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Telecommunications Regulation in Europe

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TELECOMMUNICATIONS REGULATION IN EUROPE

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by

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Abstract

On January 1st, 1998, “full competition” in telecommunications will be implemented, according to the deadlines set by European Union (EU) Directives.

In the last few years, all Member states have deeply reformed their regulatory frameworks for telecommunications, in order to adapt national regimes to the new market structure, in which several operators will interconnect their networks, and will have to share scarce resources, such as numbers and frequencies, and contribute to the provision and financing of universal service.

A great effort has been made and a lot has been done, with results that are substantially consistent with the criteria and principles dictated by the European Union. Nevertheless, with the notable exception of Britain, four months away from the deadline, several key provisions regarding interconnection, access and universal service are still missing or incomplete in various countries, the institution of National Regulatory Authorities (NRAs) has been substantially delayed, while the institution of a European Regulatory Authority (ERA) endowed with reasonable powers seems, on the whole, unlikely.

The paper provides a detailed discussion of how major licensing, interconnection, access, numbering and universal service issues are being dealt with in Germany, France, Italy and Spain. It then discusses the emerging regulatory structures at the national level and considers the practical possibility of creating a European regulatory structure.

It finally shows how such developments will entail somewhat peculiar entry patterns in European telecommunications, where major utilities from other sectors will play a greater role than elsewhere.

1. Introduction

On January 1st, 1998, “full competition” in telecommunications will be implemented, according to the deadlines set by European Union (EU) Directives.

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Sections 2 to 4 of this paper provide a detailed discussion of how major licensing, interconnection, access, numbering and universal service issues are being dealt with in Germany, France, Italy and Spain. Section 5 will then discuss the emerging regulatory structures at the national level and consider the practical possibility of creating a European regulatory structure. Section 6 will provide an overview of open issues.

It should be stressed that this discussion will make reference chiefly to the major continental markets (Germany, France, Spain and Italy). No specific discussion of the British picture will be provided here, because it is both far more advanced and generally better known: references will however be made where appropriate. The chapter concerning licensing is incomplete due to lack of specific rules, which had not yet been issued in Spain at the time of writing. Instead, a picture of the UK licensing regime is provided.

2. Licensing

The licensing regimes in Europe have not been defined in all countries analysed here. Spain is the most notable exception, as regulations concerning licensing procedures had not been issued by the regulatory authority at the time of writing. The case of the United Kingdom will be presented instead, together with an analysis of the French, German and Italian regulations.

- At European Union level, the guidelines for working out the procedures involved in granting licences to telecommunications networks operators have been defined as follows by the **Green Paper on the liberalisation of telecommunications**

infrastructure and CATV networks¹: (1) adoption of procedures that are open, non-discriminatory and transparent, with restrictions on the number of licences granted only on the basis of meeting certain essential requirements, for the networks destined to supply public services; (2) clear and transparent statement of the selection criteria and conditions connected with licence concession; (3) co-ordination of the licence concessions for trans-European networks so as to facilitate their operations in the various countries.

- The **Licensing Directive**² for the setting up of a common regime of general authorisations and individual licences in the telecommunications services sector provides for a distinction between general authorisation (standard licence with pre-set contents) and individual licence (which would be customised and issued on an *ad hoc* basis to individual subjects, with separate contents for each applicant). It also makes provisions for the definition of principles tuned to the procedures and conditions pertaining to authorisation and licence issuance, to finish with “one-stop shopping” within the EU. Such procedures should, to the greatest extent, facilitate and indeed accelerate new provider entry. The providers already present on the market will generally expect their licences to be renewed without need to reapply, and will thereby nevertheless enjoy an advantage over the newcomers.

Directive 97/13 requires:

- ⇒ no limitation in the number of new entrants. The only exception is given by scarce resource, such as frequencies and numbers;
- ⇒ priority to general authorisations vs. individual licences
- ⇒ no prior approval by NRAs
- ⇒ harmonised principles
- ⇒ time limits & other procedural requirements, such as licence fees to cover only administrative costs
- ⇒ harmonisation of licensing conditions, which would eventually lead to one-stop shopping to facilitate simultaneous licences in several Member States.

France

In France, the issuance of authorisations is still the responsibility of the Posts and Telecommunications Ministry, which can reject authorisation only for reasons of public order, defence, safety, or for technical limits relating to frequency availability, or when the applicant is deemed not to possess the technical or financial capacities to meet the obligations resulting from the operation of its business activity.

Authorisation is waived for certain service-provision categories such as private networks, telephone booths not located on public land, independent networks smaller than a given threshold, low-power radio networks and radio networks using different frequencies than those assigned to the user. Also, the public supply of non-telephone

¹ Commission of the European Communities (1995), *Green Paper of 25.1.1995 liberalisation of telecommunications infrastructure and CATV networks - part II* COM(94)682.

² 97/13/EC.

services across networks set up or authorised by the municipalities is regulated by presenting a simple declaration to the regulation Authority.

Special obligations are applied to providers who reach a certain turnover (such thresholds being set by the Telecommunications and Economics Ministries): they have to maintain accounting separation for the business for which authorisation is granted. Similarly, in the interests of safeguarding competition, the providers with a monopoly position - or those with a dominant position in a non-telecommunications sector - whose infrastructures can be physically separated, are obliged to keep such activities structurally distinct.

As to external influences, limits are placed on the entry of foreign providers (except for citizens of the EU and the European Economic Area: companies with more than 20% foreign capital cannot receive authorisation if the proposed business activity relates to the use of electromagnetic frequencies. The same 20% limit is set for acquisitions of French companies by foreign ones.

In synthesis, the licensing regime in France includes:

- Individual licences:
 - ⇒ for public telecoms infrastructures, voice telephony, use of frequencies
 - ⇒ rights and obligation of each carrier are laid down in a “cahier de charges”
 - ⇒ each licence has a duration of 15 years and is renewable

The number of individual licences may be limited due to scarcity of frequencies.

- Authorisation for “Independent networks” :
 - ⇒ networks for private use or closed user groups
- No authorisation is required for:
 - ⇒ private networks
 - ⇒ small independent networks
 - ⇒ limited power radio networks
 - ⇒ radio networks that use frequencies not assigned to users

Germany

The telecommunications law grants the regulatory Authority the power to issue licences or limit their number in the event of frequency shortage. Four classes of licence (for which payment is made) are defined for:

- the operation of networks for public mobile services (class 1);
- the operation of satellite networks for public satellite services (class 2);
- the operation of fixed telecommunications networks for all services not covered by classes 1 and 2 (class 3);
- the provision of voice telephony services across own telecommunications networks (class 4). This licence does not include the operation of networks.

As in the case of France, licences in Germany can be denied only for reasons of public order, defence, safety or when the applicant is deemed not to possess the technical or financial capacities to meet the obligations resulting from the operation of its business

activity. In the event of frequency shortage, licence granting takes place by way of tenders according to the rules laid down by the regulatory Authority.

Companies holding a dominant position in other markets are obliged to keep these business activities separate from their telecommunications interests, while, for those dominant in the field of telecommunications, the transparency of any financial relations between the services for which licences are granted and the unregulated ones must be guaranteed solely by accounting separation.

Italy

Most services require a general authorisation. Operators who require a general authorisation must inform the regulatory authority, which may reply within four weeks. If no reply is given, the authorisation is automatically issued. An authorisation fee may be levied by the NRA, but it can only cover administrative costs.

Individual licences are required in the following cases:

- voice telephony services
- installation and operation of public telecommunications networks, including those using radio-frequencies
- mobile and personal communication services
- radio-frequency or specific numbering allocation
- conditions and obligations related to compulsory provision of public telecommunications services and networks, including USOs
- obligations related to dominant operators for the provision of nation-wide leased lines or public telecommunications services

Open, non discriminatory and transparent procedures are to be used for the awarding of individual licences. No more than six weeks (to be extended to four months if justified) may elapse from the application for an individual licence. If a licence is subject to tender, up to eight months may go by and a committee of Ministers shall be set up to co-ordinate the tender procedures.

Individual licences may only be limited in case of scarcity of frequencies. They have a duration of no more than 15 years, are renewable, but cannot be sold without the NRA's consent.

Foreign ownership is allowed for EU and WTO citizens or countries with which reciprocity agreements are in place.

United Kingdom

The route to telecommunications reform as pursued by the EU was, to a large degree, anticipated by the United Kingdom. At the beginning of the Eighties, the UK government voted to privatise British Telecom (BT) and to gradually liberalise the telecommunications sector, in doing so allowing a single newcomer (Mercury) to enter. This “duopoly” policy was flanked by the setting up of an independent control body (OfTel) and by the application of a price cap on the tariffs of the incumbent provider. The policy chosen was one of active support to the newcomer, with the placing of entry restrictions on other entrants until Mercury had gained a solid foothold on the market.

In 1991, after 7 years and a market share of Mercury still below 10%, it was nevertheless decided to enact the “duopoly review”, which entailed the opening of the fixed-infrastructure telephone market to new potential providers, in particular CATV and mobile operators, together with “alternative infrastructures” (telecommunications networks run by the railway-, electricity- or water-utility providers). Number portability was established, and the responsibility of number allocation was transferred from BT to OfTel.

Up until 1996, the Department of Trade and Industry (DTI) had granted more than 150 licences for the provision of voice telephone services to companies controlled by the widest shareholding interests, all without restrictions on foreign-held share quotas, unlike in the case so far of the other countries examined here, where constraints on foreign holdings are set.

The present licensing regime is as follows:

- Individual licences, which include:
 - ⇒ Public Telecommunications Operator
 - ⇒ International Simple Resale

These types of licences include obligations and rights for the licence holder, such as (1) the obligation/right to interconnect with other PTOs and negotiate interconnection terms and conditions and (2) the obligation to provide access to the network to service providers. (3) They also grant the right to apply for numbers, whereas (4) universal service obligations apply only to operators with at least 25% market share.

- Class licences
 - ⇒ Self Provision Licence for services not offered to the public
 - ⇒ Telecommunications Service Licence for services offered to the public
 - ⇒ Value Added Data Services Licence
 - ⇒ Outside Broadcast Licence
 - ⇒ Satellite Class Licence

Class licence holders cannot negotiate interconnection conditions (except when they are classified as Relevant Connectable Systems) or apply for numbers.

3. Interconnection and access

This section will briefly analyse the EU policy on interconnection and access and compare national regulatory approaches in France, Germany, Italy and Spain, as framed in the new legislation that has been enacted in those countries in the last two years.

Even though the regulatory framework has not been completely defined in some of those markets and the entry of new competitors is still at a very early stage, tentative conclusions can be drawn as to different regulatory approaches on specific issues related to interconnection and access and to early developments of telecommunications markets in the above countries.

3.1 Regulation in the European Union

The EU regulatory framework has evolved over time through a series of Directives that contain relevant elements for the definition of a EU-wide interconnection regime:

- The foundation for a European interconnection policy was established by the “**Open Network Provision Framework Directive**”³ of 1990 and the “**Leased Lines Directive**”⁴ of 1992, which laid down the principles under which users (including telecommunications operators and service providers) could access infrastructures and services either for their own use or for the provision of services to third parties. These Directives are now in the process of amendment⁵, because they were adopted at a time when only terminal equipment and certain value added services were liberalised. The full liberalisation of EU telecommunications (to be completed by January 1, 1998), including voice telephony, requires an update of those Directives.
- The “**Cable TV Directive**” of 1995⁶ required abolition of restrictions on the supply of transmission capacity by cable operators; the use of such networks for the provision of telecommunications services other than voice telephony; and the direct interconnection of cable networks by cable operators.
- The “**Voice Telephony Directive**”⁷ of 1995 is currently under amendment by a new provision⁸ which provides for asymmetrical provisions in favour of new entrants (e.g. cost-orientated rates) and includes specific provisions for universal service which will be explained below.
- The “**Mobile and Personal Communications Systems Directive**” of 1996⁹ lifted

³ Directive 90/387/EEC

⁴ Directive 92/44/EEC

⁵ Common Position No. 58/96 OJC315, 24.10.96

⁶ Directive 95/51/EC

⁷ Directive 95/62/EC

⁸ COM(96)419 11.09.1996

⁹ Directive 96/2/EC

restrictions on the establishment of own infrastructures, use of third party infrastructures and sharing of infrastructures for operators of mobile and personal communications systems. It also allowed direct interconnection between separate mobile communications systems and between mobile systems and fixed networks; and established the right for mobile systems to interconnect with the public telecommunications network.

- The “**Full Competition Directive**”¹⁰ of 1996 required Member States to mandate interconnection with the public switched telecommunications network at non discriminatory, proportional and transparent conditions. It required incumbent operators to publish an interconnection offer by July 1, 1997, and to negotiate interconnection and access agreements with new entrants.
- The “**Interconnection Directive**” of 1997¹¹ requires “dominant” operators (i.e. operators with more than 25% share of a relevant geographic and service market) to allow access to their networks at cost-oriented, non discriminatory and transparent rates. Accounting separation must be adopted for interconnection services by dominant operators and alternative networks operators. The Directive also contains some provisions for the recovery of universal service costs through additional interconnection rates and/or a universal service fund. Number portability must be granted in the major metropolitan areas by January 2003.

As will be seen in the following sections, the countries surveyed in this paper have generally adhered quite closely to the guidelines set out by the EU, but they have displayed different approaches both in the timing and in the details of implementation in national regulation.

3.2 The regulatory framework for interconnection in France, Germany, Italy and Spain¹²

Entities having rights and obligations to interconnect and to provide access

Obligation to interconnect and provide access generally concerns all public network operators, consistently with EU regulation. The Italian law basically reproduces the Interconnection Directive wording (which also specifies obligation to interconnect for leased lines providers, international circuit providers with special rights and telecommunications service providers which are authorised to interconnect according to national regimes), whereas both France and Spain provide a more general definition that simply encompasses all public network operators. Germany, on the other hand, is more restrictive, as it considers interconnection as a case of special access, which must only be granted by dominant operators (i.e. with over 25% market share).

¹⁰ Directive 96/19/EC

¹¹ Directive 97/33/EC.

¹² This section compares national and EU regulation as exposed in more detail in Table 1.

The German regulations concerning interconnection coincide with those for special access, while other countries generally have separate rules for interconnection and access. All entities with significant market power must meet reasonable requests for access to their networks, including access points other than standard ones.

Interconnection services to be offered by incumbent operators and characteristics of agreements

According to the EU, national regulatory authorities (NRAs) must ensure the publication of a reference interconnection offer by dominant operators, including points of interconnection and interface specifications, unbundled according to market needs. All national regulations have implemented this requirement, except for Germany. The German law does not require Deutsche Telekom to publish a standard interconnection offer and price list, but only to make an offer at other carriers' request. In fact, Deutsche Telekom has not published a standard offer, but is negotiating prices, terms and conditions with each carrier separately. On the other hand, the French decree on interconnection outlines very specific rules detailing all types of services which must be contained in the interconnection offer¹³.

All countries abide by the EU rule that interconnection and access shall be agreed between the parties involved and communicated to the NRAs. NRAs are given the power to intervene on their own initiative or on either party's request and modify an interconnection agreement where justified to ensure effective competition and/or interoperability of services for users. Germany and Spain go further, taking advantage of a provision contained in the EU Interconnection Directive. This allows the NRAs to mandate interconnection if the parties cannot reach an agreement within a specified period.

In all countries operators must provide non discriminatory interconnection, i.e. they must apply to interconnecting parties the same conditions and quality levels they grant to themselves. They must also inform other operators of changes in their networks several

¹³ They are: (1) routing services for switched traffic, with technical access and tariff options enabling the principle of an unbundled offer to be implemented; (2) supplementary and advanced services and functions (including access to the intelligent network resources necessary for interconnection or for optimum routing of traffic) and the associated contractual terms, based on a pre-established list drawn up by the Telecommunications Regulatory Authority, after consultation with the Interconnection Committee; (3) arrangements for implementing number portability and carrier selection so as to guarantee equal access; (4) a description of all the physical points of interconnection and the access conditions at these points, if the interconnection link is provided by a third party operator; (5) the technical and tariff terms and conditions governing the links provided by third party operators to the points of interconnection and, if the third party operator wishes to supply this link, the technical and tariff conditions governing the physical and logical access to these operators' points of interconnection; (6) a comprehensive description of the interconnect interfaces proposed in the standard interconnection offer and notably the signaling protocol used at the interfaces, and the conditions for implementing them; (7) leased line connection services.

(generally 6) months in advance. Interconnection agreements must be made available to the public (excluding commercially sensitive information).

EU regulation prescribes that (1) interconnecting operators should not be required to purchase anything not strictly related to the service requested; and (2) if a dominant incumbent operator provides unbundled services to itself, the same services should be supplied to interconnecting operators.

National regulations have explicitly incorporated the first principle, while the second one may be considered implicit in the body of rules on interconnection and access. France, Italy and Spain also require that operators do not have to pay for what is not strictly related to the service requested.

A stronger interpretation of the EU general principles above has been incorporated in the German ordinance on special network access, which requires carriers to provide unbundled access to all network elements, including the local loop. It does not however identify types and number of other network elements, as does, for example, US regulation.

Interconnection charges

The main principles concerning interconnection charges in both EU and national regulations are transparency and cost orientation. This means that different terms and rates must be justified on the basis of the type of interconnection provided and/or the relevant national licensing conditions.

While for the time being all countries but Germany (which has already chosen LRIC¹⁴) have opted for fully allocated historical costs in order to determine interconnection rates, they provide for future changes in regulation and introduction of different methods to determine charges, based on long run incremental cost.

The French regulation is more detailed than others and specifies that from 1997, until the NRA defines a new method, interconnection tariffs for a given year shall be calculated using forecast accounting data, information from the operator's most recent audited accounts, and productivity improvement records. The NRA will take into account the efficiency of new investments made or forecast by the operator in view of industrially available state-of-the-art technology and international benchmarks for interconnection tariffs and costs. It thus provides some sort of forward-looking rather than historical approach, even though LRIC has not been introduced yet.

Both French and German regulation provide for the use of price caps for interconnection pricing.

¹⁴ Long run incremental cost

Cost accounting and accounting separation

National legislation attributes to NRAs the power to determine cost accounting systems of telecommunications operators (only for dominant operators in France and Italy). It also requests periodical auditing of accounts on behalf of an entity that is independent both from the operator and from the NRA. The most detailed regulation is the German one, where an ordinance on price regulation (not strictly interconnection price regulation) specifies the types of cost information which must be supplied by operators¹⁵. Methods for allocation of joint and common cost are provided in Germany (i.e. according to EU ONP principles) and in Italy (i.e. by a three-step method going from direct allocation, indirect links with other categories or via a general allocation parameter). The French and Spanish authorities have not published specifications and criteria for cost accounting systems in relation to interconnection charges.

All countries have nonetheless adopted rules requiring accounting separation for dominant operators, both for internally supplied interconnection services and for services supplied to others. The same rule applies to operators with dominant positions in other sectors, such as, for example, other utilities (electric utilities, railway operators, etc.). In the case of Italy and Germany, structural separation is required for public utilities and nation-wide radio/TV operators (the latter for Italy only).

Facility sharing and co-location

The Interconnection Directive encourages NRAs to promote facility sharing and co-location if the incumbent has rights of way, but these should be left to private negotiation between the parties concerned. The NRA should impose facility sharing and co-location only after public consultation and may intervene to resolve disputes among parties.

National regulation only explicitly prescribes co-location in Germany and in Spain (against compensation). The German decree on special access requires physical co-location, unless it is objectively not justified. In this case, virtual co-location must be provided. The Italian regulation practically reproduces the Interconnection Directive wording and attributes the power to mandate facility sharing and co-location to the NRA. No specific mention is made of virtual co-location in case physical co-location is not possible. The French regulation provides for the inclusion of facility sharing and co-location arrangements in interconnection agreements, but does not specify under which terms.

¹⁵ Operators must supply information concerning their costs, and methods and parameters on which costs are determined (e.g. description of services, conditions and quality, past and expected future revenues, quantities of service provided, demand elasticity, development of single costs, demand structure, effects of different rates on users groups). Further, the following cost information must be provided: method of cost calculation; amount of personnel costs, depreciation, interests on capital, materials costs; past and expected level of capacity usage; quantities and prices of network elements for the provision of service.

Equal access and number portability

The Interconnection Directive does not define equal access, but the Green Paper on Telecommunications Numbering proposes the implementation of call-by-call carrier selection by January 1, 1998 and carrier pre-selection by January 1, 2000. All national interconnection regulations but the French one require incumbent operators to provide equal access both on a call-by-call basis and by carrier pre-selection, generally within the time period mandated by the EU. France Télécom has chosen to provide only call-by-call operator selection, which will be priced by tariffs for switched interconnection.

As far as number portability is concerned, NRAs are encouraged by the Interconnection Directive to introduce carrier portability¹⁶ as soon as possible. The Directive does not prescribe how costs should be divided among operators. National regulation thus varies: while in Italy nothing is said about cost recovery for number portability, French regulation allows the incumbent operator to charge the new operator, which can in turn bill the customer (until January 2001). Mobile networks are excluded, but after 2001 users may also benefit from geographical mobility, i.e. retain their number in the event of a change of geographical location. Similarly, the German law allows operators to bill customers for one-time customer change costs, whereas the Spanish regulation mandates that costs should be shared among operators or arbitrated by the NRA, in case of lack of agreement among the parties. Further regulation is expected in Spain for number portability. None of national regulations provides for extension of number portability to mobile networks or special service numbers (e.g. freephone, etc.): so far, only the German national operator has announced the introduction of service number portability by 1998.

Dates of introduction of number portability also vary: while France and Germany intend to offer this feature by January 1998, Italian regulation requires it “as soon as possible”, no later than January 2001 in major cities. Spanish regulation has not determined any dates for the introduction of number portability. This will most likely be included in the forthcoming ministerial order.

¹⁶ i.e., the possibility to retain the same number if a customer switches operator without changing location.

3.3 Entry and implementation of interconnection and access regulation¹⁷

The countries surveyed in this paper all have one dominant national operator with somewhat comparable numbers of main lines, employees, productivity levels (as measured by lines per employee).

They are all partners in a strategic alliance with other large international operators: Deutsche Telekom and France Télécom are allied with each other and Sprint in the Global One venture, Telefónica recently left Unisource to join BT and MCI's Concert alliance¹⁸, and Telecom Italia has concluded agreements with AT&T and Unisource.

New entrants

Before analysing the state of interconnection agreements, it is useful to draw a picture of the competitive stage as it has developed in the last few months, in preparation for the January 1, 1998 opening of telecommunications markets to full competition.

As of August 1997, the state of entry into the telecommunications sector by fixed lines for telephone services open to the public has been very different in the countries examined here. The two extremes are Germany and Italy. The first country had already issued 37 class-3 licences (for the operation of transmission paths), out of which 5 licences were nation-wide and 32 are regional or local. There were also 15 class-4 licences (for the provision of voice telephony to the public), 7 were nation-wide and 8 were regional or local. The Ministry of Post and Telecommunications had received further applications for 45 class-3 licences and 11 class-4 licences.

On the other extreme is Italy, where no fixed public telephone network or voice telephony licence has been issued, pending the adoption of further regulation concerning licensing, which has finally been adopted at the beginning of December 1997. Spain is close to Italy, in that only one fixed public telephone network licence has been granted, although the concession of cable licences is underway at regional and local level. As of August 1997, no exact information was available on the number of licences granted. Those operators will be able to provide cable TV and telecommunications services (the provision of voice telephony services will be authorised from January 1, 1998). The fundamental difference between Spain and Italy is that the former seems to have planned the entry and growth of a second national operator: Retevisión, the new entrant, is in fact a split-off of an operator with an exclusive concession to transport national broadcast TV signals and has only recently been partially privatised. A third national licence for infrastructure is expected to be issued in January 1998.

The last country surveyed, France, has issued a quite large number of local licences for public telecommunications networks (as of August 1997, 8 experimental licences for

¹⁷ See table 2 for more detail.

¹⁸ After the break-up of Concert, Telefónica will now have to decide whether it wants to stay with BT.

public telecommunications networks, including voice telephony, and 4 licences for public telecommunications networks excluding fixed point-to-point telephone services). The experimental licences will expire after five years and no new licences of that kind will be issued after 1999. Only one nation-wide licence has been issued to date.

There seems thus to be a strong trend towards issuing a large number of local licences and a small number of nation-wide licences. It will be interesting to observe if similar developments will occur in Italy as new licences begin to be awarded at the beginning of 1998.

Some observations can also be made on the type of competitors entering the telecommunications marketplace in these countries. As has already been said, the new entrant in Spain is a TV company and the cable licences to be issued roughly belong to the same domain. Retevisión's shareholders are the Spanish government (which is in process of divesting its share), Telecom Italia, the electric utilities Endesa and Unión Fenosa and several Spanish institutional investors. The main new entrants in Italy (prospective as for now), France and Germany are also consortia including public utilities, such as power, water and railway companies. In these countries, all major joint ventures planning to apply for a licence or already licensed include one or more international telecommunications operators and one or more large utility companies. Large local investors in other sectors (e.g. computer company Olivetti and the banks BNL and Deutsche Bundesbank) are also entering the telecommunications business as competitors to incumbent operators. All national "champions" are also present in at least one of the three other markets.

A further striking element is the scarcity of institutional investors in competing consortia in Italy (only BNL is directly engaged in the sector), mainly due to the fact that investment funds, pension funds and the like are scarcely active in the Italian market.

Not much is known about minor new entrants, especially the ones operating with local licences. Not all new entrants are facilities-based. This can easily be seen by comparing nation-wide class-3 and class-4 licence holders in Germany: while DBKom, Teleglobe and Vebacom are all authorised to both operate transmission paths and provide voice telephony services, ACC Telekommunikation, Tele Danmark Internet, VIAG Interkom and Worldcom are service providers. In the local and regional markets, all new entrants hold both a class-3 and a class-4 licence, thus there are no resellers.

The most active new entrants in France, Germany, and to a minor extent, Italy are a small number of operators that are already operating in other countries, such as the US and the UK, where competition in fixed voice telephony is already allowed. Among these are Worldcom, the second-largest US long distance operator (after the MCI acquisition) and one of the major Competitive Access Providers, and COLT Telecom, a British operator (whose capital comes from a US investment fund).

Interconnection agreements

According to EU regulation, all incumbent operators were supposed to publish a standard interconnection offer by July 1, 1997 (this date was later extended until July 31). France Télécom and Telecom Italia have done so, whereas Deutsche Telekom is not bound by national legislation and has so far not complied. Nevertheless, the German Ministry of Posts and Telecommunications has recently set an average interconnection rate for Deutsche Telekom, that supposedly cut the charges the operator sought from competitors in half.

In Spain, the Minister of Development issued an order (dated March 18, 1997), setting rates and conditions for interconnection to Telefónica's public telephone network (including cable operators wishing to connect to the PSTN). This Order, which does not substitute for Telefónica's interconnection offer, was challenged in the courts by Telefónica, which will have until June 1998 to publish its standard interconnection offer and price list.

Not only are MFS-Worldcom and COLT Telecom among the first new entrants in three countries out of four, but they are also the only ones that have already concluded interconnection agreements or at least started first contacts for negotiation in all of those countries (except for Spain). In fact, the present situation of interconnection agreements in the countries surveyed is rather poor, in that in France only three operators have negotiated with France Télécom and in Germany there are six agreements as of December 1997. Italian and Spanish new entrants have only just started talks to start negotiation (as is the case of Italy) or are still in phase of negotiation (in Spain). None of the agreements signed has been approved by the NRA yet, and some of the German ones are under arbitration by the NRA, as the parties could not agree on terms and conditions. In fact competing operators seem very unhappy about the absence of a truly independent regulatory authority. The Ministry of Posts and Telecommunications, which is presently the regulator until the new authority begins operation in 1998, is also the main shareholder in Deutsche Telekom, thus possibly subject to a conflict of interests. As a matter of fact, the Ministry seems to be operating very much in favour of new entrants, rather than protect Deutsche Telekom's interests. It has recently rejected two of the interconnection agreements that the incumbent had already signed with Worldcom and Tele Danmark, which contained much higher rates than the ones set in September.

4. Universal service

4.1 Regulation in the European Union

Universal service has not been addressed in any one specific Directive, but it has been a recurring issue in several recent Commission Communications, Council of Ministers Resolutions and Directives:

- the Council of Ministers issued a **Resolution concerning the Principles of Universal Service in the Telecommunications Sector**¹⁹ in 1994, calling upon Member States to establish and maintain an appropriate regulatory framework and set appropriate targets, in order to ensure universal service throughout their territory and inviting the Commission (a) to study and consult, in particular with national regulatory authorities, on the issues raised by the definition of universal service and its means of financing; (b) to study in consultation with the Member States tariff principles, accounting principles and transfers; (c) to draw up common access charge principles;
- the Commission Communication on **“Universal Service for Telecommunications in the Perspective of a Fully Liberalised Environment”**²⁰ of 14/3/96 addressed the issues of affordability and quality of service, as well as the dynamics of universal service;
- the **Communication on Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in telecommunications and Guidelines for the Member States on Operation of such Schemes**²¹ of 27/11/96 tackled costs and financing of universal service;
- the **“Directive on Interconnection in Telecommunications with regard to ensuring Universal Service and Interoperability through application of the principles of Open Network Provision (ONP)”**²², adopted in June 1996, defined universal service, identified which entities should provide universal service, how cost calculation and financing of universal service should be addressed;
- the **Common Position adopted by the Council and the Parliament on August 14, 1997 with a view to adopting the “Council Directive on the Application of Open Network Provision (ONP) to Voice Telephony and on Universal Service for Telecommunications in a Competitive Environment”**²³ includes several references to universal service and end user protection.

¹⁹ 94/C48/01

²⁰ COM(96)73

²¹ COM(96)608

²² 97/33/EC

²³ 97/C248/05

4.2 The regulatory framework for universal service in France, Germany, Italy and Spain²⁴

The definition of universal service

Universal Service is defined in the “Interconnection Directive” as: “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”.

All countries agree on a minimum set of services which should be included in the universal service:

- point to point voice telephony services
- directory information services
- public pay phones
- publication of directories

Other services are included in one country or the other, but not in all of them:

- *France*: telephone directory in both printed and electronic form; free emergency calls (the latter are required from all public telephone service providers). Special rules apply for disadvantaged persons.
- *Germany*: ISDN features on the basis of a digitally switched network and subscriber lines with a bandwidth of 3.1 KHz; provision of transmission lines according to the EC Directive on ONP.
- *Italy*: voice telephony services include access to national and international calls, fax communications, low-speed data transmission, free emergency services, operator services; provision of special services to disabled persons or persons with social needs; lines and services concerning national public interests, i.e. public security, public emergency, national defence, justice, education, and government (must be provided but shall be financed by the requesting party).
- *Spain*: access to national and international services for voice, fax and data transmission; access to fixed telephone service for disabled persons or persons with social needs.

None of these countries provide for specific services which should be provided to special social groups, e.g. school, libraries or health care providers, as has been done in US regulation.

²⁴ This section compares national and EU regulation as exposed in more detail in Table 3.

A country that stands out as far as universal service definition is concerned is definitely France, where the universal service is included in a larger concept, called “*public services*” that also includes two other categories, namely “*compulsory services*” (i.e. access to the Isdn network, leased lines, packet switched data transmission, advanced voice telephony services and telex services) which must be provided on the entire territory; and “*missions of general interest*”²⁵ (i.e. defence and security, superior education, public research), which are ensured on behalf of the state and assumed by the state.

The French emphasis on “public services” is hardly surprising in the light of traditional policies based on the definition of the public interest and ensuring adequate quality levels of public services.

Both the EU and national regulations agree that universal service should be under regular review and with regard to scope, level, quality and affordability. The governments or the NRAs can propose and adopt changes to the current set of universal service requirements according to technological evolution, market demand or other social or policy reasons.

Entities obliged to provide universal service

In all countries analysed there may be more than one universal service provider, among public telecommunications network operators or public telephone service providers, in accordance with the principles of non discrimination and proportionality. According to French law, however, an operator may be given the responsibility of providing universal service only if it agrees to provide the service to the whole country and is capable of doing so. In fact, the designated provider of universal service is France Télécom, at least until another provider will be able to take over this task. The same goes for Italy, where Telecom Italia has been chosen as universal service provider, although after January 1, 1998 other operators may provide the service on parts of the territory, provided they have an individual licence or an authorisation.

The Spanish law on the other hand specifies that only dominant operators may be designated as universal service providers in a particular area, whereas the German regulation provides for a quite complicated mechanism, based on the assumption that no one operator should a priori have universal service obligations. Where a universal service may not be appropriately provided, each licensee operating in the relevant product market and achieving a share of at least four percent of the total sales of this market or having a dominant position in the relevant geographical market shall contribute to providing the universal service. The regulatory authority may oblige any licensee having a dominant position (i.e. over 25% market share) to provide the universal service. Where several licensees jointly have a dominant position, the regulatory authority may decide whether and to what extent it will oblige one or more of these licensees to provide the

²⁵ These services are included in universal service in the Italian regulation

universal service. Where a provider who is to be obliged to provide universal service, furnishes evidence that, in the case of such obligation, he will be able to claim compensation, the regulatory authority may, in place of the decision to oblige one or more companies, solicit bids for the universal service, awarding it to the bidder proving himself sufficiently qualified to provide the universal service and requiring the least financial compensation.

Cost of universal service

According to the EU, the cost of universal service obligations (USOs) should be calculated as the difference between the net cost for an organisation of operating with the USOs and operating without the USOs. The term “net cost” means that only the difference between total cost and revenue²⁶ should be considered. The calculation of this net cost would have to be based on the costs attributable to:

- elements of the identified services which can only be provided at a loss or provided under cost conditions falling outside normal commercial standards (e.g. emergency services, certain public pay phones, services or equipment provided to disabled persons, etc.);
- specific end users or groups of end users who, taking into account the cost of providing the specified network or service, the revenue generated and any geographical averaging of prices imposed by the Member State, can only be served at a loss or under certain cost conditions falling outside normal commercial standards.

There is thus a double dimension to the problem, one arising from the type of services provided, the other one from the user groups to which those services are provided.

As far as historical vs. forward-looking costs, EU regulation states that costs and revenues should be forward-looking and national schemes for calculating the cost of USOs may not include an “access deficit contribution” attributable to unbalanced national tariff structures, which should be rebalanced by 1 January 2000. The emphasis is on allowing rate rebalancing at the same times as ensuring USOs, thus avoiding distortions of service rates due to the need to subsidise unprofitable services or customers. National regulation mirrors these requirements quite literally in France, although more emphasis is placed on the need to compensate France Télécom for its unbalanced tariff structure and for the obligation to charge geographically averaged rates, in addition to the net cost of providing universal services to certain categories of customers. For 1997, the net cost for USOs has been set at about FFfr. 6bn (\$ 1 bn).

In Germany and Italy there is an explicit determination that net cost should be calculated based on forward-looking LRIC, including a reasonable rate of return on the capital employed for the provision of the service to non profitable customers. The Italian

²⁶ When calculating net cost a quantification of the intangible benefits of being a universal service provider should be added on the benefit side.

regulation explicitly states which costs cannot be included in the net cost of universal service: (1) the access deficit, (2) the cost of itemised billing and other additional services; (3) services not included in the universal service (e.g. services for schools, hospitals, libraries); (4) national public interest services.

The Spanish regulation is not very detailed, as the NRA has not yet established rules for cost calculations.

The financing of universal service

Once the provider of universal service has calculated the net cost, costs should be shared by other operators, usually providers of publicly available voice telephony services and public telecommunications network operators. Mobile operators may also be obliged by NRAs to contribute, as is also mandated by Italian regulation.

In Germany, only operators achieving at least four percent of the relevant market share must contribute to the financing of universal service, whereas in France and Spain operators who provide special services or conditions to disabled persons may subtract the net cost from their portion of universal service financing. The Spanish NRA may temporarily exempt some operators from USO contributions in order to promote new technologies or the development of effective competition.

According to the EU, the following operators cannot be required to finance the net costs of USOs:

- Internet access providers
- private networks offering corporate networking or closed user group services
- service providers offering data communications or value added data services
- service providers offering enhanced voice telephone services

EU regulation provides for three different methods for the financing of USOs:

- (1) a mechanism specifically established for the purpose and administered by a body independent of the beneficiaries (i.e. a universal service fund);
- (2) a supplementary charge added to the interconnection charge;
- (3) Member States may decide to fund, directly or indirectly through the State budget, part or all of the net cost of universal service in the telecommunications sector²⁷.

While none of the countries analysed here have decided to adopt the third solution (mainly because of the need to reduce state deficits), France has chosen solutions (1) and (2):

1. The net costs of tariff averaging obligations shall be financed by a charge levied in

²⁷ Such interventions must be made in a manner which is consistent with the EC Treaty's rules on State Aids.

addition to the interconnection charge²⁸, by the operator responsible for the universal service. This additional charge shall be calculated in proportion to the telephone traffic volume of the operator requesting interconnection²⁹. The NRA set the 1997 levy to be charged on interconnection rates for USOs at 1.7 centimes a minute.

2. A universal telecommunications service fund shall be created. The fund shall be used to finance the net costs of the following universal service obligations: the offer of special tariffs for certain subscriber categories in order to guarantee the accessibility of the service; the provision of public pay phones throughout the territory; the universal directory and the corresponding information service. The share of the net costs payable by each operator shall be calculated in proportion to its traffic volume.

Italy has also adopted a similar mechanism, subject to the condition that the net cost of USOs is unfair and that the related administrative costs are justified by the net cost. A universal service fund will be created to include: (1) a share of new concession fees; (2) a share of authorisation fees (with no exemption for any category of operators) and (3) a share of interconnection charges paid by operators above a certain turnover determined by the NRA.

The German regulation does not provide for the creation of a universal service fund or the payment of additional interconnection fees. A universal service levy may be imposed by the NRA to compensate the universal service provider.

The only country among this that has so far made actual calculations is France, and only for 1997 (see table 3). It is therefore not possible to compare cost estimates for different countries. What strikes most from the figures published in France is that the largest part by far of the net cost of USOs for France Télécom does not derive from the provision of specific services, but from geographical averaging and unbalanced tariffs. This means that there is still a large amount of cross-subsidies implicit in the operator's rate structure. On the one hand, that might be a good signal for new entrants, because distortions in rate structures provide competitive opportunities and allow for cream-skimming strategies. On the other hand, the requirement that all eligible operators share France Télécom's USOs testifies to the substantial protection granted to the incumbent in view of ensuring services that are considered essential for the French public.

²⁸ This levy is temporary, until France Télécom's tariffs are rebalanced and, in any case, not after December 31, 2000.

²⁹ Mobile communications operators which have national coverage obligations arising out of their schedule of conditions shall be exempt from the share of the additional fee which relates to the disequilibrium of the current telephone tariff structure. In return, the operators concerned shall agree to contribute, as of 1 January 2001 to the coverage, by at least one mobile telephone service, of main roads and other major trunk roads and scarcely populated areas not covered by such a service.

5. The building of regulatory bodies

The building of regulatory bodies endowed with sufficient powers to promote entry is proving rather difficult in the major European continental countries, as the relevant EU Directives outline such bodies only in very general terms, and old traditions of seeing telecom firms as public policy tools are fading rather slowly.

At the EU level, initial provisions for separation between regulatory functions and operational activities (e.g. existing TOs) were set out in the ONP framework Directive. The Leased Lines Directive then began assigning to National Regulatory Authorities (NRAs) several other duties and Directive 95/62 added other items concerning interconnection.

The principle of independence of the NRAs has been established only very recently, as it is contained in the Interconnection Directive of July 1997.

The very cautious approach concerning the creation and responsibilities of NRAs followed at EU level is legally based on the subsidiarity principle, which is discussed below.

In practice, however, the process has been slow because regulation through Ministerial offices has been for a number of countries a highly effective way to delay implementation of EU Directives³⁰: by mid 1995, basically only Britain and Ireland had fully implemented the requirements of the 1990 Services Directive.

The cautious approach followed at the EU level has thus meant that NRAs have been established very slowly: Spain and France had one only at the beginning of 1997, Germany and Italy will have one at the beginning of 1998.

Besides being late, the NRAs in those countries seem to suffer to a variable extent of two problems: their actual powers vis-à-vis those remaining with the relevant Ministries, and their actual degree of independence from Parliament and the Ministries.

The main powers and characteristics of the NRAs in the four countries are laid out in Table 4, and discussed briefly below.

France

The French Authority (ART) is formed by a five-member Committee, three of whom are nominated by the Government and two by the Chairmen of the two branches of Parliament.

Its powers are rather limited both formally and substantially.

On formal grounds, according to French Constitutional Law the rulings of ART acquire a

³⁰ See various contributions in European Commission (1994)

legal value only when endorsed by the Ministry of Telecommunications.

The Ministry has also substantial powers on licensing, where it has the power to specify extensive obligations in terms of service coverage, timing of provision, network and public phones availability. It is also responsible for fixing tariffs.

The Regulatory Authority (ART) has limited powers in terms of entry, as it:

- carries out the analysis of applications for mobile service licences, which are however granted by the Ministry;
- provides authorisations for non-reserved services on the basis of general criteria.

Its powers in the domain of frequency allocation are exercised within a general framework concerning “planning, management and control over utilisation” of radio waves which is the responsibility of a separate body (Agence Nationale des Fréquences).

ART has also joint powers with the Ministry in terms of universal service obligation costing, while it has sole responsibility on numbering, enforcement of licensing conditions, interconnection conditions.

In the field of competition, ART has only limited powers of investigation, while full responsibility belongs to the Competition Council and the Ministry of the Economy.

Germany

The German Regulatory Authority (RbTP) was created by the Telecommunications Act of July 1996, but will be operational only in January 1998. It is formed by a three-person Committee and by a Council of eighteen members nominated by Parliament.

The Council has very extensive powers, as it makes proposals to the Government concerning the appointment of the Committee, "participates in taking decisions" on the granting of licences, is entitled to request measures to ensure universal service and must be consulted on frequency allocation plans, which are however drawn up jointly with the Ministry.

The Committee has powers on tariffs, interconnection conditions and numbering. Technical issues fall entirely under the responsibility of the Ministry.

The RbTP assists the Federal Cartel Office in its activities, defining in particular relevant products and geographical markets and determining the existence of dominant positions.

The Office is consulted before special conditions are attached to any licence.

The Federal Cartel Office retains however full powers in prosecuting constitution and abuse of dominant positions in the telecommunications markets.

Italy

Italy is the only EU country where the NRA has powers over the entire communication sector (telecommunications and media).

The Italian NRA is composed by a nine-member Commission, eight members of which are nominated by Parliament, whereas the Chairman is appointed by the government.

The Commission is subdivided into two sub-committees, one dealing with infrastructures and networks (mainly telecommunications issues) and the other with services and products (chiefly broadcasting).

Although the Italian NRA retains full powers in the field of licensing, the Ministry has the last word with respect to frequency allocation and numbering (where the NRA has only a consultative role).

It also has no power as far as technical standards are concerned.

Competition laws are enforced by the Commission in broadcasting, advertising and publishing, while in telecommunications such powers have been left with the Antitrust Commission.

Spain

The Spanish Regulatory Authority (CMT) has been created very recently, by an April 1997 Law. It is formed by a nine-member Council appointed by the Government.

Among the four countries, its powers are more clearly defined and - on the whole - closer to EU Directive requirements.

CMT has indeed full powers on licensing, access, interconnection, numbering, USO obligations and financing; it shares its powers with the Ministry in spectrum management and technical specification.

CMT has no powers in terms of antitrust law.

A European Regulatory Body?

The outline of the powers of the NRAs in Germany, France, Italy and Spain provided above, together with the discussion of sections 2 to 4 provides a measure of the substantial distance between the emerging regulatory structure and the goal of building a "unified, coherent regulatory framework" to provide a foundation for a European Information Society.

In theory, a possible solution to this problem could be the creation of a European Regulatory Authority (ERA).

As the survey of Telecom operators, regulators and policy makers, competitors and users presented in NERA (1997) shows, there is indeed a broad support for this: 33 out of 50

respondents were in favour (the two latter categories showing stronger support). As for the areas of regulatory activity to be carried out by such body, 74% of respondents indicated interconnection, 62% implementation and enforcement of EU Directives, 61% numbering and 57% licensing.

The NERA study also shows, however, that under the EU Treaty the establishment of a body endowed with enforcement capabilities stronger than those bestowed upon the Commission is impossible, and even the creation of a body with more limited powers would require - under article 235 of the Treaty - a rather unlikely unanimity.

On general grounds, the chief obstacle towards an ERA seems really to be a strict application of the subsidiarity principle built in article 3b of the EU Treaty, where *“In areas which do not fall within its exclusive competence, the Community shall take action, in accordance with the principle of subsidiarity, only and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale of the effects of the proposed action, be better achieved by the Community. Any action by the Community shall not go beyond what is necessary to achieve the objectives of the Treaty”*.

Although it would seem that telecommunications regulation would indeed fulfil such conditions, in particular on the basis of its cross-country effects stressed at length by the Bangemann Report, the reality of telecommunications policy within the Community has moved the other way, as is made abundantly clear by article 2 of the 1996 German Act, which states *“Telecommunications and frequency regulation shall be a sovereign task of the Federal Republic of Germany”*.

6. Open issues

This paper has outlined several aspects of the complex implementation process of “full competition” in January 1998. The open issues are mainly related to the following observations:

1. The complex regulatory package formed by EU Directives has been implemented after a great deal of work in the Member states. Some issues have been subjected to delays and alterations in national legislation.

This is partly due to objective contextual differences in fifteen different countries. Moreover, the UE principles are intentionally general and States must implement consistent rules, but not necessarily identical ones. Nevertheless, the national differences will most likely cause delays in the opening up of markets and entry barriers. From the operators' point of view, it may be difficult for new entrants (especially small ones) to acquire the information and knowledge needed to operate in as many different regulatory contexts as there are Member States. Initiatives such as the one aiming at harmonising procedures to acquire licences are in fact geared towards overcoming those barriers, which might be a serious restraint to competition.

According to a recent EU Commission assessment³¹ of the transposition of the regulatory package laid out by Community Directives from 1998 onwards in national legislation, out of the major six European countries only the UK obtained a clean bill (together with Denmark, Finland and Sweden).

In Germany and France some relevant components of the regulatory framework were still missing (i.e. secondary legislation concerning licensing fees, numbering and frequency plans in Germany) or were different from what was prescribed in the Directives (i.e. the degree of independence of the NRA from the Ministry and the level of licensing fees in Germany; the granting of key powers to the Ministry concerning licensing and establishment of tariffs for universal service together with an obligation on licensees to invest at least 5% of turnover in R&D in France).

Spain had not transposed a considerable portion of the regulatory package - in particular the ONP voice telephony Directive - and had requested additional periods for the notification of licensing schemes and the availability of numbers, the implementation record as far as major Directives, therefore, is not particularly strong in the major EU countries, with the notable exception of the UK.

Italy as well was lagging behind as far as adoption of regulation on licensing and other issues is concerned. In fact, a bill on communications liberalisation (DdL 1138) has been in parliament for over a year and is not yet approved.

A good example of how national regulation has sometimes gone its own way is provided by universal service regulation in France vs. Germany. Telecommunications markets will not be opened to competition until 1998, and incumbent operators will therefore bear the burden of USOs for some time before these will be shared with others. Nevertheless, two quite opposite approaches of France and Germany deserve to be pointed out: the French regulation acknowledges the important role France Télécom plays and will continue to play in the telecoms arena and the entire framework revolves around the need to preserve the quality of services that have traditionally been provided by the public sector and the economic equilibrium of the incumbent.

On the other hand, Germany seems to take for granted that there will be no net cost of universal service. Therefore, it is not very likely that Deutsche Telekom would give up its role as universal service provider. The mechanism that has been created for ensuring service provision is thus just an emergency provision, but it is not expected that it will ever be implemented.

2. The EU Treaty prevents the establishment of an EU-level Regulatory Authority having sufficient powers to ensure effective implementation of EU Directives in Member countries, while it could allow for the creation of a weaker body, which

³¹ See European Commission, "Progress in implementing the telecommunications regulatory framework by 1 January 1998: Countdown 1998"(1997).

would basically monitor national developments.

3. The timing of liberalisation and adoption of new regulation has strongly determined the present different market conditions in the countries examined: while France and Germany (whose telecommunications laws have been adopted last year) have already issued several licences, Spain has only one new entrant and Italy none (these countries' regulatory frameworks are still in the making). The large number of licences already issued in Germany is remarkable, especially because most of them are for class-3 licences, i.e. for the operation of transmission paths and not for service provision. This leads to a first conclusion: new entrants in European countries are to a large extent facilities-based utilities, as is a logical consequence of the characteristics of regulation as outlined above.
4. Not only are the main competitors utilities, but as such they are largely publicly owned monopolies. This fact poses some questions regarding cross-subsidisation of competitive activities by monopoly activities: only in Italy and Germany has structural separation been mandated for operators engaged in monopoly activities in other sectors.

An outlook on the development of competition

The smaller new entrants, which have to date been more active in obtaining licences and negotiating interconnection agreements, are either operators already present in other countries where liberalisation is at a more advanced stage (e.g. the UK and the USA) or small local operators with specific assets related to their local activities (e.g. small cable operators or local utilities).

It may be useful to compare the EU approach with the policy adopted between 1996 and 1997 in the United States, thus allowing a more extended international comparison between two "models" of liberalisation and competition promotion that will necessarily confront each other in the near future.

In fact, in Europe there is no such thing as regulation of "resale" similar to the one adopted by the Telecommunications Act of 1996. The latter created three possible ways to enter the local market: (1) by interconnecting independent networks; (2) by purchasing unbundled network elements and combining them with own infrastructures; (3) by resale. The latter category has been very popular with potential competitors, eager to enter the market and win customers as soon as possible while (possibly, not necessarily) building their networks. In fact, many of the new entrants are either small service providers with no intention to invest in infrastructure or the larger long distance operators that want to bundle their traditional services with local service even though their networks are still under construction. Interestingly, the entry of public utilities into the telecommunications market has been rather scarce so far, in contrast with what has happened in Europe. Here, most new entrants are facilities-based operators from other utility sectors, such as the railway or electricity segments, that already possess extensive fibre networks for internal usage, ready to be used for the provision of telecommunications services.

Obviously, the need for own infrastructure in order to enter the market in a meaningful way will force potential competitors in Europe to invest heavily in network building and operation (including “hot” details such as access to rights of way and technical know-how), and take large risks linked to such investments, thus potentially delaying or discouraging entry to a large extent.

Entry by facilities-owning firms enjoying a dominant position in non-telecommunications markets, in a regulatory framework where some key provisions are treated differently in national legislation, and NRAs are not overly independent and powerful will pose a major challenge to the whole construction of EU telecommunications regulation.

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- Germany:
 - ⇒ Telekommunikationsgesetz of 1996
 - ⇒ Decree on Special Network Access of September 1996
 - ⇒ Decree on Rate Regulation of September 1996
 - ⇒ Ordinance on Universal Service of September 1996
- Italy:
 - ⇒ Law 481/95 on the institution of regulatory authorities
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- Spain:
 - ⇒ Royal decree 6/1996 of June 1996
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 - ⇒ Telecommunications Act bill (to be approved)

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APPENDIX: COMPARATIVE TABLES ON SELECTED EUROPEAN COUNTRIES

Table 1. Interconnection and access regulation

Issue	EU	France	Germany	Italy	Spain
Entities having rights and obligations to interconnect	<ul style="list-style-type: none"> • PSTN providers (fixed or mobile) and/or providers or publicly available telecom services controlling access to one or more network termination points; • organisations which provide leased lines to users premises; • organisations authorised to provide international telecommunications circuits between the community and a third country for which purpose they have special or exclusive rights; • organisations providing telecommunications services permitted to interconnect in accordance with national licensing or authorisation regimes. <p><i>Interconnection Directive of 1997, art.4.1 and Annex II</i></p>	<ul style="list-style-type: none"> • All public network operators must respond to a reasonable request for interconnection from licensed operators or providers of public telecommunications services <p><i>French Telecommunications Act of 1996, Art. L. 34-8 I</i></p>	<p>A dominant operator (i.e. with more than 25% market share) must enable interconnection of its telecommunications network with public telecommunications networks of other carriers.</p> <p><i>German Telecommunications Act of 1996, § 35</i> (Interconnection is treated as a case of special network access.)</p>	<p>Operators who:</p> <ul style="list-style-type: none"> • provide public fixed and mobile networks and telecommunications services to the public, and control the local loop • provide leased lines • have special rights and are authorised to provide international circuits among UE countries and third countries • provide telecommunications services and are authorised to interconnect, <p>must provide interconnection on request and have a right to interconnect with each other.</p> <p><i>DPR 318, Annex B</i></p>	<p>Owners of public telecommunications networks are obliged to facilitate interconnection to all similar operators and public telephone service providers who demand it.</p> <p><i>Telecommunication Bill of 1997, art. 22</i></p>
Entities obliged to provide (Special) Network Access	<p>Entities with significant market power (i.e. over 25% market share) must meet all reasonable requests for access to the network (including cable networks), including access at points other than the network termination points offered to the majority of end-users.</p> <p><i>Interconnection Directive of 1997, art.4.2</i></p>	<p>Entities with significant market power (i.e. market share over 25%) shall provide users and suppliers of telecommunications services other than the public telephone service, with access to their network. They shall also satisfy justified requests from service providers and users for special access corresponding to unpublished technical and pricing conditions.</p> <p><i>French Telecommunications Act of 1996, Art. L. 34-8 II</i></p>	<p>The telecommunications carrier providing telecommunications services for the public and having a dominant position in such market shall allow other users to access its telecommunications network or parts thereof. Such access may be granted via connections provided for all users (general network access) or via special connections (special network access).</p> <p><i>German Telecommunications Act of 1996, § 35</i></p>	<p>Dominant operators (i.e. with over 25% market share) that own public networks or provide services to the public must respond to reasonable requests for access to their networks, including points of access other than terminal network points. They must negotiate agreements for special access and respond to the specific requirements of other operators.</p> <p><i>DPR 318, art. 5</i></p>	<p>Dominant operators (i.e. with over 25% market share) of public telecommunications networks must facilitate access at objective, transparent and non discriminatory conditions to all users and service providers who request it. Special access shall be provided.</p> <p><i>Telecommunication Bill of 1997, art. 24</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Interconnection services	<p>National Regulatory Authorities (NRAs) must ensure the publication of a reference interconnection offer by certain organisations with significant market power, broken down into components according to market needs.</p> <p><i>Interconnection Directive of 1997, art.7.3</i></p> <p>Operators must publish terms and conditions for interconnection including points of interconnection and interface specifications by July 1997.</p> <p><i>Full Competition Directive 96/19/EC</i></p>	<p>Operators with a significant market power (France Télécom for now) must publish a technical and economic interconnection catalogue.</p> <p>The standard interconnection offers of these operators shall, as a minimum, include the following services and components, for public network operators:</p> <ul style="list-style-type: none"> – routing services for switched traffic, with technical access and tariff options enabling the principle of an unbundled offer to be implemented; – supplementary and advanced services and functions (including access to the intelligent network resources necessary for interconnection or for optimum routing of traffic) and the associated contractual terms, based on a pre-established list drawn up by the Telecommunications Regulatory Authority, after consultation with the Interconnection Committee; – arrangements for implementing number portability and carrier selection so as to guarantee equal access; – a description of all the physical points of interconnection and the access conditions at these points, if the interconnection link is provided by a third party operator; – the technical and tariff terms and conditions governing the links provided by third party operators to the points of interconnection and, if the third party operator wishes to supply this link, the technical and tariff conditions governing the physical and logical access to these operators' points of interconnection; – a comprehensive description of the interconnect interfaces proposed in the standard interconnection offer and notably the signalling protocol used at the interfaces, and the conditions for implementing them; – leased line connection services. <p><i>French decree on interconnection, Art. L. 34-8 I and D 99-16</i></p>	<p>Each public telecommunications carrier shall undertake to make to other carriers of such networks an interconnection offer, at their request.</p> <p><i>German Telecommunications Act of 1996, §33 and §36</i></p> <p>DT has not published a standard interconnection offer</p>	<p>Each dominant operator shall publish a standard interconnection offer. The offer must include an interconnection offer of unbundled components, according to market needs, as well as terms and conditions.</p> <p>Different interconnection terms, conditions and charges may be established for different categories of entities if they can be objectively justified and do not distort competition.</p> <p>The NRA can apply modifications to the standard interconnection offer.</p> <p><i>DPR 318, art. 4</i></p>	<p>The government will define by regulation the minimum conditions for interconnection, with reference to EU rules on open network provision.</p> <p>Dominant operators shall publish a standard interconnection offer according to those terms. It shall include unbundled interconnection offers by elements and technical and economic conditions, e.g. prices and quality levels.</p> <p>Different interconnection prices, terms and conditions may be established for different categories of entities if they can be objectively justified and do not distort competition. The NRA may modify standard interconnection offers.</p> <p><i>Telecommunications Bill of 1997, art. 22 and art. 28</i></p> <p>The right and obligations of network interconnection include the right and obligation to provide sufficient information so that all operators might offer telephone directory services or other information services related to the customer.</p> <p><i>Royal Decree of 7 June 1996 on telecommunications liberalisation</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Interconnection services	<p>Charges for interconnection shall be sufficiently unbundled, so that the applicant is not required to pay for anything not strictly related to the service requested.</p> <p><i>Interconnection Directive of 1997, art 7.4</i></p> <p>If an incumbent operator with significant market power provides unbundled services to itself, it is likely to be required to supply it or an equivalent service to interconnecting operators.</p> <p><i>Voice Telephony Directive</i></p>	<p>The technical and tariff terms and conditions for the interconnection services of dominant operators shall be broken down to a sufficient level of detail so that the various individual components required by applicants may be identified. In particular, the tariffs which relate to interconnection services shall be sufficiently unbundled, so that the applicant operator is not required to pay for facilities which are not strictly related to the service requested.</p> <p>In accordance with this principle, these operators shall offer access in their standard interconnection offer, particularly to:</p> <ul style="list-style-type: none"> – their local exchanges; – their higher level exchanges or an equivalent technical solution. <p>Interconnection at a local exchange allows access to all the operator's subscribers accessible from this same exchange without routing via a higher level exchange.</p> <p><i>French decree on interconnection, Art. D 99-15</i></p>	<p>Carriers are required to provide unbundled access to all network elements, including the local loop.</p> <p>The requirement does not apply if the carrier can prove that it is not objectively justified in a given instance.</p> <p><i>Ordinance concerning Special Network Access of 1996 §2</i></p>	<p>Economic conditions (i.e. rates) for interconnection shall be unbundled, so that the requesting operator does not have to pay for what is not strictly related to the service required.</p> <p><i>DPR 318, art. 4</i></p>	<p>Costs shall be unbundled, so that the requesting entity does not have to pay for more than what strictly related to the service required.</p> <p><i>Telecommunications Bill of 1997, art. 26</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Interconnection agreements	<p>Technical and commercial arrangements for interconnection shall be a matter for agreement between the parties involved. NRAs have the right to intervene on their own initiative at any time, and shall do so at the request of 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 require changes to be made to interconnection agreements already concluded, where justified to ensure effective competition and/or interoperability of services for users. The NRAs may 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. General conditions set down in advance by the national regulatory authority shall be published. Where an organisation authorised to provide public telecommunications networks or public 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. In the event of an interconnection dispute between organisations operating under authorisations granted by the same Member State, the national regulatory authority of that Member State shall, on request of either party, take steps to resolve the dispute within six months. If no interconnection occurs, NRAs may require operators to interconnect their facilities in order to protect essential public interests and they shall be able to set terms of interconnection.</p> <p><i>Interconnection Directive, art. 3 and art. 9</i></p>	<p>Interconnection shall be a matter for agreement between the two parties involved. This agreement shall set out the technical and financial arrangements for interconnection. A copy of this agreement shall be sent to the telecommunications regulatory authority. When essential for the purposes of fair competition and the interoperability of services, the telecommunications regulatory authority may ask for the agreement to be modified, after consultation with the competition authority. Interconnection agreements shall specify as a minimum, except with the specific accord of the Telecommunications Regulatory Authority:</p> <ul style="list-style-type: none"> • general principles (e.g. commercial and financial relations; exchange of information; liability and indemnity between operators; intellectual property rights, duration and conditions of renegotiation of agreements); • the description of the interconnection services provided and the corresponding remuneration; • the technical characteristics of interconnection services; • technical arrangements for the establishment of interconnection. <p><i>French Telecommunications Act of 1996, Art. L. 34-8</i></p>	<p>Each public telecommunications carrier shall undertake to make to other carriers of such networks an interconnection offer, at their request. The regulatory authority may impose or prohibit conduct in relation to a provider violating competitive rules and declare agreements wholly or partially invalid insofar as such provider abuses his dominant position in the market. Where no interconnection agreement has been brought about between public telecommunications carriers, the regulatory authority shall, after hearing the parties concerned, order interconnection within a period of six weeks beginning on the day of appeal by one of the parties engaged in interconnection. Within this period the regulatory authority may extend the procedure by a maximum of four weeks. It shall decide on the order within this four-week period.</p> <p><i>German Telecommunications Act of 1996, §33, §36 and §37</i></p>	<p>Interconnection and access agreements are negotiated according to rules established by the NRA.</p> <p><i>Law 249/97 art.5 comma 1</i></p> <p>The NRA has the power to:</p> <ul style="list-style-type: none"> • define objective, non discriminatory and transparent criteria for access (including criteria for maximum charges) and interconnection; • regulate relationships between operators and users of infrastructures; • resolve controversies regarding interconnection and access. <p><i>Law 249/97 art. 1 comma 6</i></p> <p>The Authority determines and publishes procedures according to which access may be refused, vocal telephony services may be suspended or reduced (by end user's fault). The Authority can intervene at any time on its own initiative or must do so if one of the parties requests intervention, in order to ensure fair, reasonable and non discriminatory access conditions. It can also modify interconnection and access agreements.</p> <p><i>DPR 318, art. 4 and 5</i></p>	<p>The interconnection agreement will be negotiated between the parties. The agreement shall include minimum conditions fixed by the government. If the two parties do not reach a satisfactory agreement, the Telecommunications Market Commission will be able to arbitrate in the conflict.</p> <p><i>Royal Decree of 7 June 1996 on telecommunications liberalisation</i></p> <p>If the negotiated agreement is likely to distort competition, the NRA may ask the parties to change it. If no interconnection occurs, the NRA may mandate it and determine its conditions, after consultation with the parties or on its own initiative, if so required by the public interest.</p> <p><i>Telecommunications Bill of 1997, art. 22.</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Non discrimination and transparency	<p>Organisations having significant market power are required to apply similar conditions in similar circumstances to interconnect organisations 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. They must:</p> <ul style="list-style-type: none"> • provide information in advance e.g. on points of interconnection; • provide advance notice of changes planned for implementation within the next 6 months; • communicate interconnect agreements to the NRA and make them available on request to interested parties (except for parts dealing with commercial strategy) <p><i>Interconnection Directive of 1997, art.6</i></p>	<p>Operators shall provide interconnection under non-discriminatory conditions, including with regard to their own departments, subsidiaries and partners.</p> <p>The technical and financial terms of the interconnection services offered, under equivalent conditions, to other operators, shall be the same as those established, where appropriate, for their own departments and for those of their subsidiaries and partners.</p> <p>The interconnection agreements shall be communicated to the Telecommunications Regulatory Authority less than ten days after its conclusion. The Telecommunications Regulatory Authority may make available to interested parties, on request, the information contained therein, without prejudice to information covered by commercial confidentiality.</p> <p>Operators having received information during the negotiation or establishment of an interconnection arrangement may only use the information for the purpose explicitly mentioned when it was supplied.</p> <p>Having established an interconnection agreement, the two operators shall inform one another, with at least one year's notice, except under mutual agreement or if the Telecommunications Regulatory Authority decides otherwise, of alterations to their network which require the interconnected operators to alter or adapt their own facilities.</p> <p><i>French decree on interconnection, Art. D 99-6, 99-7, 99-10 and 99-12</i></p>	<p>Any provider having a dominant position in a market for telecommunications services for the public shall enable competitors in such market to access, on a non-discriminatory basis, the services he uses internally and those he provides to the market, to the extent that they are essential, upon the same conditions he applies to himself for the use of such services to provide other telecommunications services, unless the establishment of less favourable conditions, particularly the imposition of restrictions, is objectively justified.</p> <p>Network access agreements must be submitted to the regulatory authority in writing; they shall be published.</p> <p><i>German Telecommunications Act of 1996, §35</i></p> <p>Dominant operators must provide other operators and users all information needed for interconnection and access and inform them of changes in services related to interconnection or access to their network with six months' notice.</p> <p><i>Ordinance concerning Special Network Access of 1996, § 4</i></p>	<p>Interconnection agreements shall be based on the following principles:</p> <ol style="list-style-type: none"> a) promoting a competitive market for networks and services; b) guaranteeing interconnection among networks and services on local, national and EU markets; c) guaranteeing communication among end users' terminal equipment (if compatible), of non discrimination and proportionality of obligations among operators and suppliers. <p><i>Law 249, art. 5 comma 1</i></p> <p>Dominant operators must provide non-discriminatory interconnection. They must apply similar conditions, in similar circumstances to interconnecting operators who provide similar services. They must provide interconnection equipment and information at the same quality level they grant to themselves, to their affiliates and to their commercial partners. Any changes to the network must be announced six months prior to their introduction. Interconnection agreements must be submitted to the NRA and be available to interested parties (excluding commercially sensitive information).</p> <p><i>DPR 318, art. 4</i></p>	<p>Interconnection shall be provided at non discriminatory, transparent, proportional and objective conditions. Conditions shall be similar to those operators provide to themselves or to their affiliates. Interconnection agreements shall be submitted to the NRA, which will make it available to other interested parties (excluding commercially sensitive information).</p> <p><i>Telecommunications Bill, art. 22</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Interconnection charges	<p>Must follow the principle of transparency and cost orientation. Different terms, tariffs and conditions must be justified on the basis of the type of interconnection provided and/or the relevant national licensing conditions. Interconnection charges are divided into 4 broad categories:</p> <ol style="list-style-type: none"> 1. charges to cover initial implementation of the physical interconnection; 2. rental charges to cover the on-going use of equipment and resources; 3. variable charges for ancillary and supplementary services; 4. traffic related charges. <p>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, number portability and ensuring compliance with essential requirements (i.e. non-economic reasons in the general interest which may cause a Member State to impose conditions on telecoms networks or services).</p> <p><i>Interconnection Directive of 1997, art.7 and Annex IV</i></p>	<p>Pricing conditions in interconnection agreements shall respect the principles of objectivity, transparency, and non-discrimination.</p> <p>They shall not lead to the undue levying of excessive charges on the operators using interconnection. They should be justifiable, if so requested by the Telecommunications Regulatory Authority.</p> <p>The tariffs for interconnection services provided by dominant operators, shall compensate the effective use of the main and junction network and shall reflect the corresponding costs.</p> <p>Interconnection tariffs shall be based on the following principles:</p> <ol style="list-style-type: none"> 1.– the costs taken into account shall be relevant, that is, linked through a form of direct or indirect causality to the interconnection service provided; 2.– the costs taken into account shall aim to increase long term economic efficiency, based on the assumption that the quality of service is maintained; 3.– tariffs shall include an equitable contribution, in conformance with the principle of proportionality, to the costs which are common both to interconnection services and to other services; 4.– tariffs shall include a normal rate of return on the capital invested; 5.– tariffs may be subject to time variants to take into account congestion in the operator's network transmission capacity and switching; 6.– the unit tariff charged for the general network components used for an interconnection service shall not be volume or capacity-related; 7.– tariff units shall correspond to the needs of interconnecting operators. <p>Costs specific to interconnection services shall be fully allocated to the interconnection services.</p> <p>The costs specific to the operator's services other than interconnection shall be excluded from the cost base for interconnection services. General network costs shall be apportioned between interconnection services and other services on the basis of the effective use of the general network by each of these services.</p>	<p>Interconnection charges are regulated by general rules on rates.</p> <p>Interconnection and access charges must be approved by the NRA.</p> <p>Rates can be determined with (1) the price cap method; (2) based on the costs for the efficient provision of a single service.</p> <p>Interconnection services cannot be included in the same basket with other services. They cannot be included in one or more baskets until January 1, 2000.</p> <p><i>Telecommunications Act of 1996, §27 and Ordinance concerning price regulation, §7</i></p>	<p>Interconnection rates must be cost-based. In consideration of the development of competition, the NRA may establish, after consultation with operators and by January 10, 1999, a different method to determine charges, based on LRIC, including a normal return on capital.</p> <p><i>DPR 318, art. 4</i></p>	<p>Dominant operators of public telecommunications networks shall determine interconnection charges according to the principles of transparency and cost orientation.</p> <p>Costs shall be justified as related to real costs and unbundled, so that the requesting entity does not have to pay for more than what strictly related to the service required.</p> <p><i>Telecommunications Bill of 1997, art. 26</i></p>

		<p>From 1997, until the Telecommunications Regulatory Authority defines another method, interconnection tariffs for a given year shall be based on the forecast relevant average historic costs for the year in question. The average historic costs shall be calculated using forecast accounting data, information from the operator's most recent audited accounts and productivity improvement records.</p> <p>Historic costs will be evaluated by the Telecommunications Regulatory Authority taking into account:</p> <ul style="list-style-type: none"> • the efficiency of new investments made or forecast by the operator in view of industrially available state-of-the-art technology; • international benchmarks for interconnection tariffs and costs. <p>The average historic costs shall be calculated using forecast accounting data, information from the operator's most recent audited accounts and productivity improvement records.</p> <p>The Telecommunications Regulatory Authority may set a pluriannual price constraint aimed at reducing interconnection tariffs, as an incentive for economic efficiency in view of international benchmarks on tariffs and interconnection costs (price cap).</p> <p>After consulting the Interconnection Committee and having carried out a public consultation, the Telecommunications Regulatory Authority shall define a method taking more into account the long term efficiency of costs than the initial method.</p> <p>In order to take into account the effects of increasing competition in the interconnection market, the Telecommunications Regulatory Authority may establish a new method for determining interconnection tariffs based on principles and rules which may differ from those set out in the law, which will have to be amended.</p> <p><i>French decree on interconnection, Art. D 99-10, 99-12, 99-17, 99-18, 99-19, 99-20, 99-21, 99-22</i></p> <p>Interconnection charges are different for facilities-based network operators and service providers.</p>			
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Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Cost accounting systems	<p>Whatever cost accounting system is used, the organisation must show:</p> <ul style="list-style-type: none"> • the cost standard (e.g. LRIC or fully distributed) and cost bases used (e.g. historic or forward-looking); • the cost elements included in the interconnection tariff (the sharing of the cost of universal service must be unbundled and identified separately); • the degrees and methods of cost allocation, in particular the treatment of joint and common costs; • the accounting conventions used for the treatment of costs (including the timescale for depreciation of fixed assets and the treatment in terms of revenue versus capital cost of other major expenditure items). <p><i>Interconnection Directive of 1997, art. 7 and Annex V</i></p>	<p>The Telecommunications Regulatory Authority shall establish and publish the specifications and the description of the cost accounting systems of dominant operators. The cost accounting systems of these operators shall be audited periodically by an independent entity. The designated entity shall publish a statement of compliance annually.</p> <p><i>French decree on interconnection, Art. D 99-13</i></p>	<p>Costs based on the efficient provision of a service (which is one of two methods for rate determination) must be determined according to the LRIC, plus a share of common costs (including an adequate interest rate on the capital employed) necessary to produce that service. Operators must supply information concerning their costs, and methods and parameters on which costs are determined (e.g. description of services, conditions and quality, past and expected future revenues, quantities of service provided, demand elasticity, development of single costs, demand structure, effects of different rates on users groups). Indirect costs must be included and allocated according to EU rules. Common costs must be allocated according to the ONP Directive 90/387/CEE. Further, the following cost information must be provided: method of cost calculation; amount of personnel costs, depreciation, interests on capital, materials costs; past and expected level of capacity usage; quantities and prices of network elements for the provision of service.</p> <p><i>Ordinance concerning price regulation, §2 and §3</i></p>	<p>Dominant operators must adopt a sufficiently detailed accounting system by 30 days after the regulation comes into force (fall 1997). This system must provide at least the following elements:</p> <ol style="list-style-type: none"> 1. direct costs for installation, operation, maintenance and commercialisation of public networks and public telecommunications services; 2. common costs, allocated as follows: <ol style="list-style-type: none"> a. by direct analysis whenever possible b. by indirect links with other categories or groups of categories directly allocable; c. if a. and b. are impossible, a general allocation parameter shall be applied. <p>Other systems of cost calculation, e.g. LRIC may be applied. Cost accounting systems and related information must be available to the NRA.</p> <p><i>DPR 318, art. 8</i></p>	<p>The NRA shall establish criteria and conditions of the cost accounting system to be adopted by operators of public telecommunications networks in relation to interconnection charges.</p> <p><i>Telecommunications Bill of 1997, art. 27</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Accounting separation and financial reports	<p>Monopoly or quasi-monopoly entities in other service sectors entering the telecommunications sector must keep separate accounts.</p> <p>Organisations having significant market power are required to keep separate accounts for:</p> <ul style="list-style-type: none"> • interconnection-related activities, both internal and provided to others; • other activities. <p>Financial reports shall be audited by an independent organisation.</p> <p><i>Interconnection Directive of 1997, art.8</i></p>	<p>Dominant operators shall keep a separate accounting system for their interconnection activities.</p> <p>This separate accounting system shall allow in particular for the identification of the following costs :</p> <ul style="list-style-type: none"> – general network costs; – costs specific to interconnection services; – costs specific to the operator's services other than interconnection; - common costs. <p>An operator with an annual turnover exceeding a threshold set by the telecommunications minister and the minister for the economy shall be required to keep separate accounts for the authorised activity.</p> <p>Moreover, if the competition authority considers that an operator enjoys a monopoly or dominant position in a sector other than the telecommunications sector, and the infrastructure used for this activity may be separated, the operator shall be required to separate this activity from his telecommunications activities on a legal basis for the purposes of fair competition.</p> <p><i>French decree on interconnection, Art. D 99-12 and L.33-1</i></p>	<p>Companies having a dominant position in markets other than telecommunications markets shall carry on telecommunications services through one or more legally independent companies.</p> <p>Companies having a dominant position in a telecommunications market shall guarantee the transparency of financial relations among telecommunications services in the licensed sector and between such services and telecommunications services in the non-licensed sector by establishing a segregated accounting system. In this regard, the regulatory authority may prescribe the structure of internal accounting for particular telecommunications services subject to licence.</p> <p><i>German Telecommunications Act of 1996, §14</i></p>	<p>Operators with concessions and authorisations must keep separate accounts in order to show (1) access and interconnection accounts; (2) universal service costs; (3) separate accounts for network installation and operation and for service provision; (4) proof that there are no cross-subsidies and discriminatory practice.</p> <p>Local radio and television operators must adopt accounting separation, while national radio/TV operators must create structurally separate entities for the provision of telecommunications networks and services.</p> <p><i>Law 249/97 art. 1 comma 8 and art.4 comma 5</i></p> <p>Dominant entities that operate public telecommunications networks and provide public services or interconnection services or mobile services must keep separate accounts (as of fall 1997 or start of service supply) for activities related to interconnection, including services supplied internally and those provided to others.</p> <p>Separate accounts must be kept for network installation and operation and for service provision. Small operators are exempted. Monopoly providers in other sectors may also adopt structural separation for public telecommunications networks and services.</p> <p>Accounting separation applies to monopoly cable operators that also provide telecommunications services in the same area.</p> <p><i>DPR 318, art. 9</i></p>	<p>Dominant operators of public telecommunications networks and services shall provide the NRA with audited separate accounts for telecommunications activities and services.</p> <p>Accounts for public telephone services, interconnection (both internal and external), leased lines and other mandatory services must be separated.</p> <p>Operators having special or exclusive rights in other sectors, and provide telecommunications networks or services to the public, shall keep separate accounts for their telecommunications activities.</p> <p>Terms, conditions and exceptions for accounting separation shall be established by regulation.</p> <p><i>Telecommunications Bill of 1997, art. 34</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Facility sharing and co-location	<p>NRAs should encourage the sharing of facilities or property with entrants if the incumbent has the right to install facilities on, over or under public or private land. Facility sharing (including physical co-location) may be imposed only after public consultation. Agreements for co-location or facility sharing shall normally be a matter for commercial and technical agreement between the parties concerned. The NRA may intervene to resolve disputes. Member states may impose facility and/or property sharing arrangements only after an appropriate period of public consultation during which all interested parties must be given opportunity to express their views. Such arrangements may include rules for apportioning the costs of facility and/or property sharing.</p> <p><i>Interconnection Directive of 1997, art. 11</i></p>	<p>No specific prescription, the decree on interconnection only requires that the conditions governing co-location be included in the interconnection agreement.</p> <p>The standard interconnection offer of dominant operators shall include the technical and tariff conditions governing the physical and logical access to these operators' points of interconnection.</p> <p><i>French decree on interconnection, Art. D 99-9 and 99-16</i></p>	<p>Dominant operators must allow the use of technical interfaces for transmission, switching at the same conditions they apply to themselves. Physical co-location is required, unless it is objectively not justified. In this case, virtual co-location must be provided.</p> <p><i>Ordinance concerning Special Network Access of 1996, §3</i></p>	<p>The NRA and local authorities may promote facility sharing among operators of public telecommunications network and services where rights of way exist. If it is impossible to grant new rights of way, the NRA and local authorities may mandate access to existing infrastructures at fair conditions. Agreements for facility sharing and co-location shall be negotiated among the interested parties and the NRA may intervene to resolve controversies, on request of either one party.</p> <p>The NRA may determine rules related to facilities sharing and co-location, after consultation with the interested parties, including rules for apportioning the costs of facility and/or property sharing.</p> <p>Facility sharing is also included among the elements which should be included in an interconnection agreement.</p> <p><i>DPR 318, art. 13 and appendix D</i></p>	<p>No reference to facilities sharing or co-location in the Telecommunications Bill of 1997. Co-location is mandated (against compensation) by the Interconnection Order issued on March 18, 1997 (art. 2.5)</p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Equal access	<p>Member states shall ensure that an organisation allocated a range of numbers shall avoid undue discrimination in the number sequences used to give access to the services of other telecommunications operators.</p> <p><i>Interconnection Directive, art. 12</i></p> <p>Operators shall provide:</p> <ul style="list-style-type: none"> • possibility of user selection, on a call by call basis, of the chosen operator or service provider by January 1, 1998; • implementation of carrier pre-selection on a permanent or default basis by January 1, 2000. <p><i>Green Paper on Telecoms Numbering (IP/96/1054)</i></p>	<p>The <i>French decree on interconnection, Art. D 99-9</i> requires interconnection agreements to specify measures implemented to allow users equal access to the various networks and services, equivalent formats and number portability.</p>	<p>In their networks telecommunications carriers shall ensure that each user is free in his choice of long-distance carrier; such choice shall be enabled by means of permanent pre-selection which can be overridden by a carrier selection prefix each time a particular call is made. The regulatory authority may suspend this obligation wholly or partially insofar and for as long as this is justified for technical reasons.</p> <p><i>German Telecommunications Act of 1996, §43</i></p> <p>According to DT, pre-selection with call-by-call override will be in place by January 1998.</p>	<p>By January 1, 1998 the NRA shall promote fair, non discriminatory, transparent and objective conditions to allow carrier selection (easy access). By January 1, 2000 carrier pre-selection (equal access) must be provided.</p> <p><i>DPR 318, art. 11</i></p>	<p>Mechanisms for carrier selection shall be established in the national numbering plan by the government. Carrier selection shall be implemented according to the principle of equal access.</p> <p><i>Telecommunications Bill of 1997, art. 31</i></p> <p>Easy access shall be provided from October 1997 (60% of total lines) and be completed by February 1998. Pre-selection shall be supported by all digital switches by November 1998.</p> <p><i>Ministerial Order of 18 July 1997</i></p>

Table 1 continued

Issue	EU	France	Germany	Italy	Spain
Number portability	<p>NRAs should encourage the earliest possible introduction of number portability at least in all major centres of population by January 1, 2003. In order to ensure that charges are reasonable, NRAs shall promote reasonable pricing for interconnection related to the provision of number portability.</p> <p><i>Interconnection Directive of 1997, art 12</i></p>	<p>As of 1 January 1998 subscribers who change operator without changing their geographical location may retain their number, on condition that there is sufficient transfer capability at this date. Until 1 January 2001 the cost incurred by the initial operator for the transfer shall be paid by the new operator which may then bill the subscriber. No other fee of any kind may be billed to the subscriber by the initial operator. Operators shall include the necessary provisions in the interconnection agreements. These provisions do not apply to numbers allocated to mobile networks and used to provide mobile services.</p> <p>As of January 2001 users may, on request:</p> <ul style="list-style-type: none"> - retain their telephone number in the event of a change of operator without a change of geographical location. - obtain a number from their operator, which they may retain in the event of a change of operator or geographical location. <p><i>French Telecommunications Act of 1996, Art. L. 34-10</i></p>	<p>In their networks telecommunications carriers shall ensure that users may keep the numbers assigned to them when they change carrier but not location (carrier portability); they shall be charged solely the costs incurred once for customer change. The regulatory authority may suspend this obligation insofar and for as long as the absence of carrier portability does not significantly impair competition in individual markets and does not significantly affect consumer interests. It may also suspend this obligation insofar and for as long as this is justified for technical reasons.</p> <p><i>German Telecommunications Act of 1996, §43</i></p> <p>According to DT, local number portability and portability of service numbers will be in place by January 1998.</p>	<p>Number portability must be provided as soon as possible, so that end users can retain their number in a specific location, whoever their service provider may be. Number portability must be provided in the major cities by January 1, 2001.</p> <p><i>DPR 318, art. 11</i></p>	<p>Number portability shall be guaranteed by fixed telecommunications network operators by the terms, locations and conditions determined by regulation. Relevant costs shall be divided among affected operators or arbitrated by the NRA, in case of lack of agreement among operators.</p> <p>Other ways of retaining different types of numbers both for fixed and mobile networks shall be guaranteed in the terms, locations and conditions determined by regulation.</p> <p><i>Telecommunications Bill of 1997, art. 33</i></p>

Table 2: Entry, interconnection and access implementation

Issue	France	Germany	Italy	Spain
Telephone density (1995)	56.3	49.5	43.4	38.5
GDP per capita (1995 \$)	21,688	21,899	20,218	13,400
Population (1995, million)	58.1	81.6	57.2	39.2
Incumbent operator (1996 data):	France Télécom	Deutsche Telekom	Telecom Italia	Telefónica de Espana
Main lines	33 million	44.1 million	25 million	15.1 million (1995)
Employees	165,200	201,000	89,300	70,875 (1995)
Lines per employee	200	219	280	213 (1995)
Turnover (1996) (exchange rate 4.8.97)	151.3b FFr (24.1b \$)	63.1 b DM (33.85b \$)	29,300 b Lire (16b \$)	14 b \$ (1995)
Turnover per employee (\$)	145,884	168,408	179,171	197,531
Privatised?	No	Yes (26%)	Yes (100%)	Yes (100%)
Strategic alliance	Global One	Global One	AT&T/Unisource	Concert

Table 2 continued

Issue	France	Germany	Italy	Spain
<p>Major new entrants (already licensed/ applying for licences)</p> <p>(as of December 1997)</p>	<p>Cegetel (CGE 44%, BT 26%, SBC 15%, Mannesmann 15%) has SNCF's network</p> <p>Bouygues Télécom (BDT (Bouygues 59.5%, JCDecaux 20.9%, Telecom Italia 19.6%) 55%, Veba 17.5%, C&W 20%, Banque Paribas 3%, BNP 3.5%) broke up negotiations with Lyonnaise des Eaux for the use of its network</p> <p>Siris (Worldpartners)</p>	<p>o.tel.o (Veba Telecom 40%, RWE 37.5%, 22.5% offered to Telecom Italia, Ntt, BellSouth, SBC, GTE.</p> <p>Mannesmann Arcor Deutsche Bahn 50.2%, Mannesmann Consortium 49.8% (Mannesman Eurokom 60%, AT&T 15%, Unisource 15%, Deutsche Bundesbank 10%).</p> <p>Viag InterKom (Viag 40%, BT 40%, Telenor 10%, 10% held for an additional partner).</p>	<p>Albacom (BNL + BT 45.5%, Mediaset 19.5%, ENI 35%)</p> <p>Infostrada (Olivetti 67%, Mannesmann 33%)</p> <p>Wind (51% Enel, 49% Deutsche Telekom and France Télécom)</p>	<p>Retevisión (Spanish government 30%, Telecom Italia 21.66 %, GET (Endesa) 21.66%, Unión Fenosa Inversiones 12.38%, Euskaltel, 4.3%, BBK 5 %, Kuixa 5%, Caja de Ahorros del Mediterráneo 3.57%, Unicaja 3.57%, Caja de Ahorros de Navarra 2.86%, Ibercaja 1.43%).</p> <p>There will be a second national licence (for infrastructure and voice telephony) in January 1998.</p>
<p>New fixed licences issued</p>	<ul style="list-style-type: none"> • 8 experimental licences for public telecommunications networks, including voice telephony (will expire after 5 years). • 4 licences for public telecommunications networks excluding fixed point-to-point telephone services. • Only one licence (Télécom Développement) is national, all others are local or regional <p>(as of July 29 1997, source: ART)</p>	<ul style="list-style-type: none"> • 37 class-3 licences (operation of transmission paths) <ul style="list-style-type: none"> ⇒ 5 nation-wide ⇒ 32 regional/local • 15 class-4 licences (voice telephony) <ul style="list-style-type: none"> ⇒ 7 nation-wide ⇒ 8 regional/local • 45 applications for class-3 and 11 for class-4 licences <p>(as of 8 August 1997, source: Bundesministerium für Post und Telekommunikation)</p>	<ul style="list-style-type: none"> • no fixed public telephone network or voice telephony services licences <p>(as of August 22, 1997, source Ministry of Posts and Telecommunications)</p>	<ul style="list-style-type: none"> • 1 fixed public telephone network licence (as of 7 August 1997, source CMT)

Table 2 continued

Issue	France	Germany	Italy	Spain
New national fixed licensees (as of August 1997)	Télécom Développement	<i>Class-3:</i> Bayernwerk Netkom GmbH DBKom RWE Telliance AG Teleglobe GmbH Vebacom GmbH <i>Class-4:</i> ACC Telekommunikation GmbH DBKom Tele Danmark Internet GmbH Teleglobe GmbH Vebacom GmbH VIAG Interkom GmbH&Co. WorldCom	None	Retevisión

Table 2 continued

Issue	France	Germany	Italy	Spain
<p>New local fixed licensees</p> <p>(as of August 1997)</p>	<p>A.D.P. Société d'exploitation du téléport de Marseille-Provence S.A. Compagnie Générale de Radiocommunication de Proximité AUXIPAR S.A. KAPT AQUITAINE S.A. Belgacom Téléport S.A. CEGETEL Entreprises SEM Protel France Manche S.A. COLT Télécommunications France S.A.S. MFS Communications S.A.</p>	<p><i>Class-3:</i> Altwater Airdata Systems BTV Breitband-Television CityCom Wuppertal Multimedia Citykom Muenster COLT Telecom Communicationsnetze Sued-West DOKOM EggeNet Esprit Telecom EWE TEL Gelsen-Net Hamcom Telekommunikation HanseNet HEAG MediaNet Hermes Europe Railtel HTN ISIS Multimedia Net M'net Telekommunikations MFS Communications NEFkom Telekommunikation NetCologne Unisource Carrier service VEW TELNET WOBCOM Wohnstaettengesellschaft Dortmund-Sued Wuerzburger Telekommunikationsgesellschaft</p> <p><i>Class-4:</i> CITYCOM Wuppertal Citykom Muenster COLT Telecom Esprit Telecom EWE TEL ISIS Multimedia Net NetCologne VEW TELNET</p>	<p>None</p>	<p>Concession of cable licences is underway. Licences are being granted at regional (1-3 licences per region or <i>Comunidad Autonoma</i>) and local (municipalities) levels. As of August 1997 there is no exact data on numbers of licences granted. Under these licences, operators will be able to provide cable TV and telecommunications services. Authorisations for voice telephony starting from 1 January 1998 are included. (source: CMT)</p>

Table 2 continued

Issue	France	Germany	Italy	Spain
Standard interconnection price list published?	FT published its interconnection catalogue on April 9, 1997 and it was approved by the ART	No standard interconnection offer, but the Ministry set an average interconnection rate based on interconnect prices used in 10 industrial countries. DT challenged this decision in court.	Telecom Italia published its offer on July 1, 1997. A Ministry provision on the contents of an interconnection agreement has been under public consultation since the end of July	The Ministry of Development issued an Order (dated March 18, 1997) setting rates and conditions for interconnection to the public telephone network (including cable operators wishing to connect to the PSTN). The Order was challenged by Telefónica, which will have until June 1998 to publish its standard interconnection offer and price list.
Interconnection agreements (as of December 1997)	3 MFS-Worldcom COLT Telecom Siris	6 TeleDanmark MFS-Worldcom Viag InterKom COLT Telecom Isis Multimedia Net Esprit Telecom >20 in negotiation estimated	several parties have started first contacts in view of negotiation	1 in phase of negotiation Retevisión
Arbitrated	0	2	0	0
Rejected by NRA	0	2	0	0
Approved by NRA	0	0	0	0

Table 3: Universal service regulation

Issue	EU	France	Germany	Italy	Spain
Definition of universal service	<p>Universal Service is defined in the <i>Interconnection Directive</i> as: "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".</p> <p>That defined service equates to "the provision of voice telephony service via a fixed connection which will also allow a fax and a modem to operate, as well as the provision of operator assistance, emergency and directory inquiry services (including the provision of subscriber directories) and the provision of public pay phones."</p> <p>According to Directive 95/62/EC (the "Voice Telephony Directive"), users should also have access to published information about the cost and prices of services, about their quality and whether targets for quality are being met. Affordability is a matter to be determined at a national level.</p> <p><i>Communication on "Universal service for telecommunications in the perspective of a fully liberalised environment" (March 12, 1996)</i></p> <p>Universal service is a dynamic and evolving concept and will be kept under regular review, particularly, with regard to its scope, level, quality and affordability within the European Union.</p> <p><i>Commission Communication on Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in telecommunications and Guidelines for the Member States on Operation of such Schemes, 27.11.1996</i></p>	<p>The public telecommunications service shall be provided in accordance with the principles of equality, continuity and adaptability. It shall comprise:</p> <ol style="list-style-type: none"> the universal telecommunications services the mandatory telecommunications services telecommunications activities undertaken in the public interest, particularly in the interests of national defence and public security, public research and higher education. <p>The universal telecommunications service means the provision to the public of a quality telephone service at an affordable price. It includes:</p> <ul style="list-style-type: none"> the conveyance of telephone calls to and from subscriber points, the provision of an information service and a telephone directory in both printed and electronic form, the provision throughout the territory of public pay phones installed on the public domain the conveyance of emergency calls free of charge. <p>At least once every four years from the date of commencement of this law, a report on this chapter shall be submitted by the Government to Parliament. This report shall propose, where appropriate, the inclusion of new services in the scope of the universal service and the review of the list of mandatory services, in order to take into account developments in telecommunications technology and services.</p> <p><i>French Telecommunications Act of 1996, Art. L.35, L.35-1 and L.35-7</i></p>	<p>Universal services are a minimum set of telecommunications services for the public in respect of which a particular quality has been defined and to which every user shall have access, irrespective of place of residence or place of work, at an affordable price. Designated as universal services shall be telecommunications services which can be assigned to the sectors of voice telephony and the operation of licensed transmission lines and whose provision for the public as basic services has become indispensable. Also designated as universal services may be those telecommunications services which are directly connected with telecommunications services defined above and whose provision for the public as basic services has become indispensable.</p> <p>The Federal Government can designate certain telecommunications services as universal services. Such designation shall be adapted to technical and social developments in line with requirements.</p> <p><i>German Telecommunications Act of 1996, §17</i></p> <p>Universal service includes:</p> <ul style="list-style-type: none"> voice telephony service with ISDN features on the basis of a digitally switched network and subscriber lines with a bandwidth of 3.1 KHz; information services; publication of directories; public pay phones provision of transmission lines according to the EC Directive on ONP <p><i>Universal Service Ordinance, §1</i></p>	<p>Universal service includes:</p> <ul style="list-style-type: none"> voice telephony (including access to national and international calls; fax communications; low-speed data transmission; free emergency services; operator services) telephone directory limited to the relevant local area directory information service public pay phones provision of special services to disabled persons or persons with social needs lines and services concerning national public interests, i.e. public security, public emergency, national defence, justice, education, and government must be provided but shall be financed by the requesting party. <p>The NRA may propose a review of the universal service definition to the Post and Telecommunications Minister, on the basis of technological and market developments.</p> <p><i>DPR 318, art. 3 comma 1</i></p>	<p>Universal service is a defined set of telecommunications services with a specific quality level, available to all users at an affordable price independent of their geographical location. Services included are:</p> <ul style="list-style-type: none"> access to the public fixed telephone network and to national and international voice, fax and data transmission; telephone directory free for users; public pay phones; access to fixed telephone service for disabled persons or persons with social needs. <p>The government can review and enlarge the universal services according to technological evolution, market demand or reasons of social or territorial policy. Quality levels and pricing criteria may also be revised.</p> <p><i>Telecommunications Bill of 1997, art. 37</i></p>

Table 3 continued

Issue	EU	France	Germany	Italy	Spain
Entities obliged to provide universal service	<p>There may be more than one organisation in a Member State with USOs, such as public telecommunications network operators and publicly available voice telephony service providers, only in accordance with the principles of non-discrimination and proportionality (i.e. in proportion to their usage of PSTN).</p> <p><i>Interconnection Directive, art. 5 (1)</i></p>	<p>An operator may be given the responsibility of providing the universal service if it agrees to provide the service to the whole of the country and is capable of doing so. France Télécom shall be the public operator responsible for the universal service. The conveyance of emergency calls free of charge shall be compulsory for all public telephone service providers.</p> <p><i>French Telecommunications Act of 1996, Art. L.35-2</i></p>	<p>Where a universal service is not being appropriately and adequately provided or where there is reason to believe that such provision will not be ensured, each licensee operating in the relevant product market for the applicable telecommunications service subject to licence and achieving a share of at least four percent of the total sales of this market or having a dominant position in the relevant geographical market shall undertake to contribute to providing the universal service.</p> <p>The regulatory authority may oblige any licensee having a dominant position to provide such universal service.</p> <p>Where in the relevant market for the applicable telecommunications service subject to licence several licensees jointly have a dominant position, the regulatory authority may decide whether and to what extent it will oblige one or more of these licensees to provide the universal service.</p> <p>Where a provider who is to be obliged to provide universal service, furnishes prima facie evidence that, in the case of such obligation, he will be able to claim compensation, the regulatory authority may, in place of the decision to oblige one or more companies, solicit bids for the universal service, awarding it to the bidder proving himself sufficiently qualified to provide the universal service and requiring the least financial compensation therefore.</p> <p><i>German Telecommunications Act of 1996, §18 and 19</i></p>	<p>Telecom Italia is the universal service provider in Italy. After January 1, 1998 other operators may provide the service on parts of the territory on affordable and non-discriminatory economic terms. The provision of universal service at the national or local level requires an individual licence or a general authorisation.</p> <p><i>DPR 318, art. 3 comma 4 e 5</i></p>	<p>Any dominant operator in a certain area may be designed as universal service provider in that area. Conditions and procedures for assigning this task will be determined by regulation</p> <p><i>Telecommunications Bill of 1997, art. 38</i></p>

Table 3 continued

Issue	EU	France	Germany	Italy	Spain
Cost of universal service	<p>The cost of USOs shall be calculated as the difference between the net cost for an organisation of operating with the USOs and operating without the USOs. The calculation shall be based upon the costs attributable to:</p> <ul style="list-style-type: none"> elements of the identified services which can only be provided at a loss or provided under cost conditions falling outside normal commercial standards (e.g. emergency services, certain public pay phones, services or equipment provided to disabled persons, etc.); specific end users or groups of end users who, taking into account the cost of providing the specified network or service, the revenue generated and any geographical averaging of prices imposed by the Member State, can only be served at a loss or under certain cost conditions falling outside normal commercial standards. <p>When calculating net cost a quantification of the intangible benefits of being a universal service provider should be added on the benefit side.</p> <p>Costs and revenues should be forward-looking. National Schemes for calculating the cost of USOs may not include an “access deficit contribution” attributable to unbalanced national tariff structures. Such imbalances should be phased out by 1 January 2000.</p> <p><i>Interconnection Directive, Annex III and Commission Communication on Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in telecommunications and Guidelines for the Member States on Operation of such Schemes, 27.11.1996</i></p>	<p>The costs of USOs are:</p> <ul style="list-style-type: none"> the net cost of tariff imbalance resulting from the current structure of tariffs; the net cost of geographical averaging of rates; the net cost of the offer of special tariffs for certain subscriber categories in order to guarantee the accessibility of the service; the provision of public pay phones throughout the territory; the universal directory and the corresponding information service. <p>Free emergency calls are not compensated.</p> <p><i>Universal service decree, art. R.20-31</i></p> <p>For 1997, the total net cost for USOs has been set at FFr 5.8-6.1 bn.</p> <p>Costs calculated:</p> <ul style="list-style-type: none"> geographical averaging: 2.9 b FFr tariff imbalance: 2 b FFr social tariffs: 0.7 b FFr public pay phones: 0.2-0.5 b FFr directory and information service: no net cost 	<p>Costs shall be based on the long-term incremental costs of providing the universal service efficiently in the relevant geographical market, inclusive of adequate interest on the capital employed.</p> <p><i>German Telecommunications Act of 1996, §20</i></p>	<p>The net cost is determined on the basis of revenues and forward-looking LRIC, including a reasonable rate of return on capital employed for the provision of service to non profitable customers. The cost of universal service shall not include:</p> <ul style="list-style-type: none"> the access deficit cost of detailed billing and other additional services; services not included in universal service (service for schools, hospitals, libraries); national public interest services. <p>For the calculation of the net cost of universal service, separate accounts shall be kept.</p> <p>The net cost calculation shall be audited by a competent entity, different from the operators and from the NRA. The latter approves the calculation and the audit and makes them available to the public.</p> <p><i>DPR 318 art. and Ddl 1138 art.3</i></p>	<p>The net cost of universal service will be determined periodically by the operator that provides it, according to the criteria established by the NRA, who will audit and approve the cost calculation. The latter will be available to operators who contribute to the financing of universal services.</p> <p><i>Telecommunications Bill of 1997, art. 39</i></p>

Table 3 continued

Issue	EU	France	Germany	Italy	Spain
Universal Service contribution mechanisms	<p>The NRAs determine whether a mechanism for sharing the net cost of USOs is justified. Net cost of USOs must be audited by the NRA or other competent body and the results of the audit including the cost calculations must be open to public inspection.</p> <p>Entities which must contribute to the net cost of USO are:</p> <ul style="list-style-type: none"> organisations providing publicly available voice telephony services organisations providing public telecommunications networks. <p>Contributions to the cost of universal service may be based on a mechanism specifically established for the purpose and administered by a body independent of the beneficiaries (i.e. a universal service fund) and/or may take the form of a supplementary charge added to the interconnection charge.</p> <p>Charges for interconnection that serve as a contribution to the net cost of USOs must be notified prior to their introduction to the NRA, who can reduce them if they are excessive.</p> <p><i>Interconnection Directive of 1997, art. 5</i></p> <p>NRAs can oblige mobile operators to contribute to financing USOs.</p> <p><i>Revised Voice Telephony Directive of 1997.</i></p> <p>Universal service net costs cannot be required from:</p> <ul style="list-style-type: none"> Internet access providers private networks offering corporate networking or closed user group services service providers offering data communications or value added data services service providers offering enhanced voice telephone services given that the concept of Universal Service is evolving, those who must contribute to its cost may change. <p><i>COM(96) 608 final.</i></p> <p>Where Member States decide to fund, directly or</p>	<p>The costs attributable to universal service obligations shall be financed by public network operators and public telephone service providers under the following conditions:</p> <p>1) The net costs of tariff averaging obligations, shall be financed by a charge levied in addition to and in the same way as the interconnection charge, by the operator responsible for the universal service.</p> <p>This additional charge shall constitute the remuneration for the universal provision of the network and telephone service. It shall be calculated in proportion to the telephone traffic volume of the operator requesting interconnection. The telecommunications regulatory authority shall propose the sum payable for interconnection to be set by the telecommunications minister. Mobile communications operators which have national coverage obligations arising out of their schedule of conditions shall be exempt from the share of the additional fee which relates to the disequilibrium of the current telephone tariff structure. In return, the operators concerned shall agree to contribute, as of 1 January 2001 to the coverage, by at least one mobile telephone service, of main roads and other major trunk roads and scarcely populated areas not covered by such a service</p> <p>2) A universal telecommunications service fund shall be created. The accounts and finances of the fund shall be administered by the <i>Caisse des dépôts et consignations</i> in a specifically designated account.</p> <p>The fund shall be used to finance the net costs of the following universal service obligations: the offer of special tariffs for certain subscriber categories in order to guarantee the accessibility of the service; the provision of public pay phones throughout the territory; the universal directory</p>	<p>Where a company is obliged to provide universal service and where it has furnished prima facie evidence of its claim for compensation, the regulatory authority shall grant compensation for the provision of such universal service if the company evidences that the long-term additional costs of providing the universal service efficiently in the relevant geographical market, inclusive of adequate interest on the capital employed, exceed the income therefrom.</p> <p>The amount of compensation shall be computed in accordance with the actual long-term additional costs of providing the service efficiently, in compliance with the universal service obligation, inclusive of adequate interest on the capital employed, less the income earned from such universal service.</p> <p>In the event of bids being solicited, the regulatory authority shall grant compensation in accordance with the result of the bids solicitation.</p> <p>Where the regulatory authority grants</p>	<p>The net cost of universal service (if it is unfair) shall be shared with other public network operators, public voice telephony service providers and mobile and personal communications service providers. The cost shall not be shared if universal service provision does not cause a net cost, if that net cost is not unfair, and if the related administrative costs are not justified by the net cost.</p> <p>The NRA shall control that the cost sharing mechanism is justified.</p> <p>A universal service fund shall be created. The NRA shall determine procedures for its management.</p> <p><i>DPR 318, art. 3</i></p> <p>The fund shall include a share of new concession fees, a share of authorisation fees (no exemption for any category of operators) and a share of interconnection charges paid by operators above a certain turnover determined by the NRA. Concession and authorisation fees are determined by the NRA in proportion to gross revenues.</p> <p><i>Ddl 1138, art. 4</i></p>	<p>The net cost of USOs shall be divided among all operators of public telecommunications networks and among public telephone service providers. The NRA will determine the burden for each operator according to transparency, non discrimination and proportionality.</p> <p>Operators who provide special conditions to disabled persons according to the terms of law, may subtract the net cost from their portion of universal service financing.</p> <p>The NRA may temporarily exempt some operators from USO contributions in order to promote new technologies or the development of effective competition.</p> <p>The contributions will be deposited in a national fund for universal service, that will be managed by the NRA.</p> <p>If the net cost of universal service is too low to justify the costs of administrating the fund, the NRA may suppress it and establish mechanisms of direct compensation among</p>

	<p>indirectly through the State budget, part or all of the net cost of universal service in the telecommunications sector, such interventions must be made in a manner which is consistent with the EC Treaty's rules on State Aids</p> <p><i>Commission Communication on Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in telecommunications and Guidelines for the Member States on Operation of such Schemes, 27.11.1996</i></p>	<p>and the corresponding information service. The share of the net costs payable by each operator shall be calculated in proportion to its traffic volume.</p> <p>If an operator agrees to offer special tariffs to certain subscriber categories in order to guarantee them access to the telephone service under the conditions set out in its schedule of conditions, the net cost of this offering shall be deducted from its contribution.</p> <p>The net contribution that operators pay or receive shall be decided by the telecommunications minister on the advice of the telecommunications regulatory authority. These contributions shall be collected by the <i>Caisse des dépôts et consignations</i> according to the office's debt recovery procedure.</p> <p><i>French Telecommunications Act of 1996, Art. L.35-3</i></p> <p>The NRA has set the 1997 levy to be charged on interconnection rates for USOs at 1.7 centimes a minute.</p>	<p>compensation, each licensee operating in the relevant product market for the applicable telecommunications service subject to licence and achieving a share of at least four percent of the total sales of this market shall contribute to such compensation by means of a universal service levy.</p> <p><i>German Telecommunications Act of 1996, §20 and 21</i></p>		<p>operators.</p> <p><i>Telecommunications Bill of 1997, art.39</i></p>
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Table 4: National Regulatory Authorities powers

	France	Germany	Italy	Spain
National Regulatory Authority	Autorité de Régulation des Télécommunications (ART)	Regulierungsbehörde für Telekommunikation & Post (¹)	Autorità per le Garanzie nelle Comunicazioni (AGC)	Comisión del Mercado de Telecomunicaciones (CMT)
Responsible for Granting Licences	Ministry/ART(²)	RbTP	AGC	Ministry
Responsible for Frequency Allocation	National Agency of Radio Frequencies (³)	Ministry	Ministry's Division (DGPGF)	Ministry
Responsible for Numbering Plan	ART	RbTP	Ministry's Division (DGPGF)	Ministry
Appeal to NRA against TO's decision	Yes	No	No	Yes

Source: NERA (1997)

Notes

(1)The NRA will be established within the portfolio of the Federal Ministry of Economics by January 1, 1998.

(2)The Minister is responsible for granting individual licences and the NRA for class licences.

(3)From January 1, 1997, a National Agency for Radio Frequencies will be established. The Agency will be managed by a board of directors representing all the Ministries and authorities involved in the allocation of frequencies.