which can be accessed from different locations.

**VSAT**

*Very small Aperature Terminal*

A technology offering two-way satellite Internet access.

**WARC 92**

*World Administrative Radio Conferences*

Global meetings within the framework of the ITU. Following the recent changes in ITU, these meetings are now referred to as World Radio Conferences (WRCs). WARC 92 produced a number of agreements concerning mobile and other, more specific allocations at both lower and higher frequencies. These changes will in time permit wider use of the band 1-3 GHz for mobile services, both terrestrial and satellite based.

**WIRELESS PBXS**

Private mobile communications system providing local area networking; where cabled connections between or within sites are replaced by radio links; a *HiperLan* system specified by *ETSI* refers to Radio communications sub-systems intended to provide high speed, short distance links between computer systems. *Wireless Public Branch exchanges (PBXs)* are telephone switching systems typically in customer premises providing radio-based links between subscriber equipment, private mobile communications systems and/or the public network.

**WLL**

*Wireless Local Loop*

The addition of a radio link to a fixed network in order to provide a wireless connection for part or all of the local loop, for instance between the chain and the home. See DECT.

**X-25**

CCITT recommendation that specifies the interface between user data terminal equipment and packet-switching data circuit-terminating equipment.

**X-400**

An OSI and International Telecommunications Union (ITU) standard messaging protocol that allows electronic mail to move between different mail systems.

**X-509**

The certificate authority standard administered by the International Telecommunications Union (ITU). The X-509 Certificate is an (ITU) standards-based file format binding a user or device to a public key.

**XDSL**

A collective term for all types of digital subscriber lines, including asymmetric digital subscriber line (ADSL), symmetric digital subscriber line (SDSL), and high-data-rate digital subscriber line (HDSL).

**ZERO LATENCY**

A business process concept where redundant processes are eliminated and human tasks are automated or streamlined to reduce latency throughout the supply chain to the customer.

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**Appendix B**  
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**Appendix C**

**List of Illustrations**

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**Appendix D**

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British Airways/Dan Air Case	Case IV/M.278 (1993)	OJ C 68/5
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BT/MCI	Decision 94/579 (1994)	OJ L 223/36
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Night Services	Decision 94/663 (1994)	OJ L 259/20
Nordic Satellite Distribution	Decision 96/177 (1996)	OJ L 53/20





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Peugeot SA v. Commission	Case C-322/93 (1994)	ECR I-2727
Phoenix/Global One	Decision 96/547 (1996)	OJ L 239/57
Portugal v. Commission	Case C-12/96 (1996)	OJ C 95/5
Portuguese Telecommunications	Decision 97/310 (1997)	OJ L 133/19
Port of Rødby	Decision 94/119 (1993)	OJ L 55/52



Radio Telefis Eireann v. Commission	Cases C-241-2/91	ECR I-743
RIT v. GB-INNO-BM	Case C-18/88 (1991)	ECR I-5941



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**Appendix E**

**Register, Basic Policy Documents**

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Green Paper on the Development of the Common Market for Telecommunications Service and Equipment  
COM (87) 290, 30.06.87

Green Paper on a Common Approach in the Field of Satellite Communications in the  
European Community  
COM (90) 490, 20.11.90

1992 Review of the Situation in the Telecommunications Sector:  
Communication by the Commission.  
SEC (92) 1048, 21.10.92

Communication to the Council and European Parliament on the Consultation on the Review of the Situation in the  
Telecommunications Sector.  
COM (93) 159, 28.04.93

Towards Cost Orientation and the Adjustment of Pricing Structures: Telecommunications Tariffs in the Community.  
Communication from the Commission.  
SEC (92) 1050, 15.07.92

Developing Universal Service for Telecommunications in a Competitive Environment.  
Communication to the Council and European Parliament.  
COM (93) 543, 15.11.93

Green Paper on a Common Approach to Mobile and Personal Communications in the European Union.  
COM (94) 145 final, 27.04.94

Communication on the Consultation on the Green Paper on Mobile and Personal Communication in the European Union.  
COM (94) 492 final, 23.11.94

Green Paper on the Liberalization of Telecommunications Infrastructure and Cable TV Networks - Part 1: Principle and Timetable.  
COM (94) 440, 25.10.94

Green Paper on the Liberalization of Telecommunications Infrastructure and Cable TV Networks - Part 2: A Common Approach  
to the Provision of Infrastructure in the European Union.  
COM (94) 682, 25.01.95

Communication of the Consultation on the Green Paper on the Liberalization of Telecommunications Infrastructure and Cable TV  
Networks.  
COM (95) 158 final, 03.05.95

Communication on the Future development of the Market of directories and other Telecommunications Information Services in a  
Competitive Environment.  
COM (95) 431 final, 10.10.95

Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions:  
"Universal service for Telecommunications in the perspective of a fully liberalized environment - essential elements of the  
Information Society".  
COM (96) 73 final, 13.03.96

Green Paper on the Protection of Minors and Human Dignity in Audio-Visual and Information Services.  
COM (96) 483, 14.10.96

Green Paper on a Numbering Policy for Telecommunications Services in Europe. "Towards a European Numbering  
Environment"  
COM (96) 590 final, 20.11.96

Communication on "Europe at the Forefront of the Global Information Society: Rolling Action Plan".  
COM (96) 607 final, 27.11.96

Communication of 27 November 1996 on assessment criteria for national schemes for the costing and financing of universal service in Telecommunications and guidelines for the Member States on the Operation of such schemes.

COM (96) 608

Progress Report 1995 on the approximation of the laws of the Member States concerning Telecommunications terminal Equipment, including the mutual recognition of their conformity supplemented in respect of satellite earth station equipment.

COM (96) 114, 27.03.96

Communication on harmful and illegal content on INTERNET.

COM (96)487, 16.10.97

Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions – EU Action Plan: Satellite Communications in the Information Society.

COM (97) 91, 05.03.97

Draft Communication from the Commission on the application of the competition rules to access agreements in the Telecommunications Sector - framework, relevant markets and principles.

OJ C 76, 11.03.97

Communication from the Commission to the European Parliament and the Council regarding the consultation on the Green Paper on a Numbering Policy for Telecommunications services in Europe.

COM (97) 203, 21.05.97

Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on the further development of mobile and wireless communications – Challenges and choices for the European Union.

COM (97) 217, 29.05.97

Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on the implementation of the Telecommunications Regulatory Package.

COM (97) 236, 29.05.97

Communication from the Commission to the European Parliament and the Council – The World Radiocommunications Conference 1997.

COM (97) 304, 18.06.97

Communication on security and trust in Electronic Communications.

COM (97) 503, 08.10.97

Communication from the Commission to the Council, the European Parliament, the Economic and social Committee and the Committee of the Regions on the implementation of the Telecommunications Regulatory Package: first update.

COM (97) 504, 08.10.97

Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions Strategy and Policy Orientations with regard to the further development of mobile and wireless communications (UMTS). Outcome of the public consultation and proposals for creating a favourable environment.

COM (97) 513, 15.10.97

Communication on the outcome of consultation on the Green Paper on the protection of minors and human dignity in the context of audio-visual and information services.

COM (97) 570, 18.11.97

Green Paper on the convergence of the Telecommunications, Media and Information Technology (IT) Sectors.

COM (97) 623, 03.12.97

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**Appendix F**

**Register, Basic Framework Documents**

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White Paper on Growth, Competitiveness, and Employment.  
COM (93) 700, 05.12.93

The Bangemann Group Report on Europe and the Global Information Society.  
RECOMMENDATIONS TO THE EUROPEAN COUNCIL, 26.05.94

The Commission Communication on Europe's way to the Information Society.  
COM (94) 347 final, 17.04.94

### **Pictures**

The pictures not quoted in the text are taken from

“The European Commission: Information Society Project Office NEWS”



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**Appendix G**

**COM Documents from the European Commission**

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Proposal for a European Parliament and Council Directive on Interconnection in Telecommunication with regard to ensuring universal service and interoperability through application of the principles of Open network Provision (ONP).

COM (95) 379

Proposal for a European Parliament and Council Directive on a Common framework for General authorizations and individual licenses in the field of Telecommunications Services.

COM (95) 545

Communication to the European Parliament, the Council, the Economic and Social Committee and the committee of the Regions – “Universal Service for Telecommunications in the Perspective of a fully Liberalized Environment”.

COM (96) 073

Amended Proposal for a European Parliament and Council Directive on Interconnection in Telecommunications with regard to Ensuring Universal Service and Interoperability through application of the Principles of Open Network Provision (ONP).

COM (96) 121

Amended Proposal for a European Parliament and Council Directive on a Common framework for General Authorizations and Individual Licenses in the Field of Telecommunications Services.

COM (96) 342

Communication from the Commission to the Council and the European Parliament on “Standardization and the Global Information Society: The European Approach”.

COM (96) 359

Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on “The Implication of the Information Society for European Union Policies”

COM (96) 395

Proposal for a European Parliament and Council Directive on the Application of ONP to Voice Telephony and on the Universal Service for Telecommunications in a Competitive Environment.

COM (96) 419

Opinion of the Commission pursuant to Article 189b(2), (d) of the EC Treaty on the European Parliament’s amendments to the Council’s common position regarding the Proposal for a European Parliament and Council directive on Interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP).

COM (96) 535

Communication from the European Commission on “Europe at the Forefront of the Global Information Society: Rolling Action Plan”

COM (96) 607

Communication from the Commission on Assessment Criteria for National Schemes for the Costing and financing of Universal Services in Telecommunications and Guidelines for the Member States on Operation of such Schemes.

COM (96) 608

TELECOMMUNICATIONS: OPEN NETWORK PROVISION FOR LEASED LINES.

Telecommunication on the Future development of the Market of directories and other Telecommunications Information Services in a Competitive Environment.

COM (95) 431 final, 10.10.95

Green Paper on the Protection of Minors and Human Dignity in Audio-Visual and Information Services.

COM (96) 483, 14.10.96

Green Paper on a Numbering Policy for Telecommunications Services in Europe. “Towards a European Numbering Environment”

COM (96) 590 final, 20.11.96

Communication on "Europe at the Forefront of the Global Information Society: Rolling Action Plan".  
COM (96) 607 final, 27.11.96

Proposal for a Directive of the European Parliament and of the Council amending Directive 97/33/EC with regard to operator number portability and carrier pre - selection.  
COM (97) 480, 01.10.1997

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Appendix H

**Chronological List of EC Directives, Decisions, Resolutions,  
and Recommendations in the Field of Telecommunications**

since 1984

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COUNCIL RECOMMENDATION of 12 November 1984 concerning the implementation of harmonization in the field of telecommunications.  
84/549/EEC; OJ L298/49, 16.11.1984

COUNCIL RECOMMENDATION of 12 November 1984 concerning the first phase of opening up access to public telecommunications contracts.  
84/550/EEC; OJ L298/51, 16.11.1984

COUNCIL DECISION of 25 July 1985 on a definition phase for a Community action in the field of telecommunications technologies - R & D programme in advanced communication technologies for Europe.  
RACE 85/372/EEC; OJ L210/24, 07.07.1985

COUNCIL RESOLUTION of 9 June 1986 on the use of videoconference and videophone techniques for intergovernmental applications.  
86/C 160/01; OJ 160/01, 27.06.86

COUNCIL DIRECTIVE of 24 July 1986 on the initial stage of the mutual recognition of type approval for telecommunications terminal equipment.  
86/361/EEC; OJ L217/21, 05.08.86

COUNCIL REGULATION of 27 October 1986 instituting a Community programme for the development of certain less-favoured regions of the Community by improving access to advanced telecommunications services (STAR programme).  
3300/86/EEC; OJ L305/1, 31.10.86

COUNCIL DIRECTIVE of 3 November 1986 on the adoption of common technical specifications of the MAC/packet family of standards for direct satellite television broadcasting.  
86/529/EEC; OJ L311/28, 06.11.86

COUNCIL DECISION of 22 December 1986 on standardization in the field of information technology and telecommunications.  
87/95/EEC; OJ L36/31, 07.02.87

COUNCIL RECOMMENDATION of 22 December 1986 on the coordinated introduction of the Integrated Services Digital Network (ISDN) in the European Community.  
86/659/EEC; OJ L382/36, 31.12.86

COUNCIL RECOMMENDATION of 25 June 1987 on the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community.  
87/371/EEC; OJ L196/81, 17.07.87

COUNCIL DIRECTIVE of 25 June 1987 on the frequency to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the European Community.  
87/372/EEC; OJ L196/85, 17.07.87

COUNCIL DECISION of 5 October 1987 introducing a communications network Community programme on trade electronic data interchange systems (TEDDIES).  
87/449/EEC; OJ L285/35, 08.10.87

COUNCIL DECISION of 14 December 1987 on a Community programme in the field of telecommunications technologies -research and development (R & D) in advanced communications technologies in Europe (RACE programme).  
88/28/EEC; OJ L16/35, 21.01.88

COMMISSION DIRECTIVE of 16 May 1988 on competition in the markets in telecommunications terminal equipment.  
88/301/EEC; OJ L131/73, 27.05.88

COUNCIL RESOLUTION of 30 June 1988 on the development of the common market for telecommunications services and equipment up to 1992.  
88C 257/01; OJ C257/1, 04.10.88

COUNCIL DECISION of 5 April 1989 amending Decision 87/499/EEC introducing a communications network Community programme on trade electronic data interchange systems. (TEDDIES).  
89/241/EEC; OJ L97/46, 11.04.89

COUNCIL RESOLUTION of 27 April 1989 concerning standardization in the fields of information technology and telecommunications.  
89/C 117/01; OJ C117/1, 11.05.89.

COUNCIL DECISION of 27 April 1989 on high-definition television.  
89/337/EEC; OJ L142/1, 25.05.89

COUNCIL DIRECTIVE of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility.  
89/336/EEC; OJ L139/19, 23.05.89

COUNCIL RESOLUTION of 18 July 1989 on the strengthening of the coordination for the introduction of the Integrated Service Digital Network (ISDN) in the European Community up to 1992.  
89/C 196/04; OJ C196/4, 01.08.89

COUNCIL DECISION of 7 December 1989 on the common action to be taken by the Member States with respect to the adoption of a single world-wide high-definition television production standard by the Plenary Assembly of the International Radio Consultative Committee (CCIR) in 1990.  
89/630/EEC; OJ L363/230, 13.12.89

COUNCIL RESOLUTION of 22 January 1990 concerning Trans-European networks.  
90/C27/05; OJ C27/8, 06.02.90

COUNCIL RESOLUTION of 28 June 1990 on the strengthening of the Europe-wide cooperation on radio frequencies, in particular with regard to services with pan-European dimension.  
90/C 166/02; OJ C 166/4, 07.07.90

COUNCIL DIRECTIVE of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of Open Network Provision.  
90/387/EEC; OJ L192/1, 24.07.90

COMMISSION DIRECTIVE of 28 June 1990 on competition in the markets for telecommunications services.  
90/388/EEC; OJ L192/10, 24.07.90

COMMISSION DECISION of 30 July 1990 setting up a Joint Committee on Telecommunication Services.  
90/450/EEC; OJ L230/25, 24.08.90

COUNCIL DIRECTIVE of 17 September 1990 on procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.  
90/531/EEC; OJ L297/1, 29.10.90

COUNCIL RECOMMENDATION of 9 October 1990 on the coordinated introduction of pan-European land-based public radio paging in the Community.  
90/543/EEC; OJ L310/23, 09.11.90

COUNCIL DIRECTIVE of 9 October 1990 on the frequency bands designated for the coordinated introduction of pan-European land-based public digital mobile cellular communications in the Community. (GSM).  
90/C329/09; OJ C329/25, 31.12.90

JUDGEMENT OF THE COURT of 19 March 1991 in Case C-202/88: French Republic v. Commission of the European Communities\_(Competition in the markets in telecommunications terminal equipment).  
91/C 96/04; OJ C96, 12.04.91

COUNCIL DIRECTIVE of 29 April 1991 on the approximation of the laws of the Member States concerning telecommunications terminal equipment including the mutual recognition of their conformity.  
91/263/EEC; OJ L128/1, 23.05.91

COUNCIL DIRECTIVE of 3 June 1991 on the frequency band to be designated for the coordinated introduction of digital European cordless telecommunications (DECT) into the Community.  
91/287/EEC; OJ L144/47, 08.06.91

COUNCIL RECOMMENDATION of 3 June 1991 on the coordinated introduction of digital European cordless telecommunications\_(DECT) in the Community.  
91/288/EEC; OJ L144/47, 08.06.91

COUNCIL DECISION of 7 June 1991 adopting a specific research and technological development programme in the field of communication technologies. (1990 - 1994).  
91/353/EEC; OJ L192/8, 16.07.91

COUNCIL DECISION of 7 June 1991 adopting a specific programme of research and technological development in the field of Telematic systems in areas of general interest. (1990 - 1994)  
91/353/EEC; OJ L192/18, 16.07.91

COUNCIL DECISION of 22 July 1991 establishing the second phase of the TEDDIES programme (Trade Electronic Data Interchange Systems).  
91/385/EEC; OJ L208/66, 30.07.91

COUNCIL DECISION of 29 July 1991 on the introduction of a single European emergency call number.  
91/396/EEC; OJ L217/31, 06.08.91

GUIDELINES ON THE APPLICATION OF EEC COMPETITION RULES IN THE TELECOMMUNICATIONS SECTOR.  
92/C 233/02; OJ C233/2, 06.09.91

COUNCIL RESOLUTION of 18 November 1991 concerning electronics, information and communication technologies.  
91/C 325/02; OJ C325/2, 14.12.91

COUNCIL RESOLUTION of 19 December 1991 on the development of the common market for satellite communications services and equipment.  
92/C 8/01; OJ C8/1, 14.01.92

COUNCIL DIRECTIVE of 25 February 1992 coordinating the laws, regulations and administrative provisions relating to the application of community rules on the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.  
92/13/EEC; OJ L76/14, 23.03.92

COUNCIL DECISION of March 1992 in the field of security of information systems.  
92/13/EEC; OJ L123/19, 08.05.92

COUNCIL DECISION of 28 April 1992 amending Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.  
92/31/EEC; OJ L126/11, 12.05.92

COUNCIL DIRECTIVE of 11 May 1992 on the adoption of standards for satellite broadcasting of television signals.  
92/38/EEC; OJ L137/17, 20.05.92

COUNCIL DECISION of 11 May 1992 on the introduction of a standard international telephone access code in the Community.

92/264/EEC; OJ L137/21, 20.05.92

COUNCIL DIRECTIVE of 5 June 1992 on the application of Open Network Provision to Leased Lines.

92/44/EEC; OJ L165/27, 19.06.92

COUNCIL RESOLUTION of 5 June 1992 on the development of the Integrated Services Digital Network (ISDN) in the Community as a Europe-wide telecommunications infrastructure for 1993 and beyond.

92/C158/1; OJ L C158/1, 25.06.92

COUNCIL RECOMMENDATION of 5 June 1992 on the provision of harmonized Integrated Services Digital Network (ISDN) access arrangements and a minimum set of ISDN offerings in accordance with Open Network Provision (ONP) principles.

92/383/EEC; OJ L200/10, 18.07.92

COMMISSION DECISION of 15 July 1992 amending the lists of standards institutions annexed to Council Directive 83/189/EEC

/400/EEC; OJ L221/55, 06.08.92

JUDGEMENT OF THE COURT of 17 November 1992 in Joined Cases C-271, C-281 and C-289-90; Kingdom of Spain and Others v. Commission of the European Communities. (Competition in the markets for telecommunications services).

92/C 326/07; OJ C326/8, 11.12.92

COUNCIL RESOLUTION of 19 November 1992 on the implementation in the Community of the European Radiocommunications Committee Decisions.

92/C 318/01; OJ C318/1, 04.12.92

COUNCIL RESOLUTION of 19 November 1992 on the promotion of Europe-wide cooperation on numbering of telecommunications services.

92/C 318/02; OJ 318/2, 04.12.92

COUNCIL RESOLUTION of 17 December 1992 on the assessment of the situation in the telecommunications sector.

93/C 2/05; OJ C2/5, 06.01.93

EUROPEAN PARLIAMENT RESOLUTION of 19 January 1993 on a common approach in the fields of satellite communications in the European Community.

A3-0344/92; OJ C42/30, 15.02.93

EUROPEAN PARLIAMENT RESOLUTION of 20 April 1993 on the Commission Communication. "Towards cost orientation and the adjustment of pricing structures - Telecommunications Tariffs in the Community".

A3-0117/93; OJ C150/37, 31.05.93

EUROPEAN PARLIAMENT RESOLUTION of 20 April 1993 on the Commission's 1992 review of the situation in the Telecommunications service sector.

A3-0113/93; OJ C150/39, 31.05.93

COUNCIL DIRECTIVE 93/38/EEC of 14 June 1993 coordinating the procurement procedures of entities operating in the water, energy transport and Telecommunications sectors.

93/38/EEC; OJ L199/84, 09.08.93

COUNCIL RESOLUTION of 22 July 1993 on the development of technology and standards in the field of advanced television services.

93/C 209/01; OJ C209/1, 03.08.93



COUNCIL DECISION of 22 July 1993 on an action plan for the introduction of advanced television services in Europe.

93/424/EEC; OJ L196/48, 05.08.93

COUNCIL RESOLUTION of 22 July 1993 on the review of the situation in the Telecommunications sector and the need for further development in that market.

93C 213/01; OJ C213/1, 06.08.93

COUNCIL DIRECTIVE of 29 October 1993 supplementing Directive 91/263/EC in respect of satellite earth Station Equipment.

93/97/EEC; OJ L290/1, 24.11.93

COUNCIL RESOLUTION of 7 December 1993 on the introduction of satellite personal communication services in the Community.

93/C 339/01; OJ C399/1, 16.12.93

COMMISSION DECISION of 21 December 1993 on a common technical regulation for the general attachment requirements for public pan-European cellular digital land-based mobile communications.

94/11/EC; OJ L 8/20, 12.01.94

COMMISSION DECISION of 21 December 1993 on a common technical regulation for telephony application requirements for public pan-European cellular digital land-based mobile communications.

94/12/EC; OJ L 8/23, 12.01.94

COUNCIL RESOLUTION of 7 February 1994 on universal service principles in the Telecommunications sector.

94/C 48/01; OJ C 48/1, 16.02.94

COMMISSION STATEMENT concerning Council Resolution on universal service in the Telecommunication sector.

94/C 48/06; OJ C 48/8, 16.02.94

EUROPEAN PARLIAMENT RESOLUTION of 6 May 1994 on the communications from the commission accompanied by the proposal for a Council Resolution on universal service principles in the telecommunications sector.

A3-0317/94; OJ C 205/551, 25.07.94

COMMISSION DECISION of 15 June 1994 on amendment of Annex II of Council Directive 92/44/EEC.

94/439/EC; OJ L 181/40, 15.07.94

COUNCIL RESOLUTION of 27 June on a framework for Community Policy on digital video broadcasting.

94/C 181/02; OJ C181/3, 02.07.94

COMMISSION DECISION of 18 July 1994 on a common technical regulation for attachment requirements for terminal equipment interface for ONP 048 kbits/s digital unstructured leased line.

94/470/EC; OJ L 194/87, 29.07.94

COMMISSION DECISION of 18 July 1994 on a common technical regulation for general terminal attachment requirements for Digital European Cordless Telecommunications (DECT).

94/471/EC; OJ L 194/89, 29.07.94

TELECOMMUNICATIONS: Open Network Provision (ONP) for leased lines-Conciliation procedure.

94/C 214/04; OJ L 194/91, 29.07.94

COUNCIL DECISION of 27 July 1994 adopting a specific programme for research and technological development, including demonstration, in the field of advanced communication technologies and services (1994-1998).

94/572/EC; OJ L 222/35, 26.08.94

COMMISSION DIRECTIVE of 13 October 1994 amending directive 88/3901/EEC and Directive 90/388/EEC in particular with regard to satellite communications.

94/46/EC; OJ L 268/15, 19.10.94

COMMISSION DECISION of 18 November 1994 on a common technical regulation for the pan-European integrated services digital network (ISDN) primary rate access.

94/796/EC; OJ L 329/1, 20.12.94

COMMISSION DECISION of 18 November 1994 on a common technical regulation for the pan-European integrated services digital network (ISDN) basic access.

94/797/EC; OJ 329/14, 20.12.94

COUNCIL RESOLUTION of 22 December 1994 on the principle and timetable for the liberalization of Telecommunications infrastructures .

94/C379/03; OJ C379/4, 31.12.94

COUNCIL RESOLUTION of 22 December 1994 on further development of the Community's satellite communications policy, especially with regard to the provision of, and access to, space segment capacity.

94/C 379/04; OJ C 379/5, 31.12.94

EUROPEAN PARLIAMENT RESOLUTION of 7 April 1995 on the Communication from the commission's "Green Paper on the liberalization of Telecommunications infrastructure and cable television networks" (part one - Principle and Timetable).

A4-0063/95; OJ C 109/310, 01.05.95

EUROPEAN PARLIAMENT RESOLUTION of 19 May 1995 on the Commission's Communication to the European Parliament and the Council "Towards the personal communications environment: Green Paper on a common approach in the field of mobile and personal communications in the European Union" (COM(94)0145 - C4-0061/94) and on the Commission's Communications to the European Parliament and the council on the consultation on the Green Paper mobile and personal communications (COM(94)0492-C40046/95). A4-0097/95; OJ C 151/479, 19.06.95

EUROPEAN PARLIAMENT RESOLUTION of 19 May 1995 on the Green Paper on the liberalization of Telecommunications infrastructure and cable television networks Part II: "A common approach to the provision of infrastructure for Telecommunications in the European Union.

A4-0111/95; OJ C 151/479, 19.06.95

COUNCIL RESOLUTION of 29 June 1995 on the further development of mobile and personal communications sector in the European Union.

95/C 188/02; OJ C 188/3, 22.07.95

COMMISSION DECISION of 17 July 1995 on a common technical regulation for public land-based European radio message system (ERMES) receiver requirements.

05/290/EC; OJ L 182/21, 02.08.95

COUNCIL RESOLUTION of 18 September 1995 on the implementation of the future regulatory framework for Telecommunications.

95/C258/01; OJ C 258/1, 03.10.95

TELECOMMUNICATIONS: Open Network Provision (ONP) list of standards (fourth issue).

95/C 266/02; OJ C266/2, 13.10.95

COMMISSION DIRECTIVE 95/51/EC of 18 October 1995 amending Directive 90/388/EEC with regard to the abolition of the restriction on the use of cable television networks for the provision of already liberalized Telecommunications services.

95/51/EC; OJ L 256/49, 26.10.95

DIRECTIVE 95/46/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

95/46/EC; OJ L 281/31, 23.11.95

DIRECTIVE 95/47/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 October 1995 on the use of standards for the transmission of television signals.

95/47/EC; OJ L 281/51, 23.11.95

COUNCIL DECISION of 6 November 1995 on a community contribution for Telematic interchanges of data between administrations in the Community (IDA).

95/468/EDC; OJ L 269/23, 11.11.95

EUROPEAN PARLIAMENT AND COUNCIL DECISION of 9 November 1995 on a set of guidelines for the development of the development of the EURO-ISDN as a Trans-European network.

2717/95/EC; OJ L 282/16, 24.11.95

COUNCIL RESOLUTION of 27 November 1995 on the industrial aspects for the European Union in the development of the Information Society.

95/C 341/03; OJ C 341/3, 19.12.95

COMMISSION DECISION of 28 November 1995 on a common technical regulation for attachment requirements for terminal equipment for digital European cordless communications (DECT), public access profile (PAP) applications.

95/525/EC; OJ L 300/35, 13.12.95

COMMISSION DECISION of 28 November 1995 on a common technical regulation for integrated services digital network (ISDN); telephony 3,1kHz teleservice, attachment requirements for handset terminal.

95/526/EC; OJ L 300/38, 13.12.95

COUNCIL DIRECTIVE of 13 December 1995 on the application of Open Network Provision (ONP) to Voice Telephony.

95/62/EC; OJ L 321/6, 30.12.95

COMMISSION DIRECTIVE of 16 January 1996 amending Directive 90/388/EEC with regard to mobile and personal communications.

96/02/EC; OJ L 20/59, 26.01.96

COMMISSION DIRECTIVE of 28 February 1996 amending Commission Directive 90/388/EEC regarding the implementation of full competition in Telecommunications Markets.

96/19/EC; OJ L 74/13, 22.03.96

COUNCIL DECISION of 20 May 1996 adopting a multiannual Community Programme to stimulate the development of a European multimedia content industry and to encourage the use of multimedia content in the emerging Information Society. (INFO 2000).

96/338/EC; OJ L 129/24, 30.05.96

EUROPEAN PARLIAMENT RESOLUTION of 22 May 1996 on the Communication from the Commission to the Council and the European parliament on future developments of the market in Directories and other Telecommunications information services in a competitive environment [COM(95) 431-C4-0454/95].

A4-0141/96; OJ C 166/106, 10.06.96

EUROPEAN PARLIAMENT RESOLUTION of 12 December 1996 on the Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on universal service for Telecommunications in the perspective of a fully liberalized environment. C4-0205/96

COUNCIL RESOLUTION of 21 November 1996 on new policy priorities regarding the Information Society. OJ C 376, 12 December 1996, p.1

COMMISSION DECISION 96C/3342/3 of 22 November 1996 granting to the Republic of Ireland a supplementary period for transposition of some provisions of Commission's Directives on competition in Telecommunications Markets. OJ C/169/5.

COUNCIL RESOLUTION of 17 February 1997 on illegal and harmful content on the Internet. OJ C70, 6 March 1997

DIRECTIVE 97/13/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on a common framework for general authorizations and individual licenses in the field of Telecommunications services, OJ L117/15, 07 May 1997

DECISION No 710/97/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 March 1997 on a coordinated authorization approach in the field of satellite personal-communications services in the Community. OJ L 105/4, 23 April 1997

COMMISSION DECISION No 568/97/EC of 14 May 1997 on the granting of additional implementation periods to Luxembourg for the implementation of Commission Directive 90/388/EC as regards full competition in the Telecommunications Market. OJ L 234/7, 26 August 1997

COMMISSION DECISION No 603/97/EC of 10 June 1997 concerning the granting of additional implementation periods to Spain for the implementation of Commission Directive 90/388/EC as regards full competition in the Telecommunications Markets. OJ L 243/48, 05 September 1997

DECISION No 1336/97/EC of the European Parliament and of the Council of 17 June 1997 on a series of guidelines for Trans-European Telecommunications Network. OJ L 183/12, 11 July 1997

COMMISSION DECISION No 607/97/EC of 18 June 1997 concerning the granting of additional implementation periods to Greece for the implementation of Commission Directive 90/388/EC as regards full competition in the Telecommunications Markets. OJ L 245/6, 09 September 1997

DIRECTIVE 97/33/EC of the European Parliament and of the Council of 30 June 1997 on Interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP). OJ L 199/32, 26 July 1997

COUNCIL RESOLUTION of 22 September 1997 on the further development of a numbering policy for Telecommunications Services in the European Community. OJ C 303/1, 04 October 1997

DIRECTIVE 97/51/EC of the European Parliament and of the Council of 6 October 1997 amending Council Directives 90/387/EEC and 92/44/EEC for the purpose of adaptation to a competitive environment in Telecommunications. OJ L 295/23, 29 October 1997

DIRECTIVE 97/66/EC of the European Parliament and of the Council of 1 December 1997 concerning the processing of personal data and the protection of privacy in the Telecommunications Sector.

COMMISSION RECOMMENDATION of 8 January 1998 on Interconnection in a liberalized Telecommunications Market.

Part 1 – Interconnection Pricing.

COMMISSION NOTICE concerning the Status of Voice Communications on INTERNET under Community Law and, in particular, pursuant to Directive 90/388/EC.  
OJ No C 6,10 January 1998.

COMMISSION RECOMMENDATION amending Rec 98/511/EC of 29 July 1998 on Interconnection in a liberalised telecommunications market - Part 1 : Interconnection Pricing.

DIRECTIVE 98/13/EC of the European Parliament and of the Council relating to telecommunication terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity : PROPOSAL BY THE COMMISSION for a Decision of the European Parliament and of the Council on the co-ordinated introduction of mobile and wireless communications (UMTS) in the Community. Common position with regard to operator number portability and carrier pre-selection.

DIRECTIVE 98/10/EC on the application of ONP to Voice Telephony and Universal Service for telecommunications in a competitive environment.

COMMISSION RECOMMENDATION on Interconnection in a liberalized telecommunication market. Part 2: Accounting separation and cost accounting (Part 1 was published on 15 October 1997)

COMMON POSITION ADOPTED BY THE COUNCIL concerning the coordinated introduction of a third -generation mobile and wireless communications system (UMTS) in the Community.

DIRECTIVE 98/61/EC of the European Parliament and of the Council amending Directive 97/33/EC with regard to operator number portability and carrier pre-selection.

DECISION NO 128/1999/EC of the European Parliament and of the Council on the co-ordinated introduction of a third-generation mobile and wireless communications system (UMTS) in the Community.

DIRECTIVE 1999/59/EC of the Council amending Directive 77/388/EEC as regards the value added tax arrangements applicable to telecommunications services.

COMMISSION RECOMMENDATION on Leased Lines Interconnection Pricing in a liberalised telecommunications market.

COMMISSION RECOMMENDATION amending Rec 98/511/EC of 29 July 1998 on Interconnection in a liberalised telecommunications market - Part 1 : Interconnection Pricing

COMMISSION PROPOSAL C(2000)1059 for a Recommendation on Unbundled Access to the Local Loop.

COMMISSION RECOMMENDATION on Unbundled Access to the Local Loop enabling the competitive provision of a full range of electronic communications services including broadband multimedia and high-speed internet: 2000/417/EC.

INFORMAL CONSOLIDATED TEXT OF THE PROPOSED REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on unbundled access to the local loop, including the amendments voted by the European Parliament during the plenary session of 26 October 2000. During the plenary debate Commissioner Liikanen stated the Commission position, indicating that all of them would be acceptable. It will be now to the Council to confirm also the acceptance of the proposed amendments for final adoption of the Regulation. (This text is subject to revision by Legal Linguists prior to its definitive adoption.)

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Unbundled Access to the Local Loop  
(final text, adopted by Council 5 December 2000, incorporating EP amendments.)

COMMISSION RECOMMENDATION on Unbundled Access to the Local Loop enabling the competitive provision of a full range of electronic communications services including broadband multimedia and high-speed internet: 2000/417/EC.

COMMISSION PROPOSAL C(2000)1059 for a Recommendation on Unbundled Access to the Local Loop. 26 April 2000.

REGULATION NO. 2887/2000 of the European Parliament and of the Council on Unbundled Access to the Local Loop (final text, adopted by Council 5 December 2000, incorporating EP amendments.)

COMMISSION RECOMMENDATION C(2002)561 amending Rec 98/511/EC of 29 July 1998, as last amended by Recommendation 2000/263/EC, on Interconnection in a liberalised telecommunications market (Part 1 - Interconnection Pricing) 22 February 2002

DIRECTIVE 2002/22/EC on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) 24 April 2002

DIRECTIVE 2002/21/EC on a common regulatory framework for electronic communications networks and services (Framework Directive) 24 April 2002

DIRECTIVE 2002/20/EC on the authorisation of electronic communications networks and services (Authorisation Directive), 24 April 2002

DIRECTIVE 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) 24 April 2002.

DECISION ON THE SPECTRUM POLICY GROUP, 26 July 2002.

COMMISSION DECISION establishing the European Regulators Group for Electronic Communications Networks and Services. 29 July 2002.

DIRECTIVE 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) 31 July 2002.

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**Appendix I**

**Common Technical Regulations**

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COMMISSION DECISION of 21 December 1993 on a common technical regulation for the general attachment requirements for public pan-European cellular digital land-based mobile communications. 94/11/EC, OJ L 8/20, 12.01.94

COMMISSION DECISION of 21 December 1993 on a common technical regulation for the telephony application requirements for public pan-European cellular digital land-based mobile communications. 94/12/EC, OJ L 8/23, 12.01.94

COMMISSION DECISION of 18 July 1994 on a common technical regulation for attachment requirements for terminal equipment interface for ONP 248 Kbit/s digital unstructured leased line. 94/470/EC, OJ L 194/87, 29.07.94

COMMISSION DECISION of 18 July 1994 on a common technical regulation for general terminal attachment requirements for Digital European Cordless Telecommunications. (DECT). 94/471/EC, OJ L 194/89, 29.07.94

COMMISSION DECISION of 18 July 1994 on a common technical regulation for telephony application requirements for Digital European Cordless Telecommunications (DECT). 94/472/EC, OJ L 194/91, 29.07.94

COMMISSION DECISION of 18 November 1994 on a common technical regulation for the pan-European Integrated Services Digital Network (ISDN) primary rate access. 94/796/EC, OJ L 329/1, 20.12.94

COMMISSION DECISION of 18 November 1994 on a common technical regulation for the pan-European Integrated Services Digital Network (ISDN) basic access. 94/797/EC, OJ L 329/14, 20.12.94

COMMISSION DECISION of 9 December 1994 on a common technical regulation for attachment requirements for terminal equipment interface for ONP 64 Kbit/s digital unstructured leased line. 94/821/EC, OJ L 339/81, 29.12.94

COMMISSION DECISION of 17 July 1995 on a common technical regulation for public land-based European radio message system (ERMES) receiver requirements. 95/290/EC, OJ L 182/21, 02.08.95

COMMISSION DECISION of 28 November 1995 on a common technical regulation for attachment requirements for terminal equipment for Digital European Cordless Telecommunications (DECT), Public Access Profile (PAP) applications. (Text with EEA relevance). 95/525/EC, OJ L 300/35, 13.12.95

COMMISSION DECISION of 28 November 1995 on a common technical regulation for Integrated Services digital Network (ISDN); Telephony 3,1 kHz teleservice, attachment requirements for handset terminals. (Text with EEA relevance). 95/526/EC, OJ L 300/38, 13.12.95

COMMISSION DECISION of 10 January 1996 on a common technical regulation for access to Packet Switched Public Data Networks (PSPDNs) using CCITT recommendation X.25 interfaces. (Text with EEA relevance). 96/71/EC, OJ L 13/23, 18.01.96

COMMISSION DECISION of 23 October 1996 on a common technical regulation for telephony application requirements for public pan-European cellular digital land-based mobile communications, Phase II (Text with EEA relevance). 96/629/EC, OJ L 282/75, 01.11.96

COMMISSION DECISION of 23 October 1996 on a common technical regulation for the general attachment requirements for public pan-European cellular digital land-based mobile communications, Phase II (Text with EEA relevance). 96/630/EC, OJ L 282/79, 01.11.96

COMMISSION DECISION of 20 May 1997 on a common technical Regulation for the pan-European Integrated Services Digital Network (ISDN) basic access. (Text with EEA relevance). 97/346/EC, OJ L 148/19, 06.06.97



COMMISSION DECISION of 20 May 1997 on a common technical Regulation for the pan-European Integrated Services Digital Network (ISDN) primary rate access. (Text with EEA relevance).  
97/347/EC, OJ L 148/24, 06.06.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the general attachment requirements for terminal equipment to interface to Open Network Provision (ONP) two-wire analogue leased lines. (Text with EEA relevance).  
97/486/EC, OJ L 208/44, 02.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the general attachment requirements for terminal equipment to interface to Open Network Provision (ONP) four-wire analogue leased lines. (Text with EEA relevance).  
97/487/EC, OJ L 208/47, 02.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the attachment requirements for the terminal equipment interface for connection to 248 kbits/s digital unstructured ONP leased lines (Amendment 1) (Text with EEA relevance).  
97/520/EC, OJ L 215/41, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the attachment requirements for the terminal equipment interface for connection to 248 kbits/s digital structured ONP Leased Lines. (Text with EEA relevance).  
97/521/EC, OJ L 215/44, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the attachment requirements for the terminal equipment interface for connection to 64 kbits/s digital unstructured ONP Leased Lines. (Amendment 1) (Text with EEA relevance).  
97/522/EC, OJ L 215/46, 07.08.97

COMMISSION DECISION of 0 July 1997 on a common technical regulation for the general terminal attachment requirements for Digital Enhanced Cordless Telecommunications (DECT) (edition 2) (Text with EEA relevance).  
97/523/EC, OJ L 215/48, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the telephony application requirements for Digital Enhanced Cordless Telecommunications (DECT). (edition 2) (Text with EEA relevance).  
97/524/EC, OJ L 215/50, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) generic access profile (GAP) applications. (Text with EEA relevance).  
97/525/EC, OJ L 215/52, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the general attachment requirements for public pan-European cellular digital land-based mobile communications. (Edition 2) (Text with EEA relevance)  
97/526/EC, OJ L 215/54, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the telephony application requirements for public pan-European cellular digital land-based mobile communications. (Edition 2) (Text with EEA relevance).  
97/527/EC, OJ L 215/57, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the general attachment requirements for mobile stations intended to be used with Phase II public digital cellular Telecommunications Network operating in the DCS 1800 band. (Text with EEA relevance).  
97/528/EC, OJ L 215/60, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the telephony application requirements for mobile stations intended to be used with Phase II public digital cellular Telecommunications Networks operating in the DCS 1800 band. (Text with EEA relevance).  
97/529/EC, OJ L 215/65, 07.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for terminal equipment to be connected to public circuit switched data networks and ONP Leased Circuits using a CCITT Recommendation X.21 type interface. (Text with EEA relevance).

97/544/EC, OJ L 223/18, 13.08.97

COMMISSION DECISION of 9 July 1997 on a common technical regulation for the general attachment requirements for Data Terminal Equipment (DET) to connect to Packet Switched Public Data Networks (PSPDNs) offering CCITT Recommendation X.25 interfaces. (Text with EEA relevance).

97/545/EC, OJ L 223/21, 13.08.97

COMMISSION DECISION of 19 September 1997 on a common technical regulation for the attachment requirements for the terminal equipment interface for connection to 34 Mbit/s digital unstructured and structured leased lines. (Text with EEA relevance).

97/639/EC, OJ L 271/16, 03.10.97

COMMISSION DECISION of 31 October 1997 on a common technical regulation for the attachment requirements for the terminal equipment interface for connection to 140 Mbit/s digital unstructured and structured Leased Lines. (Text with EEA relevance).

97/751/EC, OJ L 305/66, 08.11.97

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Appendix J

**Directive 97/33/EC of the European Parliament and of the  
Council on Interconnection in Telecommunications with  
regard to ensuring Universal Service and Interoperability  
through the Application of the Principles of Open Network  
Provision (ONP)**

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# EUROPEAN UNION

**DIRECTIVE 97/33/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
OF 11 JUNE 1997  
ON INTERCONNECTION IN TELECOMMUNICATIONS  
WITH REGARD TO ENSURING UNIVERSAL SERVICE AND  
INTEROPERABILITY THROUGH APPLICATION OF THE PRINCIPLES  
OF OPEN NETWORK PROVISION (ONP)**

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**THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,**  
of 11 June 1997

on Interconnection in Telecommunications  
with regard to ensuring Universal Service and  
Interoperability through Application of the Principles  
of Open Network Provision (ONP)

**THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,**

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission<sup>542</sup>,

Having regard to the Opinion of the Economic and Social Committee<sup>543</sup>,

Acting in accordance with the procedure laid down in Article 189b of the Treaty<sup>544</sup> in the light of the joint text approved by the Conciliation Committee on 19 March 1997,

- (1) Whereas from 1 January 1998, with transition periods for certain Member States, the provision of telecommunications services and infrastructure in the Community will be liberalized; whereas the Council Resolution of 7 February 1994 on universal service principles in the telecommunications sector<sup>545</sup> recognizes that in order to promote Community-wide telecommunications services there is a need to ensure interconnection of public networks and, in the future competitive environment, interconnection between different national and Community operators; whereas Council Directive 90/387/EEC of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision<sup>546</sup> lays down harmonized principles for open and efficient access to, and use of, public telecommunications networks and, where applicable, publicly available services; whereas the Council Resolution of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market<sup>547</sup> recognizes that open network provision measures provide an appropriate framework for harmonizing interconnection conditions; whereas this harmonization is essential for the establishment and proper functioning of the internal market for telecommunications services; whereas the Council Resolution of 18 September 1995 on the implementation of the future regulatory framework for telecommunications<sup>548</sup> recognizes as key factors of this future regulatory framework the maintenance and development of a universal service as well as a specific regulation on interconnection, and sets out some guidelines on these subjects;
- (2) Whereas a general framework for interconnection to public telecommunications networks and publicly available telecommunications services, irrespective of the supporting technologies employed, is needed in order to provide end-to-end interoperability of services for Community users; whereas fair, proportionate and non-discriminatory conditions for interconnection and interoperability are key factors in fostering the development of open and competitive markets;
- (3) Whereas the abolition of special and exclusive rights in telecommunications means that certain existing definitions need to be revised; whereas for the purposes of this Directive, telecommunications services do not include radio and television broadcasting services; whereas the technical conditions, tariffs, usage and supply conditions that apply to interconnection may be different from the conditions that apply at end user/network interfaces;
- (4) Whereas the regulatory framework for interconnection covers those situations where the interconnected networks are used for the commercial provision of publicly available telecommunications services; whereas the regulatory framework for interconnection does not cover cases where a telecommunications network is used for the provision of telecommunications services available only to a specific end user or to a closed user group, but covers only cases where a telecommunications network is used for the provision of publicly available services; whereas telecommunications networks which are interconnected may be owned by the parties involved or may be based on leased lines and/or transmission capacity not owned by the parties involved;
- (5) Whereas, following the removal of special and exclusive rights for telecommunications services and infrastructure in the Community, the provision of telecommunications networks or services may require some form of authorization by Member States; whereas Organizations authorized to provide public telecommunications networks or publicly available telecommunications services in all or part of the Community should be free to negotiate interconnection agreements on a commercial basis in accordance with Community law, subject to supervision and, if necessary, intervention by national regulatory authorities; whereas it is necessary to ensure adequate interconnection within the Community of certain networks and interoperability of services essential for the social and economic well-being of Community users, notably fixed and mobile public telephone networks and services, and leased lines; whereas, for the purpose of this Directive “public” does not refer to ownership, nor does it refer to a limited set of offerings designated as “public networks” or “public services”, but means any network or service that is made publicly available for use by third parties;

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<sup>542</sup> (OJ C 313). 24.11.1995. 7.

<sup>543</sup> Opinion delivered on 29 February 1996. (OJ No C 153). 28.05.1996. 21.

<sup>544</sup> Opinion of the European Parliament of 14 February 1996. (OJ No C 65). 04.03.1996. p. 69.; Council Common Position of 18 June 1996. (OJ No C 220). 29.07.1996. p. 13.; and Decision of the European Parliament of 19 September 1996. (OJ C 320). 28.10.1996. p. 138.

<sup>545</sup> (OJ C 48) 16.02.1994. p. 1.

<sup>546</sup> (OJ L 192). 24.07.1990. p. 1.

<sup>547</sup> (OJ C 213). 06.08.1993. p. 1.

<sup>548</sup> (OJ C 258). 03.10.1995. p. 1.

- (6) Whereas it is necessary to define those Organizations which have rights and obligations for interconnection; whereas in order to stimulate development of new types of telecommunications services, it is important to encourage new forms of interconnection and special network access at points other than the network termination points offered to the majority of end users; whereas the market power of an Organization depends on a number of factors including its share of the relevant product or service market in the relevant geographical market, its turnover relative to the size of the market, its ability to influence market conditions, its control of the means of access to end users, its international links, its access to financial resources and its experience in providing products and services in the market; whereas, the determination of which Organizations have significant market power should be undertaken by national regulatory authorities taking into account the situation in the relevant market;
- (7) Whereas the concept of universal service must evolve to keep pace with advances in technology, market development and changes in user demand; whereas the new conditions for the provision of universal service should be assessed in the future review of this Directive;
- (8) Whereas obligations for the provision of universal service contribute to the Community objective of economic and social cohesion and territorial equity; whereas there may be more than one Organization in a Member State with universal service obligations; whereas Member States should encourage the early introduction of new technologies like the integrated services digital network (ISDN) on as broad a basis as possible; whereas at its current stage of development in the Community, ISDN is not accessible for all users and is not subject to the universal service provisions of this Directive; whereas it may be appropriate in due course to consider whether ISDN should be part of the universal service; whereas the calculation of the net cost of universal service should take due account of costs and revenues, as well as economic externalities and the intangible benefits resulting from providing universal service but should not hinder the on-going process of tariff rebalancing; whereas costs of universal service obligations should be calculated on the basis of transparent procedures; whereas financial contributions related to the sharing of universal service obligations should be unbundled from charges for interconnection; whereas, when a universal service obligation represents an unfair burden on an Organization, it is appropriate to allow Member States to establish mechanisms for sharing the net cost of universal provision of a fixed public telephone network or a fixed public telephone service with other Organizations operating public telecommunications networks and/or publicly available voice telephony services; whereas this should respect the principles of Community law, in particular those of non-discrimination and proportionality and should be without prejudice to Article 95(2) of the Treaty;
- (9) Whereas it is important to lay down principles to guarantee transparency, access to information, non-discrimination and equality of access, in particular for Organizations with significant market power;
- (10) Whereas pricing for interconnection is a key factor in determining the structure and the intensity of competition in the transformation process towards a liberalized market; whereas Organizations with significant market power must be able to demonstrate that their interconnection charges are set on the basis of objective criteria and follow the principles of transparency and cost orientation, and are sufficiently unbundled in terms of network and service elements offered; whereas publication of a list of interconnection services, charges, terms and conditions enhances the necessary transparency and non-discrimination; whereas flexibility in the methods of charging for interconnection traffic should be possible, including capacity-based charging; whereas the level of charges should promote productivity and encourage efficient and sustainable market entry, and should not be below a limit calculated by the use of long-run incremental cost and cost allocation and attribution methods based on actual cost causation, nor above a limit set by the stand-alone cost of providing the interconnection in question; whereas charges for interconnection based on a price level closely linked to the long-run incremental cost for providing access to interconnection are appropriate for encouraging the rapid development of an open and competitive market;
- (11) Whereas, where an Organization with special or exclusive rights in a non-telecommunications field also provides telecommunications services, accounting separation or structural separation are appropriate means to discourage unfair cross-subsidies at least above a certain turnover in telecommunications activities; whereas, when an Organization enjoys significant market power, appropriate accounting separation between interconnection activities and other Telecom activities, so as to identify all elements of cost and revenue related to those activities, ensures transparency of internal cost transfers;

- (12) Whereas national regulatory authorities have an important role in encouraging the development of a competitive market in the interests of Community users, and of securing adequate interconnection of networks and interoperability of services; whereas adequate interconnection takes account of the requests of the operator wishing to interconnect, in particular concerning the most appropriate interconnection points, with each operator having responsibility for carrying calls and setting charges to each other up to the interconnection point; whereas negotiation of interconnection agreements can be facilitated by national regulatory authorities setting down certain conditions in advance, in accordance with Community law, taking into account the recommendations defined by the Commission so as to facilitate the development of a genuine European home market, and identifying other areas to be covered in interconnection agreements; whereas in the event of a dispute over interconnection between parties in the same Member State, an aggrieved party must be able to call on the national regulatory authority to resolve the dispute; whereas national regulatory authorities must be able to require Organizations to interconnect their facilities, where it can be demonstrated that this is in the users' interests;
- (13) Whereas, in accordance with Directive 90/387/EEC, the essential requirements justifying restrictions on access to and use of public telecommunications networks or services are limited to security of network operations, maintenance of network integrity, interoperability of services in justified cases, and protection of data as appropriate; whereas the reasons for these restrictions must be made public; whereas the provisions of this Directive do not prevent a Member State from taking measures justified on grounds set out in Articles 36 and 56 of the Treaty, and in particular on grounds of public security, public policy and public morality;
- (14) Whereas facility sharing can be of benefit for town planning, environmental, economic or other reasons, and should be encouraged by national regulatory authorities on the basis of voluntary agreements; whereas compulsory facility sharing may be appropriate in some circumstances, but should be imposed on Organizations only after full public consultation;
- (15) Whereas numbering is a key element for equal access; whereas national regulatory authorities should have the responsibility for administering and controlling national numbering plans, and those naming and addressing aspects of telecommunications services where coordination at a national level is required, so as to ensure effective competition; whereas in exercising this responsibility, national regulatory authorities must have regard to the principle of proportionality, particularly as to the effect of any measures on network operators, revellers and consumers; whereas number portability is an important facility for users, and should be implemented as soon as practicable; whereas numbering schemes should be developed in full consultation with all the parties involved and in harmony with a long-term Europe-wide numbering framework and international numbering schemes as being considered in the European Conference of Postal and Telecommunications Administrations (CEPT); whereas numbering requirements in Europe, the need for the provision of pan-European and new services and the globalization and synergy of the telecommunications market require coordination of national positions in accordance with the Treaty in international Organizations and fora where numbering decisions are taken;
- (16) Whereas, in accordance with Directive 90/387/EEC, the harmonization of technical interfaces and access conditions must be based on common technical specifications which take account of international standardization; whereas the development of new European standards for interconnection may be needed; whereas in accordance with Council Directive 83/189/EEC of 28 March 1983 laying down a procedure for the provision of information in the field of technical standards and regulations<sup>549</sup>, new national standards must not be developed in areas where harmonized European standards are under development;
- (17) Whereas, in accordance with Directive 90/387/EEC, open network provision conditions must be transparent and published in an appropriate manner; whereas that Directive set up a Committee (the ONP Committee) to assist the Commission, and provides a procedure for consultation with telecommunications Organizations, users, consumers, manufacturers and service providers;
- (18) Whereas in addition to the rights of recourse granted under national or Community law, there is a need for a simple procedure to resolve cross-border disputes which lie outside the competence of a single national regulatory authority; whereas this procedure, to be initiated at the request of either party in dispute, should be responsive, inexpensive and transparent;
- (19) Whereas, to enable the Commission to monitor effectively the application of this Directive, it is necessary that Member States notify to the Commission the national regulatory authorities which will be responsible for the functions created by this Directive and the Organizations covered by its provisions;

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<sup>549</sup> (OJ L 109). 26.04.1983. p. 8. Directive as last amended by Commission Decision 96/139/EC. (OJ L 32). 10.02.1996. p. 31.

- (20) Whereas given the dynamic development in this sector, a responsive procedure for adjustment of some Annexes to this Directive should be established which takes full account of the views of Member States and should involve the ONP Committee;
- (21) Whereas a *modus vivendi*<sup>550</sup> between the European Parliament, the Council and the Commission concerning the implementing measures for acts adopted in accordance with the procedure laid down in Article 189b of the Treaty was concluded on 20 December 1994;
- (22) Whereas the implementation of certain obligations must be linked to the date of liberalization of telecommunications services and infrastructure and, in particular in regard to the relevant Member States, take full account of the relevant transition periods, including the retention of special or exclusive rights in relation to direct interconnection between the mobile networks of those Member States and the fixed or mobile networks of other Member States; whereas deferment of the obligation to provide number portability may be granted where the Commission agrees that the obligation would impose an excessive burden on certain Organizations;
- (23) Whereas this Directive does not, in the case of undertakings which are not established in the Community, prevent the adoption of measures in accordance with both Community law and existing international obligations designed to ensure that nationals of the Member States enjoy similar treatment in third countries; whereas Community undertakings should benefit in third countries from treatment and effective access that is comparable to the treatment and access to the market which is conferred on nationals of the countries concerned within the Community context; whereas in negotiations on telecommunications the Community will have to seek a balanced multilateral agreement which provides Community operators with effective and comparable access in third countries;
- (24) Whereas the functioning of this Directive should be reviewed by 31 December 1999, in particular to examine the scope of universal service and the timetable for number portability; whereas the situation with regard to interconnection with third countries should also be periodically reviewed, to allow appropriate action to be taken;
- (25) Whereas the essential goal of interconnection of networks and interoperability of services throughout the Community cannot be sufficiently achieved at Member State level, and can therefore be better achieved at Community level by this Directive; whereas it is desirable, when this Directive is reviewed, to assess the case for the establishment of a European Regulatory Authority, taking into account i.e. the preparatory work undertaken by the Commission; whereas when effective competition is achieved in the market, the competition rules of the Treaty will in principle be sufficient to monitor fair competition ex-post so that the need for this Directive will be reconsidered, with the exception of the provisions on universal service and the settlement of disputes.
- (26) Whereas this Directive is without prejudice to the application of the competition rules of the Treaty,

## HAVE ADOPTED THIS DIRECTIVE:

### Article 1 Scope and aim

This Directive establishes a regulatory framework for securing in the Community the interconnection of telecommunications networks and in particular the interoperability of services, and with regard to ensuring provision of universal service in an environment of open and competitive markets.

It concerns the harmonization of conditions for open and efficient interconnection of and access to public telecommunications networks and publicly available telecommunications services.

### Article 2 Definitions

1. For the purposes of this Directive:

- (a) "interconnection" means the physical and logical linking of telecommunications networks used by the same or a different Organization in order to allow the users of one Organization to communicate with users of the same or another Organization, or to access services provided by another Organization. Services may be provided by the parties' involved or other parties who have access to the network;

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<sup>550</sup> (OJ C 102). 04.04.1996. p. 1.



- (b) "public telecommunications network" means a telecommunications network used, in whole or in part, for the provision of publicly available telecommunications services;
  - (c) "telecommunications network" means transmission systems and, where applicable, switching equipment and other resources which permit the conveyance of signals between defined termination points by wire, by radio, by optical or by other electromagnetic means;
  - (d) "telecommunications services" means services whose provision consists wholly or partly in the transmission and routing of signals on telecommunications networks, with the exception of radio and television broadcasting;
  - (e) "users" means individuals, including consumers, or Organizations using or requesting publicly available telecommunications services;
  - (f) "special rights" means rights that are granted by a Member State to a limited number of undertakings through any legislative, regulatory or administrative instrument which, within a given geographical area, limits to two or more the number of such undertakings authorized to provide a service or undertake an activity, otherwise than according to objective, proportionate and non-discriminatory criteria, or designates, otherwise than according to such criteria, several competing undertakings as being authorized to provide a service or undertake an activity, or confers on any undertaking or undertakings, otherwise than according to such criteria, legal or regulatory advantages which substantially affect the ability of any other undertaking to provide the same service or to undertake the same activity in the same geographical area under substantially the same conditions.
  - (g) "universal service" means a defined minimum set of services of specified quality, which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price.
2. Further definitions given in Directive 90/387/EEC shall apply, where relevant.

### **Article 3**

#### **Interconnection at national and Community level**

1. Member States shall take all necessary measures to remove any restrictions, which prevent Organizations authorized by Member States to provide public telecommunications networks and publicly available telecommunications services from negotiating interconnection agreements between themselves in accordance with Community law. The Organizations concerned may be in the same Member State or in different Member States. Technical and commercial arrangements for interconnection shall be a matter for agreement between the parties involved, subject to the provisions of this Directive and the competition rules of the Treaty.
2. Member States shall ensure the adequate and efficient interconnection of the public telecommunications networks set out in Annex I, to the extent necessary to ensure interoperability of these services for all users within the Community.
3. Member States shall ensure that Organizations, which interconnect their facilities to public telecommunications networks and/or publicly available telecommunications services respect at all, times the confidentiality of information transmitted or stored.

### **Article 4**

#### **Rights and obligations for interconnection**

1. Organizations authorized to provide public telecommunications networks and/or publicly available telecommunications services as set out in Annex II shall have a right and, when requested by Organizations in that category, an obligation to negotiate interconnection with each other for the purpose of providing the services in question, in order to ensure provision of these networks and services throughout the Community. On a case-by-case basis, the national regulatory authority may agree to limit this obligation on a temporary basis and on the grounds that there are technically and commercially viable alternatives to the interconnection requested, and that the requested interconnection is inappropriate in relation to the resources available to meet the request. Any such limitation imposed by a national regulatory authority shall be fully reasoned and made public in accordance with Article 14(2).
2. Organizations authorized to provide public telecommunications networks and publicly available telecommunications services as set out in Annex I which have significant market power shall meet all reasonable requests for access to the network including access at points other than the network termination points offered to the majority of end users.
3. An Organization shall be presumed to have significant market power when it has a share of more than 25% of a particular telecommunications market in the geographical area in a Member State within which it is authorized to operate.

National regulatory authorities may nevertheless determine that an Organization with a market share of less than 25% in the relevant market has significant market power. They may also determine that an Organization with a market share of more than 25% in the relevant market does not have significant market power. In either case, the determination shall take into account the Organization's ability to influence market conditions, its turnover relative to the size of the market, its control of the means of access to end users, its access to financial resources and its experience in providing products and services in the market.

#### **Article 5**

##### **Interconnection and universal service contributions**

1. Where a Member State determines, in accordance with the provisions of this Article, that universal service obligations represent an unfair burden on an Organization, it shall establish a mechanism for sharing the net cost of the universal service obligations with other Organizations operating public telecommunications networks and/or publicly available voice telephony services. Member States shall take due account of the principles of transparency, non-discrimination and proportionality in setting the contributions to be made. Only public telecommunications networks and publicly available telecommunications services as set out in Part I of Annex I may be financed in this way.
2. Contributions to the cost of universal service obligations if any may be based on a mechanism specifically established for the purpose and administered by a body independent of the beneficiaries, and/or may take the form of a supplementary charge added to the interconnection charge.
3. In order to determine the burden if any which the provision of universal service represents, Organizations with universal service obligations shall, at the request of their national regulatory authority, calculate the net cost of such obligations in accordance with Annex III. The calculation of the net cost of universal service obligations shall be audited by the national regulatory authority or another competent body, independent of the telecommunications Organization, and approved by the national regulatory authority. The results of the cost calculation and the conclusions of the audit shall be open to the public in accordance with Article 14(2).
4. Where justified on the basis of the net cost calculation referred to in paragraph 3, and taking into account the market benefit if any which accrues to an Organization that offers universal service, national regulatory authorities shall determine whether a mechanism for sharing the net cost of universal service obligations is justified.
5. Where a mechanism for sharing the net cost of universal service obligations as referred to in paragraph 4 is established, national regulatory authorities shall ensure that the principles for cost sharing, and details of the mechanism used, are open to public inspection in accordance with Article 14(2).

National regulatory authorities shall ensure that an annual report is published giving the calculated cost of universal service obligations, and identifying the contributions made by all the parties involved.

6. Until such time as the procedure described in paragraphs 3, 4 and 5 is implemented, any charges payable by an interconnected party, which include or serve as a contribution to the cost of universal service obligations shall be notified, prior to their introduction, to the national regulatory authority. Without prejudice to Article 17 of this Directive, where the national regulatory authority finds on its own initiative, or after a substantiated request by an interested party, that such charges are excessive, the Organization concerned shall be required to reduce the relevant charges. Such reductions shall be applied retrospectively, from the date of introduction of the charges, but not before 1 January 1998.

#### **Article 6**

##### **Non-discrimination and transparency**

For interconnection to public telecommunications networks and publicly available telecommunications services as set out in Annex I provided by Organizations which have been notified by national regulatory authorities as having significant market power, Member States shall ensure that:

- (a) the Organizations concerned adhere to the principle of non-discrimination with regard to interconnection offered to others. They shall apply similar conditions in similar circumstances to interconnected Organizations providing similar services, and shall provide interconnection facilities and information to others under the same conditions and of the same quality as they provide for their own services, or those of their subsidiaries or partners;
- (b) all necessary information and specifications are made available on request to Organizations considering interconnection, in order to facilitate conclusion of an agreement; the information provided should include changes planned for implementation within the next six months, unless agreed otherwise by the national regulatory authority;

- (c) interconnection agreements are communicated to the relevant national regulatory authorities, and made available on request to interested parties, in accordance with Article 14(2), with the exception of those parts, which deal with the commercial strategy of the parties. The national regulatory authority shall determine which parts deal with the commercial strategy of the parties. In every case, details of interconnection charges, terms and conditions and any contributions to universal service obligations shall be made available on request to interested parties.
- (d) information received from an Organization seeking interconnection is used only for the purpose for which it was supplied. It shall not be passed on to other departments, subsidiaries or partners for whom such information could provide a competitive advantage.

#### Article 7

#### **Principles for interconnection charges and cost accounting systems**

1. Member States shall ensure that the provisions of paragraphs 2 to 6 apply to Organizations operating the public telecommunications networks and/or publicly available telecommunications services as set out in Parts 1 and 2 of Annex I, which have been notified by national regulatory authorities as having significant market power.
2. Charges for interconnection shall follow the principles of transparency and cost orientation. The burden of proof that charges are derived from actual costs including a reasonable rate of return on investment shall lie with the Organization providing interconnection to its facilities. National regulatory authorities may request an Organization to provide full justification for its interconnection charges, and where appropriate shall require charges to be adjusted. This paragraph shall also apply to Organizations set out in Part 3 of Annex I which have been notified by national regulatory authorities as having significant market power on the national market for interconnection.
3. National regulatory authorities shall ensure the publication, in accordance with Article 14(1), of a reference interconnection offer. The reference interconnection offer shall include a description of the interconnection offerings broken down into components according to market needs, and the associated terms and conditions including tariffs.

Different tariffs, terms and conditions for interconnection may be set for different categories of Organizations which are authorized to provide networks and services, where such differences can be objectively justified on the basis of the type of interconnection provided and/or the relevant national licensing conditions. National regulatory authorities shall ensure that such differences do not result in distortion of competition, and in particular that the Organization applies the appropriate interconnection tariffs, terms and conditions when providing interconnection for its own services or those of its subsidiaries or partners, in accordance with Article 6(a).

The national regulatory authority shall have the ability to impose changes in the reference interconnection offer, where justified.

Annex IV provides a list of examples of elements for further elaboration of interconnection charges, tariff structures and tariff elements. Where an Organization makes changes to the published reference interconnection offer, adjustments required by the national regulatory authority may be retrospective in effect, from the date of introduction of the change.

4. Charges for interconnection shall, in accordance with Community law, be sufficiently unbundled, so that the applicant is not required to pay for anything not strictly related to the service requested.
5. The Commission shall, acting in accordance with the procedure laid down in Article 15, draw up recommendations on cost accounting systems and accounting separation in relation to interconnection. National regulatory authorities shall ensure that the cost accounting systems used by the Organizations concerned are suitable for implementation of the requirements of this Article, and are documented to a sufficient level of detail, as indicated in Annex V.

National regulatory authorities shall ensure that a description of the cost accounting system, showing the main categories under which costs are grouped and the rules used for the allocation of costs to interconnection, is made available on request. Compliance with the cost accounting system shall be verified by the national regulatory authority or another competent body, independent of the telecommunications Organization and approved by the national regulatory authority. A statement concerning compliance shall be published annually.

6. Where they exist, charges related to the sharing of the cost of universal service obligations, as described in Article 5, shall be unbundled and identified separately.

## **Article 8**

### **Accounting separation and financial reports**

1. Member States shall require Organizations providing public telecommunications networks and/or publicly available telecommunications services which have special or exclusive rights for the provision of services in other sectors in the same or another Member State to keep separate accounts for the telecommunications activities, to the extent that would be required if the telecommunications activities in question were carried out by legally independent companies, so as to identify all elements of cost and revenue, with the basis of their calculation and the detailed attribution methods used, related to their telecommunications activities including an itemized breakdown of fixed asset and structural costs, or to have structural separation for the telecommunications activities.

Member States may choose not to apply the requirements referred to in the first subparagraph to these Organizations where their annual turnover in telecommunications activities in the Community is less than the limit set in Part 1 of Annex VI.

2. Member States shall require Organizations operating public telecommunications networks and/or publicly available telecommunications services as set out in Parts 1 and 2 of Annex I and notified by national regulatory authorities as Organizations having significant market power which provide public telecommunications networks and/or telecommunications services available for users and which offer interconnection services to other Organizations, to keep separate accounts for, on the one hand, their activities related to interconnection – covering both interconnection services provided internally and interconnection services provided to others – and, on the other hand, other activities, so as to identify all elements of cost and revenue, with the basis of their calculation and the detailed attribution methods used, related to their interconnection activity, including an itemized breakdown of fixed asset and structural costs.

Member States may choose not to apply the requirements referred to in the first subparagraph to Organizations where their annual turnover in telecommunications activities in the Member States is less than the limit set in Part 2 of Annex VI.

3. Organizations providing public telecommunications networks and/or publicly available telecommunications services shall provide financial information to their national regulatory authority promptly on request and to the level of detail required. National regulatory authorities may publish such information as would contribute to an open and competitive market, while taking account of considerations of commercial confidentiality.

4. The financial reports of Organizations providing public telecommunications networks or publicly available telecommunications services shall be drawn up and submitted to independent audit and published. The audit shall be carried out in accordance with the relevant rules of national legislation.

The first subparagraph shall also apply to the separate accounts required in paragraphs 1 and 2.

## **Article 9**

### **General responsibilities of the national regulatory authorities**

1. National regulatory authorities shall encourage and secure adequate interconnection in the interests of all users, exercising their responsibility in a way that provides maximum economic efficiency and gives the maximum benefit to end users. In particular, national regulatory authorities shall take into account:

- the need to ensure satisfactory end-to-end communications for users;
- the need to stimulate a competitive market;
- the need to ensure the fair and proper development of a harmonized European telecommunication market,
- the need to cooperate with their counterparts in other Member States;
- the need to promote the establishment and development of Trans-European networks and services, and the interconnection of national networks and interoperability of services, as well as access to such networks and services;
- the principles of non-discrimination (including equal access) and proportionality;
- the need to maintain and develop universal service.

2. General conditions set down in advance by the national regulatory authority shall be published in accordance with Article 14(1).

In particular, in relation to interconnection between Organizations set out in Annex II, national regulatory authorities:

- may set ex ante conditions in the areas listed in Part 1 of Annex VII;
- shall encourage coverage in interconnection agreements of the issues listed in Part 2 of Annex VII.

3. In pursuit of the aims stated in paragraph 1, national regulatory authorities may intervene on their own initiative at any time, and shall do so if requested by either party, in order to specify issues which must be covered in an interconnection agreement, or to lay down specific conditions to be observed by one or more parties to such an agreement. National regulatory authorities may, in exceptional cases, require changes to be made to interconnection agreements already concluded, where justified to ensure effective competition and/or interoperability of services for users.

Conditions set by the national regulatory authority may include inter alia conditions designed to ensure effective competition, technical conditions, tariffs, supply and usage conditions, conditions as to compliance with relevant standards, compliance with essential requirements, protection of the environment, and/or the maintenance of end-to-end quality of service.

The national regulatory authority may, on its own initiative at any time or if requested by either party, also set time limits within which negotiations on interconnection are to be completed. If agreement is not reached within the time allowed, the national regulatory authority shall take steps to bring about an agreement under procedures laid down by that authority. The procedures shall be open to the public in accordance with Article 14(2).

4. Where an Organization authorized to provide public telecommunications networks or publicly available telecommunications services enters into interconnection agreements with others, the national regulatory authority shall have the right to inspect all such interconnection agreements in their entirety.

5. In the event of an interconnection dispute between Organizations in a Member State, the national regulatory authority of that Member State shall, at the request of either party, take steps to resolve the dispute within six months of this request. The resolution of the dispute shall represent a fair balance between the legitimate interests of both parties.

In so doing, the national regulatory authority shall take into account, inter alia:

- the user interest,
- regulatory obligations or constraints imposed on any of the parties,
- the desirability of stimulating innovative market offerings, and of providing users with a wide range of telecommunications services at a national and at a Community level,
- the availability of technically and commercially viable alternatives to the interconnection requested,
- the desirability of ensuring equal access arrangements,
- the need to maintain the integrity of the public telecommunications network and the interoperability of services,
- the nature of the request in relation to the resources available to meet the request,
- the relative market positions of the parties,
- the public interest (e.g. the protection of the environment),
- the promotion of competition,
- the need to maintain a universal service.

A decision on the matter by a national regulatory authority shall be made available to the public in accordance with national procedures. The parties concerned shall be given a full statement of the reasons on which it is based.

6. In cases where Organizations which are authorized to provide public telecommunications networks and/or publicly available telecommunications services have not interconnected their facilities, national regulatory authorities, in compliance with the principle of proportionality and in the interest of users, shall be able, as a last resort, to require the Organizations concerned to interconnect their facilities in order to protect essential public interests and, where appropriate, shall be able to set terms of interconnection.

#### **Article 10** **Essential requirements**

Without prejudice to action which may be taken in accordance with Articles 3(5) and 5(3) of Directive 90/387/EEC, the essential requirements as specified in Article 3(2) of Directive 90/387/EEC shall for the purpose of this Directive apply to interconnection to public telecommunications networks and/or publicly available telecommunications services as set out in points (a) to (d) of this Article.

Where the national regulatory authority imposes conditions based on essential requirements in interconnection agreements, these conditions shall be published in the manner laid down in Article 14(1).

- (a) Security of network operations: Member States shall take all necessary steps to ensure that the availability of public telecommunications networks and publicly available telecommunications services is maintained in the event of catastrophic network breakdown or in exceptional cases of force majeure, such as extreme weather, earthquakes, flood, lightning or fire. In the event of the circumstances referred to in the first subparagraph, the bodies concerned shall make every endeavour to maintain the highest level of service to meet any priorities laid down by the competent national authorities. The need to meet these requirements shall not constitute a valid reason for refusal to negotiate terms for interconnection. Furthermore, the national regulatory authority shall ensure that any conditions for interconnection related to the security of networks as regards risk of accidents are proportionate and non-discriminatory in nature, and are based on objective criteria identified in advance.
- (b) Maintenance of network integrity: Member States shall take all necessary steps to ensure that the integrity of public telecommunications networks is maintained. The need to maintain network integrity does not constitute a valid reason for refusal to negotiate terms for interconnection. The national regulatory authority shall ensure that any conditions for interconnection related to protection of network integrity are proportionate and non-discriminatory in nature, and are based on objective criteria identified in advance.
- (c) Interoperability of services: Member States may impose conditions in interconnection agreements in order to ensure interoperability of services, including conditions designed to ensure satisfactory end-to-end quality. Such conditions may include implementation of specific technical standards, or specifications, or codes of conduct agreed by the market players.
- (d) Protection of data: Member States may impose conditions in interconnection agreements in order to ensure the protection of data, to the extent necessary to ensure compliance with relevant regulatory provisions on the protection of data including protection of personal data, the confidentiality of information processed, transmitted or stored, and the protection of privacy, compatible with Community law.

#### **Article 11** **Collocation and facility sharing**

Where an Organization providing public telecommunications networks and/or publicly available telecommunications services has the right under national legislation to install facilities on, over or under public or private land, or may take advantage of a procedure for the expropriation or use of property, national regulatory authorities shall encourage the sharing of such facilities and/or property with other Organizations providing telecommunications networks and publicly available services, in particular where essential requirements deprive other Organizations of access to viable alternatives.

Agreements for collocation or facility sharing shall normally be a matter for commercial and technical agreement between the parties concerned. The national regulatory authority may intervene to resolve disputes, as provided for in Article 9.

Member States may impose facility and/or property sharing arrangements (including physical collocation) only after an appropriate period of public consultation during which all interested parties must be given an opportunity to express their views. Such arrangements may include rules for apportioning the costs of facility and/or property sharing.

#### **Article 12** **Numbering**

1. Member States shall ensure the provision of adequate numbers and numbering ranges for all publicly available telecommunications services.

2. In order to ensure full interoperability of Europe-wide networks and services, Member States in accordance with the Treaty shall take all necessary steps to ensure the coordination of their national positions in international Organizations and fora where numbering decisions are taken, taking into account possible future developments in numbering in Europe.

3. Member States shall ensure that national telecommunications numbering plans are controlled by the national regulatory authority, in order to guarantee independence from Organizations providing telecommunications networks or telecommunications services and facilitate number portability. In order to ensure effective competition, national regulatory authorities shall ensure that the procedures for allocating individual numbers and/or numbering ranges are transparent, equitable and timely and the allocation is carried out in an objective, transparent and non-discriminatory manner. National regulatory authorities may lay down conditions for the use of certain prefixes or certain short codes, in particular where these are used for services of general public interest (e.g. freephone services, kiosk billed services, directory services, emergency services), or to ensure equal access.

4. National regulatory authorities shall ensure that the main elements of the national numbering plans, and all subsequent additions or amendments to them, are published in accordance with Article 14(1), subject only to limitations imposed on the grounds of national security.

5. National regulatory authorities shall encourage the earliest possible introduction of the number portability facility whereby end users who so request can retain their number(s) on the fixed public telephone network at a specific location independent of the Organization providing service, and shall ensure that this facility is available at least in all major centres of population before 1 January 2003.

In order to ensure that charges to consumers are reasonable, national regulatory authorities shall ensure that pricing for interconnection related to the provision of this facility is reasonable.

6. National regulatory authorities shall ensure that numbering plans and procedures are applied in a manner that gives fair and equal treatment to all providers of publicly available telecommunications services. In particular, Member States shall ensure that an Organization allocated a range of numbers shall avoid undue discrimination in the number sequences used to give access to the services of other telecommunications operators.

### **Article 13** **Technical standards**

1. Without prejudice to Article 5(3) of Directive 90/387/EEC whereby the implementation of specified European standards may be made compulsory, national regulatory authorities shall ensure that Organizations providing public telecommunications networks or publicly available telecommunications services take full account of standards listed in the Official Journal of the European Communities as being suitable for the purpose of interconnection.

In the absence of such standards, national regulatory authorities shall encourage the provision of technical interfaces for interconnection according to the standards or specifications listed below:

- standards adopted by European standardization bodies such as the European Telecommunications Standards Institute (ETSI) or the European Committee for Standardization/European Committee for Electro technical Standardization (CEN/CENELEC),
- or, in the absence of such standards,
- international standards or recommendations adopted by the International Telecommunications Union (ITU), the International Organization for Standardization (ISO) or the International Electro technical Committee (IEC),
- or, in the absence of such standards,
- national standards.

2. The Commission may, acting in accordance with the procedure laid down in Article 15, request standards for interconnection and access to be drawn up, where appropriate, by European standardization bodies. Reference to standards for interconnection and access may be published in the Official Journal of the European Communities in accordance with Article 5 of Directive 90/387/EEC.

### **Article 14** **Publication of and access to information**

1. With regard to the information identified in Article 7(3), Article 9(2), Article 10 and Article 12(4), national regulatory authorities shall ensure that up-to-date information is published in an appropriate manner in order to provide easy access to that information for interested parties. Reference shall be made in the national Official Gazette of the Member State concerned to the manner in which this information is published.

2. With regard to the information identified in Article 4(1), Article 5(3), Article 5(5), Article 6(c) and Article 9(3), national regulatory authorities shall ensure that up-to-date specific information referred to in those Articles is made available on request to interested parties, free of charge, during normal working hours. Reference shall be made in the national Official Gazette of the Member State concerned to the times and location(s) at which the information is available.

3. Member States shall notify to the Commission before 1 January 1998 – and immediately thereafter in case of any change – the manner in which the information referred to in paragraphs 1 and 2 is made available. The Commission shall regularly publish a corresponding reference to such notifications in the Official Journal of the European Communities.

### **Article 15**

#### **Advisory Committee procedure**

1. The Commission shall be assisted by the committee set up by Article 9(1) of Directive 90/387/EEC, hereinafter referred to as the "ONP Committee".
2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft, within a time limit, which the chairman may lay down according to the urgency of the matter, if necessary by taking a vote.
3. The opinion shall be recorded in the minutes; in addition, each Member State shall have the right to ask to have its position recorded in the minutes.

The Commission shall take the utmost account of the opinion delivered by the committee. It shall inform the committee of the manner in which its opinion has been taken into account.

### **Article 16**

#### **Regulatory Committee procedure**

1. Notwithstanding the provisions of Article 15, the following procedure shall apply in respect of the matters covered by Article 19.
2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time limit, which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions, which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The chairman shall not vote.
3. The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the committee.
4. If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If on the expiry of a period of three months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

### **Article 17**

#### **Procedure for resolving disputes between Organizations operating under authorizations provided by different Member States**

1. Without prejudice to:
  - any action that the Commission or any Member State may take pursuant to the Treaty;
  - the rights of the party invoking the procedure in paragraphs 2 and 3, of the Organizations concerned or of any other party under applicable national law;

The procedure set out in paragraphs 2 and 3 shall be available for the resolution of interconnection disputes between Organizations operating under authorizations granted by different Member States, where such dispute does not fall within the responsibility of a single national regulatory authority exercising its power in accordance with Article 9.

2. Any party having a complaint against another Organization over interconnection may refer the complaint to the national regulatory authority of the Member State that has granted the authorization of the Organization against which the complaint is made. The national regulatory authority shall take steps to resolve the dispute in accordance with the procedures and timescale set out in Article 9(5).



3. Where there are concurrent disputes between the same two Organizations, the national regulatory authorities concerned shall, on request of either party in dispute, coordinate their efforts in order to bring about resolution of the disputes, in accordance with the principles set out in Article 9(1), within 6 months of referral. The solutions shall represent a fair balance between the legitimate interests of both parties in dispute and be consistent with interconnection rules in the Member States concerned, in conformity with Community law.

#### **Article 18** **Notification**

1. Member States shall ensure that national regulatory authorities have the necessary means for carrying out the tasks identified in this Directive, and shall notify to the Commission by 31 January 1997 the national regulatory authorities responsible for those tasks.

2. National regulatory authorities shall notify to the Commission by 31 January 1997, and immediately thereafter in the event of any change, the names of those Organizations which:

- have universal service obligations for the provision of the public telecommunications networks and publicly available telecommunications services set out in Part 1 of Annex I and which are authorized to collect directly a contribution to the net cost of universal service under the procedure in Article 5(2);
- are subject to the provisions of this Directive concerning Organizations with significant market power;
- are covered by Annex II.

The Commission may request national regulatory authorities to provide their reasons for classifying an Organization as having or not having significant market power.

3. The Commission shall publish the names referred to in paragraph 2 in the Official Journal of the European Communities.

#### **Article 19** **Technical adjustment**

Modifications necessary to adapt Annexes IV, V and VII to the Directive to new technological developments or to changes in market and consumer demand shall be determined by the Commission in accordance with the procedure laid down in Article 16.

#### **Article 20** **Deferment**

1. Deferment of the obligations under Articles 3(1), 3(2), 4(1), 4(2), 9(1) and 9(3) insofar as those obligations concern direct interconnection between the mobile networks of that Member State and the fixed or mobile networks of other Member States, and under Article 5, shall be granted to those Member States identified in the Council Resolutions of 22 July 1993 and 22 December 1994 which benefit from an additional transition period for the liberalization of telecommunications services for as long as and to the extent that they avail themselves of such transition periods. Member States shall inform the Commission of their intention to make use of them.

2. Deferment of the obligations under Article 12(5) may be requested where the Member State concerned can prove that they would impose an excessive burden on certain Organizations or classes of Organization. The Member State shall inform the Commission of the reasons for requesting a deferment, the date by which the requirements can be met, and the measures envisaged in order to meet this deadline. The Commission shall consider the request taking into account the particular situation in that Member State and the need to ensure a coherent regulatory environment at a Community level, and shall inform the Member State whether it deems that the particular situation in that Member State justifies a deferment and, if so, until which date such deferment is justified.

#### **Article 21** **Interconnection with third country Organizations**

1. Member States may inform the Commission of any general difficulties encountered, de jure or de facto, by Community Organizations in interconnecting with Organizations in third countries, which have been brought to their attention.

2. Whenever the Commission is informed of the existence of such difficulties, the Commission may, if necessary, submit proposals to the Council for an appropriate mandate for negotiation of comparable rights for Community Organizations in these third countries. The Council shall decide by qualified majority.

3. Measures taken pursuant to paragraph 2 shall be without prejudice to the Community and Member States' obligations under relevant international agreements.

#### **Article 22**

##### **Review**

1. The Commission shall report to the European Parliament and to the Council by 31 December 1997, and periodically thereafter, on the availability of rights to interconnect in third countries for the benefit of Community Organizations.

2. The Commission shall examine and report periodically to the European Parliament and to the Council on the functioning of this Directive, on the first occasion not later than 31 December 1999. For this purpose, the Commission may request information from the Member States.

The report shall examine what provisions of this Directive should be adapted in the light of the developments in the market, the evolution of technology and the changes in user demand, in particular:

- (a) for the provisions under Article 5;
- (b) to confirm the timetable laid down in Article 12(5).

The Commission shall also investigate in the report the added value of the setting up of a European Regulatory Authority to carry out those tasks, which would prove to be better undertaken at Community level.

#### **Article 23**

##### **Transposition**

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1997. They shall immediately inform the Commission thereof.

When Member States adopt these provisions, these shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by Member States.

2. Member States shall communicate to the Commission the texts of the main provisions of national law, which they adopt in the field covered by this Directive.

#### **Article 24**

##### **Entry into force**

This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.

#### **Article 25**

##### **Addressees**

This Directive is addressed to the Member States.

Done at Brussels,

**For the European Parliament**

*The President*

**For the Council**

*The President*

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**ANNEX I**

**SPECIFIC PUBLIC TELECOMMUNICATIONS NETWORKS AND PUBLICLY AVAILABLE TELECOMMUNICATIONS SERVICES**

referred to in Article 3(2)

The following public telecommunications networks and publicly available telecommunications services are considered of major importance at European level.

Organizations providing the public telecommunications networks and/or publicly available services identified below which have significant market power are subject to specific obligations with regard to interconnection and access, as specified in Articles 4(2), 6 and 7.

**Part 1**

**The fixed public telephone network**

The fixed public telephone network means the public switched telecommunications network which supports the transfer between network termination points at fixed locations of speech and 3,1 kHz bandwidth audio information, to support inter alia:

- voice telephony;
- facsimile Group III communications, in accordance with ITU-T Recommendations in the "T-series";
- voice band data transmission via modems at a rate of at least 2 400 bit/s, in accordance with ITU-T Recommendations in the "V-series".

Access to the end user's network termination point is via a number or numbers in the national numbering plan.

The fixed public telephone service according to Directive 95/62/EC of the European Parliament and of the Council of 13 December 1995 on the application of open network provision (ONP) to voice telephony<sup>551</sup>.

The fixed public telephone service means the provision to end users at fixed locations of a service for the originating and receiving of national and international calls, and may include access to emergency (112) services, the provision of operator assistance, directory services, provision of public pay phones, provision of service under special terms and/or provision of special facilities for customers with disabilities or with special social needs.

Access to the end user is via a number or numbers in the national numbering plan.

**Part 2**

**The leased lines service**

Leased lines means the telecommunications facilities which provide for transparent transmission capacity between network termination points, and which do not include on-demand switching (switching functions which the user can control as part of the leased line provision). They may include systems, which allow flexible use of the leased line bandwidth, including certain routing and management capabilities.

**Part 3**

**Public mobile telephone networks**

A public mobile telephony network is a public telephone network where the network termination points are not at fixed locations.

**Public mobile telephone services**

A public mobile telephone service is a telephony service whose provision consists, wholly or partly, in the establishment of Radiocommunications to one mobile user, and makes use wholly or partly of a public mobile telephone network.

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<sup>551</sup> (OJ L 321). 30.12.1995. p. 6.

**ANNEX II**  
**ORGANIZATIONS WITH RIGHTS AND OBLIGATIONS TO NEGOTIATE  
INTERCONNECTION WITH EACH OTHER IN ORDER TO ENSURE  
COMMUNITY-WIDE SERVICES**

referred to in Article 4(1)

This Annex covers those Organizations, which provide switched and unswitched bearer capabilities to users upon which other telecommunications services depend.

Organizations in the following categories have both rights and obligations to interconnect with each other, in accordance with Article 4(1). Interconnection between these Organizations is subject to additional supervision by national regulatory authorities, in accordance with Article 9(2). Special interconnection charges, terms and conditions may exist for these categories of Organizations in accordance with Article 7(3).

1. Organizations which provide fixed and/or mobile public switched telecommunications networks and/or publicly available telecommunications services, and in so doing control the means of access to one or more network termination points identified by one or more unique numbers in the national numbering plan. (See notes below)
2. Organizations, which provide leased lines to users' premises.
3. Organizations which are authorized in a Member State to provide international telecommunications circuits between the Community and third countries, for which purpose they have exclusive or special rights.
4. Organizations providing telecommunications services, which are permitted in this category to interconnect in accordance with relevant national licensing or authorization schemes.

Notes

Control of the means of access to a network termination point means the ability to control the telecommunications services available to the end user at that network termination point and/or the ability to deny other service providers' access to the end user at that network termination point.

Control of the means of access may entail ownership or control of the physical link to the end user (whether wire or wireless), and/or the ability to change or withdraw the national number or numbers needed to access an end user's network termination point.

**ANNEX III**  
**CALCULATING THE COST OF UNIVERSAL SERVICE OBLIGATIONS FOR  
VOICE TELEPHONY**

referred to in Article 5(3)

Universal service obligations refer to those obligations placed upon an Organization by a Member State which concern the provision of a network and service throughout a specified geographical area, including – where required – averaged prices in that geographical area for the provision of that service.

The cost of universal service obligations shall be calculated as the difference between the net cost for an Organization of operating with the universal service obligations and operating without the universal service obligations.

This applies whether the network in a particular Member State is fully developed or is still undergoing development and expansion.

The calculation shall be based upon the costs attributable to:

- (i) elements of the identified services, which can only be provided at a loss or provided under, cost conditions falling outside normal commercial standards.

This category may include service elements such as access to emergency telephone services, provision of certain public pay telephones, provision of certain services or equipment for disabled people, etc.

- (ii) specific end users or groups of end users who, taking into account the cost of providing the specified network and service, the revenue generated and any geographical averaging of prices imposed by the Member State, can only be served at a loss or under cost conditions falling outside normal commercial standards.

This category includes those end users or groups of end users, which would not be served by a commercial operator, which did not have an obligation to provide universal service.

In peripheral regions with expanding networks, the cost calculation should be based on the additional cost of serving those end users or groups of end users, which an operator applying the normal commercial principles of a competitive environment would choose not to serve.

Revenues shall be taken into account in calculating the net costs. Costs and revenues should be forward-looking.

#### **ANNEX IV**

##### **LIST OF EXAMPLES OF ELEMENTS FOR INTERCONNECTION CHARGES**

referred to in Article 7(3)

Interconnection charges refer to the actual charges payable by interconnected parties.

The tariff structure refers to the broad categories into which interconnection charges are divided, e.g.

- charges to cover initial implementation of the physical interconnection, based on the costs of providing the specific interconnection requested (e.g. specific equipment and resources; compatibility testing),
- rental charges to cover the on-going use of equipment and resources (connection maintenance, etc.),
- variable charges for ancillary and supplementary services (e.g. access to directory services; operator assistance; data collection; charging; billing; switch-based and advanced services etc.),
- traffic related charges, for the conveyance of traffic to and from the interconnected network (e.g. the costs of switching and transmission), which may be on a per minute basis, and/or on the basis of additional network capacity required.

Tariff elements refer to the individual prices set for each network component or facility provided to the interconnected party.

Tariffs and charges for interconnection must follow the principles of cost orientation and transparency, in accordance with Article 7(2).

Interconnection charges may include a fair share, according to the principle of proportionality, of joint and common costs and the costs incurred in providing equal access, and number portability, and the costs of ensuring essential requirements (maintenance of the network integrity; network security in cases of emergency; interoperability of services; and protection of data).

#### **ANNEX V**

##### **COST ACCOUNTING SYSTEMS FOR INTERCONNECTION**

referred to in Article 7(5)

Article 7(5) calls for details of the cost accounting system; the list below indicates, by way of example, some elements which may be included in such accounting systems.

The purpose of publishing this information is to provide transparency in the calculation of interconnection charges, so that other market players are in a position to ascertain that the charges have been fairly and properly calculated.

This objective should be taken into account by the national regulatory authority and the Organizations affected when determining the level of detail in the information published.

The list below indicates the elements to be included in the information published.

1. The cost standard used  
e.g. fully distributed costs, long-run average incremental costs, marginal costs, stand-alone costs, embedded direct costs, etc., including the cost base(s) used,  
i.e. historic costs (based on actual expenditure incurred for equipment and systems) or forward-looking costs (based on estimated replacement costs of equipment or systems).
2. The cost elements included in the interconnection tariff  
Identification of all the individual cost components, which together make up the interconnection charge, includes the profit element.

3. The degrees and methods of cost allocation, in particular the treatment of joint and common costs  
Details of the degree to which direct costs are analyzed, and the degree and method by which joint and common costs are included in interconnection charges.
4. Accounting conventions  
i.e. the accounting conventions used for the treatment of costs covering:
  - the timescale for depreciation of major categories of fixed asset (e.g. land, buildings, equipment, etc.)
  - the treatment, in terms of revenue versus capital cost, of other major expenditure items (e.g. computer software and systems, research and development, new business development, direct and indirect construction, repairs and maintenance, finance charges, etc.)

The information on cost accounting systems, as identified in this Annex, may be amended in accordance with the procedure referred to in Article 19.

#### **ANNEX VI**

#### **THRESHOLDS FOR TELECOMMUNICATIONS TURNOVER**

referred to in Article 8(1) and 8(2)

##### **Part 1**

The threshold for annual turnover in telecommunications activities referred to in Article 8(1) shall be fifty million ecus. (ECU 50 million)

##### **Part 2**

The threshold for annual turnover in telecommunications activities referred to in Article 8(2) shall be twenty million ecus. (ECU 20 million)

#### **ANNEX VII**

#### **FRAMEWORK FOR NEGOTIATION OF INTERCONNECTION AGREEMENTS**

referred to in Article 9(2)

##### **Part 1**

##### **Areas where the national regulatory authority may set ex ante conditions**

- (a) Dispute resolution procedure
- (b) Requirements for publication/access to interconnection agreements and other periodic publication duties
- (c) Requirements for the provision of equal access and number portability
- (d) Requirements to provide facility sharing, including collocation
- (e) Requirements to ensure the maintenance of essential requirements
- (f) Requirements for allocation and use of numbering resources (including access to directory services, emergency services and pan-European numbers)
- (g) Requirements concerning the maintenance of end-to-end quality of service
- (h) Where applicable, determination of the unbundled part of the interconnection charge, which represents a contribution to, the net cost of universal service obligations

##### **Part 2**

##### **Other issues the coverage of which in interconnection agreements is to be encouraged**

- (a) Description of interconnection services to be provided
- (b) Terms of payment, including billing procedures
- (c) Locations of the points of interconnection
- (d) Technical standards for interconnection
- (e) Interoperability tests
- (f) Measures to comply with essential requirements
- (g) Intellectual property rights
- (h) Definition and limitation of liability and indemnity
- (i) Definition of interconnection charges and their evolution over time
- (j) Dispute resolution procedure between parties before requesting national regulatory authority intervention

- (k) Duration and renegotiation of agreements
- (l) Procedures in the event of alterations being proposed to the network or service offerings of one of the parties
- (m) Achievement of equal access
- (n) Provision of facility sharing
- (o) Access to ancillary, supplementary and advanced services
- (p) Traffic/network management
- (q) Maintenance and quality of interconnection services
- (r) Confidentiality of non-public parts of the agreements
- (s) Training of staff