

Chapter 2 Telecommunications reform

Telecommunications reform was an important objective of the European Union in the 1980s and 1990s. Leon Brittan, member of the Commission in the early 1990s, saw it as an important part of the overall strategy to make Europe's industries more competitive. Europe was behind in the high technology field, while there was a potentially lucrative market: "Telecommunications could be worth six per cent of GDP by early next century, instead of the 1 to 2 per cent now" (Brittan, 1994:76). The promise of profits was not the only reason the EU embarked upon an ambitious reform scheme. The Keynesian, interventionist years were gone, and neo-liberalism and fear of "big government" making a mess of things which companies could do better on their own was, as discussed in the introduction¹, an important deeper and bigger current on which reform thrived.

To what extent have these reforms been successful? The goal of this chapter is to measure the effectiveness of the European Union liberalisation package for telecommunications in the five member states in the sample of this investigation. Part one describes the national telecommunications policies that existed in the member states before the EU took the initiative, and goes on to describe the legal package for telecommunications the European Union developed. The description focuses on two directives, the first a general directive on the industry-wide liberalisation of telecommunications (services, networks and equipment manufacturing) the second a more specific directive applying the general rules on voice telephony. There are other directives in the field of telecommunications arranging specifics, but the two selected in this chapter contain the flesh and blood of liberalisation. Part two makes the four broad variables derived from planned or predicted consequences of liberalisation in

¹ Discussed in more detail in the appendix.

general operational for the telecommunications sector. For each variable (*regulatory renewal, market renewal, efficiency and innovation, price development*) indicators specific to and for the most part exclusively relevant for telecommunications are measured. Part three summarises the findings. First an overview of the values of variables, broken down in the values of indicators is given. Then a compound overview, with a ranking of countries, is given for telecommunications as a whole.

PART 1: NATIONAL AND EUROPEAN POLICY INITIATIVES

Early national initiatives

Until the mid-1980s the public utility model (production of telecommunications services by public corporations and regulation and policymaking by ministries of telecommunications) was the dominant mode of organisation of the industry. In economic terms: market failure created by the natural monopoly in telephone services had been resolved by government production (see: Appendix). However, within that general model there were differences between countries (summarised in table 2-1) and early attempts of reform. This situation, that precedes the involvement of the EU, will be outlined per member state first.

Denmark followed a strategy of consolidation. The existing four regional providers merged with the national long-distance provider into *TeleDanmark A/S* to capture economies of scale and increase competitiveness on regional and world markets (Noam and Kramer, 1994:276). The resulting company kept a monopoly on fixed telecommunications (Wellenius and Stern, 1994:607).

France's telecommunications sector was, at least from an institutional point of view, among the more traditional telecommunication sectors in the EU. The *PTT*, the office responsible for delivering postal, telephone and telegraph services was a full government department and its staff had full civil service status. The Public Switched Telephone Network (PSTN), the main network for delivering local and national voice telephony, was state-owned, operated and controlled (Thatcher, 1996:188). The main reasons for monopoly operation were to “preserve a basic framework for the French national infrastructure and to ensure optimal efficiency at both the economic

and technical levels, while guaranteeing a concern for public service and the fundamental interests of the state” (Huret, 1994:297).

Reform was in the air, however. Technical change, liberal ideology and international market opening (Huret, 1994:293-4) led the minister of Posts and Telecommunications, Paul Quilès, to start *Le Débat Public*, a public debate involving all stakeholders (consumers, civil servants, businesses) on the future of telephony in France. Trade unions in particular were very critical, and willing to go on strike² because deregulation would imply the loss of civil service status of *PTT* employees. In spite of the enduring criticism of trade unions, Chamoux thinks that the debate has “helped to raise the consciousness of *PTT* employees on the necessity to change their long-term views” (1993:40). In 1990 *France Télécom*³ was established and took over the management and operation of the telephony services from the responsible government department. Without *Le Débat Public* the establishment of this competitive public service (*service public entrepreneurial*) would not have been possible (Huret, 1994:297-301).

Germany’s telecommunications sector also operated firmly in the realm of the state. *Deutsches Bundespost*, the German *PTT*, was a federal administration (Thatcher, 1996:192-3), so the ultimate responsibility for the operation of telecommunications lay with the ministry. The integrated post and telecommunications organisation was becoming increasingly inefficient however, but the main departments, post and telecommunication, had their own, at times conflicting, interests. Technical developments also led to thinking about new structures for telecommunications (Neumann and Schnöring, 1994:317), in spite of opposition from trade unions and the Socialist party (SPD) (Thatcher, 1996:193).

In 1985 a government commission on telecommunications started to analyse the situation, resulting in initiatives and parliamentary action to come to reform (Neumann and Schnöring, 1994:318). In 1989, after long deliberations, and in part complicated by the extra problems the re-unification were thought to bring (Neumann and Schnöring, 1994:317) *Deutsches Bundespost* was separated in three companies, one of them *Deutsche Telekom*, with limited autonomy. At that time the *PTT* minister, Christian Schwartz-Schilling, discarded the possibility that *Deutsche Telekom*

² “La déréglementation des telecommunications: Un débat, à défaut d'une loi”, *Le Monde*, 17-09-1987

would be privatised⁴ or would lose its monopoly over voice telephony (Thatcher, 1996:193).

In *Spain*, around the time when the directives were being drafted, González's socialists were in power. Journalist John Hooper observes that: "under the Socialists, although shares in public enterprises have been sold off, the government has almost invariably retained effective control" (Hooper, 1995:61). This also held true for the state telecommunications operator *Telefonica* (Noam and Kramer, 1994:274). A minority share of 35 per cent kept the government in financial control. *Telefónica* remained a monopolist and any reform beyond privatisation was not on the political agenda in the 1980s or in the early 1990s (Wellenius and Stern, 1994:657).

Spain's main strategy was not market reform, but active public sector reform, in which more efficient privatised companies, but under control of the government, were to bolster Spain's economic performance. This structural reform fit the generally held opinion in Spain that weak economic performance at that time should be attributed to the problematic structural state of the economy and its institutions (Boix, 1997:261).

The *UK* was very much ahead in telecommunications reform⁵. Before the Conservatives took power under Margaret Thatcher there had already been agreement between Labour and Conservatives that the activities of the *Post Office* could be commercialised. As a consequence the *Post Office* had been separated from the civil service. In 1981, with the establishment of *British Telecommunications plc (BT)*, the activities of the former Telecommunications Division of the *Post Office* also became a separate company (Laidlaw, 1994:285-6).

Further changes followed. In 1982, the British government allowed *Mercury* to compete with *BT* and a duopoly was established. In 1984 *British Telecommunications plc* was privatised through a sale of 51 per cent of the shares. An independent regulatory

³ Loi no. 90-568, 2 July 2 1990 relative à l'organisation du service public de la poste et des telecommunication.

⁴ "RFA : trois sociétés mais pas de privatisation", *Le Monde*, 26-10-1989.

⁵ This creates a difficulty of a curious nature. Although the British government carried out a market liberalisation that was similar to the thrust of EU policy it was at the early stages not in fact a direct result of EU action. As Beesley and Laidlaw say: "this [EC telecommunications policy] drew from rather than influenced the British experience (Beesley and Laidlaw, 1993:80). However, the final EC telecommunications package was not identical to British policy, and the British government had to conform to European directives of course. Since this research focuses on impact rather than on motivation, the performance of the British regulation structure can be measured and compared *as if* its actions are a result of EU policy.

office, the *Office of Telecommunications* (OFTEL), was established. The government had also separated policymaking (which remained a government function) and regulation (Thatcher, 1996:186-7). So, the *Post Office* years, in which the government guided the day-to-day operation of the telecommunications market, were over.

The nature of early reform

Governments were faced with a common set of problems. Their public post and telecommunications organisations were overstuffed and were trying to accomplish a “wide range of non-profit, political objectives” (Denkhaus and Schneider, 1997:72). Their responses differed however (Lane, 1997:1). Co-ordinated efforts were not undertaken, until the European union stepped in.

Table 2-1: Telecommunications in the late 1980s.

	Main telephone operator	Status	Control of PSTN	Main reform
Denmark	Tele Danmark A/S	Majority state share	Monopoly	Consolidation of regional operators and national long-distance operator in one monopolist
France	Direction Générale des Télécommunications	Government department of the Ministry of Posts and Telecommunications	Monopoly	Establishment of France Télécom as competitive public enterprise
Germany	Deutsche Telekom	State-owned	Monopoly	Separation of post and telecommunications activities
Spain	Telefónica	35% state-owned	Monopoly	Privatisation of telephone company
UK	British Telecom Mercury	Privately owned Privately owned	Duopoly	Introduction of competitive market and independent regulation

Source (in addition to those in accompanying text): OECD⁶.

The independent national initiatives fall into three categories. First there is the more limited public sector reform undertaken by France, Germany and Spain. Here the privatisation (Spain) or organisational rationalisation (France, Germany) of the telecommunications operator serves the improvement of a service that is still essentially

seen as a public service. It is hoped that the confrontation with market conditions will change the monopolist into a more efficient and responsive company, albeit a company very much in the public sphere. The continuation of restricted access to the PSTN network is a clear indication of the fact that telephony is still regarded as a public good, and not as “just” a service to be provided for by the free market.

Second, there is the United Kingdom, where the agenda soon became dominated by market reform. When the UK started debating the commercialisation of telecommunications that would ultimately lead to the institutional separation of post and telecommunications under Harold Wilson’s Labour administration in 1968 (Laidlaw, 1994:285), it was still by and large a public administration improvement scheme aimed at improving service. But this process, started under a Labour government, was given a deeper (or a different) meaning and more far-reaching goals under Margaret Thatcher (cf. Laidlaw, 1994:286). With the Conservative government in 1979 came the influence of Chicago School economists, such as Milton Friedman, and the focus shifted to deregulation and deep market reform (Lane, 1997:3).

Third, there are policies that fit none of the categories above, like the consolidation move undertaken by Denmark. This seems an odd move compared to the other member states in this research, but similar plans were developed (but not executed because of political opposition) in Italy and Portugal (Noam and Kramer, 1994:277). Dissatisfaction with the performance of local and regional telecommunication companies had been a driving force for consolidation and nationalisation in many other countries earlier in the century (Steinfeld, 1994:5) and Denmark’s move can be interpreted as a late industrial modernisation triggered by changes in technical and international circumstances.

The European initiative

The EC’s first attempt to change the iron hold of the *PTTs* over everything related to telephony occurred in the 1970s when the European Commission tried to lift the strict rules for telecommunications equipment. Most *PTTs* produced and distributed their own equipment and the Commission sought to bring the *PTTs* under a more liberal general public procurement scheme. This could have benefited electronics

⁶ OECD (1995), *Communications Outlook*.

producers had the attempt not failed because of opposition from the member states (Bauer and Steinfield, 1994:53) who protected their utilities. After all, the production and distribution of equipment was an important source of income. Mark Thatcher (1996:181-2) describes how “powerful transnational forces” transformed the field of high technology. Technological and economic change, international regulatory reform and new ideas on markets and competition led to, amongst others, the wish to improve (or introduce where necessary) competition in electronic equipment production, of which telecommunications terminal equipment is a part. But although this limited attempt at reform was started in the 1970s, the terminal equipment market had to wait long to blossom. Until the adoption of the Terminal Equipment Directive in 1988 there existed no common market for it (Alexiadis, 1995:229).

That reform of the procurement rules for telecommunications equipment faced opposition is not necessarily an expression of clear and coherent ideas on the preferred political economy of telecommunications. It is more likely that telephony was not high on anyone’s agenda. This changed with the realisation that telephony when linked to computer technology could play a vital economic role if the European electronics industry were less fragmented and more competitive and responsive, an idea brought about by the report of Simon Nora and Alain Minc to the President of France amongst others (Nora and Minc, 1980). Deregulation in the electronics and communication industries outside Europe (Japan and the U.S.) also changed the climate and the thinking about telecommunications in Europe (Thatcher, 1996:182), and in 1983 the European Commission created the Task Force on Information Technology and Telecommunications to develop new policies (Ungerer and Costello, 1988:130).

Rather than isolate itself on this topic, the Commission created a policy network with links to the member states. A Senior Officials Group on Telecommunications (SOG-T) with members from the national telecommunications operators was established to give advice to the Commission on all telecommunications matters, and the Senior Officials Group on Information Technology and Standards (SOGITIS) and other senior officials groups and committees became involved in advising on telecommunications policy matters (Bauer and Steinfield, 1994:54). A Council Recommendation⁷ asking the member states to ensure a common harmonised approach in the introduction of services to be introduced from 1985 onwards is the first formal legisla-

tive instrument to come out of this process. This was followed, in 1987, by a Green Paper⁸.

The Green Paper

The Green Paper introduced a number of common goals for the member states. These were: a common market for terminal equipment, a common market for value added services and progressive liberalisation of data services. Ending exclusive rights in public network infrastructures and public voice telephony were not yet on the agenda. Further topics were the separation of regulation and operation, the development of European standards and mutual recognition of type approvals, the mutual recognition of service licensing, and the definition of Open Network provision (ONP) to give new entrants fair access.

The Green paper received unanimous support from the EC Council of Ministers on 30 June 1988 (Ungerer, 1994:274). The step from Green Paper to legislation however was taken less smoothly because of a difference of opinion between the Commission and the Council of Ministers. Whereas the Commission strongly favoured open markets, the Ministers, led by France⁹ and the southern member states, wanted to protect the public service goals of telecommunication. This led to a compromise in which member states were allowed to impose public service obligations if these were in the general economic interest¹⁰ (Bauer and Steinfield, 1994:58). This hurdle taken, directives implementing the principles of the Green Paper could be accepted.

The legal framework

The legal EU framework for the liberalisation and regulation of the telecommunications sector is a series of EU directives that are commonly referred to as the Open

⁷ 84/549/EEC.

⁸ European Commission (1987), *Towards a Dynamic European Economy - Green Paper on the development of the common market for telecommunications services and equipment* (COM(87)290).

⁹ The elections in the spring of 1988 in which the conservative government, generally in favour of market reform, lost its majority accounts for this change of opinion. While the former minister, Gérard Longuet, thought that competition would have a positive effect on *France Télécom*, the new minister, Paul Quilès, regarded telecommunications as a core public function to be executed by a central and monopolistic *PTT* (Chamoux, 1993:29).

¹⁰ Public service obligations can in two ways be in the general interest. First by making the network larger, thereby lowering the cost for all participants, and second by offering people the benefit of access, which can lead to social or economic advantages. The first argument is a powerful network economics argument to embrace public service obligations without the need to refer to external social or moral justifications (see Appendix).

Network Provision, or ONP. The two directives that liberalise voice telephony are directive 90/387/EEC (the “ONP directive”) and directive 95/62/EC (“on the application of open network provision to voice telephony”)¹¹.

The core problem the ONP framework had to solve was that of the fixed telephone infrastructure and its consequences for market structure. The spontaneous emergence of competition is very difficult or even impossible in areas of economic activity where services are provided by infrastructures. Without regulation of access, for instance, new entrants would be forced to create their own (parallel) infrastructures because the holder of existing infrastructure would not have any incentive to allow others access to its infrastructure to connect callers. Yet, duplicating infrastructures would lead to gross inefficiency and higher prices for consumers. To avoid these parallel and inefficient infrastructures European law lets existing and new telephone operators compete on an existing public infrastructure¹² accessible for all interested parties.

This would benefit the consumer in two ways. In a market with more operators where the network is not broken up or duplicated it should in theory be possible for competition to drive down prices. Another benefit of competition would be that innovation would be sped up: in the battle for consumers operators would want to improve service by adding functions and gadgets to their networks. This would increase their attractiveness to customers.

Directive 90/387/EEC and 95/62/EC

Directive 90/387/EEC sets the stage for the liberalisation. The goal is “the provision of services using public telecommunications networks and/or public telecommunications services, within and between Member States (...) by companies, firms, or natural persons”¹³. The latter part of this sentence from the directive indicates that it is the intention that a variety of parties will offer telecommunications services using the existing network of the government or privatised incumbent, and the directive also allows for cross-border telecommunications services (“between Member States”). In

¹¹ There are additional directives arranging less central issues or filling in details. These will not be considered here.

¹² Public infrastructure means “publicly accessible” rather than “publicly owned”. The ONP directives do not apply to private telephone networks that do not offer services to the public, e.g. company networks.

¹³ 90/387/EEC, Art 1-2.

Annex I the Commission sums up which services could become competitive over the next years: leased lines, data services, ISDN, voice telephony, telex, and mobile services¹⁴. In Annex II it is further stipulated that charges for network access must also comply with competition rules in the Treaty¹⁵.

The directive further implies that the market will be actively regulated. It states that Open Network Provision conditions must respect the principles of objectivity, transparency and non discrimination. By explicitly stating these (in other markets more or less normal) conditions and making them the central goal of the directive the Commission implicitly acknowledges that there is market failure in telecommunications and government regulation is needed to rectify this situation.

Directive 95/62/EC applies the general principles of the ONP framework to voice telephony¹⁶. It orders the member states to ensure that fixed voice telephony is offered to the public, it being an essential service. The directive does not explicitly forbid state-operated networks, it only forbids *exclusive* state operation in the form of a monopoly created by legal exclusion of other operators. All interested parties should, in the absence of their own means to reach customers¹⁷, get interconnection at their request¹⁸. Articles 10, 11, 12, and 13 define the obligations of parties offering telecommunication, respectively arranging special access, interconnection, tariffs

¹⁴ 90/387/EEC, Annex I.

¹⁵ The competition rules of the Treaty are: Art. 81 (ex 85) prohibiting cartels and restrictive practices, Art. 82 (ex 86) prohibiting abuse of a dominant position (particularly relevant for large, incumbent operators). Although not an explicit provision of the Treaty, merger control is also (mainly through the Merger Control Regulation) part of the EU competition rules.

¹⁶ Defined as: “the commercial provision for the public or direct transport of real time speech via the public switches or networks such that any user can use equipment connected to a network termination point to communicate with another user of equipment connected to another termination point” (90/387/EEC, Art. 2 para 7).

¹⁷ European law makes a distinction between “interconnection” and “special access” although there is no principal economic difference. In both cases one company wants to use someone else’s network to reach consumers to which he has no network connected. Interconnection is used in those cases where a network owner connects his network to another network to do so (symmetrical relation), special access (to infrastructures) is granted to parties who do not own infrastructure (asymmetric relation) but who offer some higher level service.

¹⁸ This raises a research validity related question: Does the absence of competition imply the failure of regulation? Theoretically a market existing of one state-owned monopolist could be indicative of a lack of commercial opportunity rather than failure of regulation. In spite of the implementation of a perfect regulatory framework potential competitors to the incumbent state operator could simply find that there is no attractive market. This is rather unlikely given the high earnings and profits in the telecommunications sector up to 2001, but care should be taken not to come to fast conclusions should the absence of competition be observed.

cost orientation and transparency¹⁹, and cost accounting systems, all under supervision of the National Regulatory Authority²⁰.

Reactions of the member states

Germany changed its position rather fast. The separation of post and telecommunications and the establishment of *Deutsche Telekom* in 1989 been accompanied with the ministerial promise that privatisation was not an issue. But this position changed: after debate in the *Bundestag* it was decided, in 1993, that *Deutsche Telekom* should become a company and that an independent regulatory body should be set up (Denkhaus and Schneider, 1997:93). Even the loss of civil service status of *Deutsche Telekom* employees and the prospect of a loss of 30,000 jobs was accepted by the trade unions²¹.

The main explanation for the “privatisation hurry” in which Germany seemed to be all of a sudden lies in reunification (Denkhaus and Schneider, 1997:91-2). Faced with the modernisation of the backward network in the East for which Deutsche Telekom would have to go deep in debt and faced with the obligation to subsidise the losses of the postal services, privatisation and opening of markets seemed an attractive option for Telekom’s management. Not only would the financial burden be less severe, business ventures in other European member states - which the directive intended to allow - would also benefit the company²². The EC measures were helping those who wished to undertake reform, hence, they received a favourable reception (Thatcher, 1996:193-4).

Denmark, which is no stranger to changing moods where Europe is concerned²³, followed a path from reluctant follower to forerunner. Reform beyond the consolidation of the regional companies into *Teledanmark* was not originally intended. The idea behind the consolidation was to strengthen the position of the national operator

¹⁹ In accordance with Annex II of the ONP directive, 90/387/EEC.

²⁰ The competition regime is worked out in greater detail in the Interconnection Directive (97/33/EC). The incumbent - the former monopolist - disappears from the ONP to be replaced by the party with significant market power, or SMP. Like the incumbent, the SMP must give access at cost oriented interconnection rates. A 25 per cent market share is one of the main indicators of SMP.

²¹ “En vue de sa privatisation Deutsche Telekom va supprimer 30 000 emplois d’ici à 1994”, *Le Monde*, 23-08-1993.

²² The European expansion of *Deutsche Telekom* was a sincere wish that was later effectuated, e.g.: “Un projet de gestion commune de leurs réseaux privés d’entreprise France Télécom et Deutsche Telekom intensifient leur collaboration”, *Le Monde* 09-11-1993.

²³ “Awkward squad. How the Danes have become the Nordic pivot”, *The Economist*, 21-01-1999.

against disruptive foreign entry rather than engender rivalry between competing companies. However, in 1989 the Danish government realised that the European Commission would not let the matter rest with the Green Paper and voluntary compliance by the member states but would use its right to pass directives. Reluctantly the Danish government accepted that EC legislation would have to be implemented, and it discarded plans it had drafted which were in violation of the EC principles. From there on the idea of market liberalisation caught on and in 1995, with a large majority in parliament, plans were accepted to fasten the pace of liberalisation and open markets 18 months ahead of the schedule set out in the EC telecommunications package (Henten and Wulff, 1996:669-71).

France did not react unequivocally enthusiastically to the European initiatives. Although some reform was in the air, it was the pressure of European integration rather than the spirit of cooperation that led to the implementation of structural adjustments, says Chamoux (1993:40) who further characterises the French policy as “inspired, in the long run, by a ‘middle of the road’ pragmatism: no privatisation, not much international competition on the operating side”. And, although this stance of “*ni-ni*”²⁴ was not undisputed in French political circles²⁵, the idea of public services prevailed. A decade later, François Loncle, a socialist member of the *Assemblée* captured the spirit of the nation, politicians and citizens alike, when he said “We must not abandon public service to economic liberalism: Britain’s railways and America’s airlines are not examples to follow”.²⁶

To understand *Spain’s* position it is important to realise how relatively recent its membership of the European Union was. Its entry in 1986 did not stir a national debate to speak of (Pérez-Díaz, 1998:45), most likely because it was seen as a natural step in the process of synchronisation and homogenisation of Spanish culture and institutions with those of Europe that Spain was going through (Pérez-Díaz, 1997:5). It was hoped that telecommunications could contribute to the country’s economic improvement (De Mendivil y de Aldama, 1995:609), and it was realised that the current legislative regime for telecommunications, whose core provisions dated back to 1885, 1907 and 1934, was outdated and unable to govern a modern telecommunica-

²⁴ Short for “ni privatisation, ni nationalization” (nor privatisation nor nationalisation).

²⁵ “Après les déclarations de M. Delors La règle du ‘ni-ni’ n’est pas éternelle” remarque M. Bérégovoy”, *Le Monde*, 26-01-1990.

²⁶ “They love it”, *The Economist*, 24-05-2001.

tions sector. So Spain supported reform, and accepted the telecommunications package, whose timing and content forced change of the existing legislation (De Mendivil y de Aldama, 1995:609) It did however ask for deferment of certain aspects which it felt difficult to implement because of the structural weakness of the sector²⁷.

Already in the 1980s the focus of *British* telecommunications policy was market liberalisation (Laidlaw, 1994:286) and change had come about without EC initiative (Thatcher, 1996:186), so over the general thrust of the EC and the UK packages there was little discord (Thatcher, 1996:187).

PART 2: ASSESSMENT OF THE EXTENT OF IMPLEMENTATION

Variables and indicators

To assess the extent of implementation the broad variables will be measured according to the indicators printed below, in table 2-2.

Table 2-2: Overview of variables measuring liberalisation in telecommunication.

Main variables	Indicators
Regulatory renewal	
The extent to which an effective competition framework is implemented	<ol style="list-style-type: none"> 1. <i>Implementation of core directives</i> 2. <i>Interconnection and special access regulation</i> 3. <i>Entry conditions</i> 4. <i>Pricing conditions</i> 5. <i>Foreign ownership restrictions</i> 6. <i>Access to PSTN</i>
Market renewal	
The extent to which the market becomes competitive	<ol style="list-style-type: none"> 7. <i>Privatisation of public utility corporation</i> 8. <i>Market renewal score</i>
Efficiency and innovation	
The extent to which the market is more efficient and innovative	<ol style="list-style-type: none"> 9. <i>Productivity</i> 10. <i>Innovation</i>
Price development	
The extent to which prices decline	<ol style="list-style-type: none"> 11. <i>Local call charges</i> 12. <i>National call charges</i>

²⁷ European Commission (1997). *Status Report on European Union Telecommunications Policy*.

The indicators for the variable *regulatory renewal* first establish the extent to which the member states have fulfilled their obligations under European law through the variable *implementation of core directives*. However, transposition or legal implementation is not the whole story. In the national implementing measures choices have to be made regarding the most appropriate specific measures to implement and reach the broad goals the directives give. In this investigation the focus is on looking how, and how well, markets are to be organised and regulated by the member states in view of the fact that the technical telecommunications infrastructure can be abused to block competition and new entrants. So, *interconnection and special access regulation* is an assessment of how well the barriers to free competition the physical infrastructure offers are lowered, *entry conditions* looks at the barriers governments themselves may still impose by licensing regimes, and *pricing conditions* looks at how well pricing is arranged. *Foreign ownership restrictions* is an assessment of how far member states have gone to prevent protection of former “national champions”. *Access to PSTN* seeks to establish how well every operator potentially interested in offering telecommunications services has physical access to the infrastructure that is needed to deliver those services.

Regulatory renewal does not only measure legal implementation or the fulfilment of European obligations, it also assesses the quality of the legal and regulatory framework from the viewpoint of reaching the goals of the EU telecommunications law.

Market renewal measures the extent to which actual changes in the structure of markets can be observed. Indicators are based on the assumption that real success would imply a less strong position of (former) state telecommunications companies and a lively market with ample competition. The first is measured in *privatisation of public utility corporation*, which assesses the extent to which the state telephone companies are still state run companies. The second is measured in a score that combines the number of new entrants and the size of market shares, the market renewal score.

Under the heading *efficiency and innovation* the effects of competition on the mode of operation of the sector will be assessed. *Productivity* measures the effect of investments on efficiency, and *innovation* how well networks are kept at pace with overall technological development.

In the end, liberalisations should affect what citizens actually pay for services. The variable *price development* has been specified in a number of specific *price developments* that can be expected to occur if the sector transformation is successful.

Limitations

Not all forms or sub-markets of telecommunications will be included in the research. For practical reasons, but also because not all forms of telecommunication are equally relevant to this research, both in the forms of telecommunication and in the relevant time frame the research will be limited.

Many forms of telecommunications exist, ranging from the simple house-to-house phone call to advanced data networks. Two basic distinctions can be made:

(1) Voice versus data. Voice or speech telephony refers to communication where two people are in direct contact and are able to react to each other immediately. That what is transferred over the network in any physical way (usually an electric current) is translated at the terminal equipment into an audible, intelligible sound identical or close to the sound that was put into the system at the originating point. In data communication the transferred signal usually does not represent a conversation, but output of and/or input for data operating terminal equipment, such as computers.

(2) Fixed versus mobile. In a fixed network the physical connection is made by cables or wires that connect the originating and terminating point directly; in a mobile network ether frequencies are used to transmit signals for at least a part of the connection.

Together this results in the following picture of telecommunications as they are offered to the public²⁸.

Table 2-3: Types of telecommunication.

	Fixed	Mobile
Voice	Traditional voice telephony or PSTN (Public Switched Telephone Network)	Cellular telephony or GSM (Global System for Mobile communications)
Data	Internet	Mobile voice and data communication through UMTS (Universal Mobile Telecommunications System), not yet operational

²⁸ There are many other specific forms of communication in each category, e.g. a large number of fixed data networks, satellite communications, and an increasing number of services emanating from merging traditional services like Internet telephony. The table does not intend to give a complete pic-

The assessment of regulatory performance will be limited to traditional voice telephony. Other telecommunications sectors will not be analysed because they are less relevant to the research goal. In the existing mobile telecommunications system, GSM, the role of government was and is less profound. A sizeable GSM market emerged first in the 1990s and it was largely driven by private or newly privatised companies. There has not been the kind of state influence - state-owned operators, exclusive rights - normal in voice telephony, so there is no large coherent program of liberalisation for GSM²⁹. Also, GSM networks, depending less on fixed connections, are less prone to market failure. UMTS, the new mobile telecommunications standard, has yet to become operational on a large scale³⁰. Government intervention in, and policy for the Internet has only become a matter of consideration relatively recently³¹. Hence, GSM, UMTS, and the Internet will not be considered in this analysis.

In addition to the limitation of scope there is a limitation of relevant time frame. The overhaul of voice telephony is still going on. The original liberalising measures provided for a review of all European telecommunications legislation in 1999 - 2000, and this review will lead to changes in the European telecommunications regime.

In this research the first EU package of liberalising measures, called the ONP framework³², will be used as the empirical material to establish the impact of EU measures. Market reforms debated or planned as a consequence of or in connection with ONP review of 1999 will not be considered. As far as the used data are concerned, data for the period after 1999 have not been considered because from then on the ONP review is high on the political agenda, and visible for all relevant actors, and behaviour by governments may be motivated less by implementing the original ONP framework than by anticipating the new framework.

ture, but rather an overview of what is readily available for the average customer for everyday communications.

²⁹ There is regulation, but more in the limited sense of preventing market failure, much less in the sense of liberalisation.

³⁰ There will probably be no fully operational large UMTS networks before 2003 or 2004 – if ever. The telecommunications industry has grave problems that will probably hold up further investments in UMTS for a considerable time.

³¹ In the second half of the 1990s the Internet first emerged as an object of government intervention, the main issues being criminal ones (pornography, hateful content). Market failure and asymmetric economic (and technical) relations have only come in sight relatively recently.

³² For: Open Network Provision.

It could be argued that by limiting the analysis to the restructuring process that took place before 1998 the picture of regulatory performance is not complete. There are at least three valid reasons why this point should not be given too much weight. First, the momentous changes like privatising firms, changing legislation, and establishing regulatory authorities occurred early in the process so the most important structural changes will be included in the analysis. Second, if the main interest of this research were the telecommunications or utility markets it would be problematic - but unavoidable - that the actual regulatory activities would get less attention. Yet, the main goal of this research is to come to a picture of EU implementation, for which the utility markets serve as empirical material. Any government activity no matter how incomplete from a larger policy perspective could be informative about the performance of governments. Third, if there is some unfairness in not seeing the end results of the whole process, the member states are being treated equally unfairly. Since this is comparative research the main concern is the comparability that comes from treating all member states equally.

Establishing regulatory renewal

Regulatory renewal brings together a number of indicators measuring both the actual introduction of a legislative package in the member states to liberalise telecommunications and an estimate of the potential effectiveness of measures to prevent market failure.

Implementation of core directives

A first logical step in the chain of events leading to the restructuring of the telecommunications sector is the legal transposition of the ONP directive and of the directive applying ONP principles on voice telephony. This measures the performance of governments in a very direct way: it is simply a test of national legislative capacity.

Table 2-4 shows the dates on which implementing measures became effective in the member states. The implementation of directive 90/387/EEC, containing the basic principles of ONP, was nowhere a problem. Legal implementation was successful in all countries. The table further supports the observation that some member states (notably Germany, Spain and the UK) were already on their way to reform their tele-

communications sectors on their own since a number of implementing statutes precede the directive.

Table 2-4: Dates of implementing measures transposing liberalising directives.

	90/387/EEC implementation date: 01-01-1991	95/62/EC implementation date: 13-12-1996	Assessment
	On time	On time	
Denmark	<ul style="list-style-type: none"> 14-11-1990 (law) 	<ul style="list-style-type: none"> 12-06-1996 (law) 12-06-1996 (law) 12-06-1996 (law) 25-07-1996 (decree) 25-07-1996 (decree) 25-07-1996 (decree) 25-07-1996 (decree) 	4
	On time	No notification	
France	<ul style="list-style-type: none"> 29-12-1990 (law) 27-09-1987 (decree) 29-12-1990 (decree) 02-07-1990 (law) 19-05-1989 (decree) 18-12-1990 (decree) 		3
	On time	On time	
Germany	<ul style="list-style-type: none"> 08-06-1989 (law) 	<ul style="list-style-type: none"> 18-08-1996 (law) 09-05-1975 (court) 09-12-1976 (law) 03-07-1989 (decree) 16-09-1992 (decree) 14-09-1994 (law) 13-12-1995 (decree) 19-12-1995 (decree) 12-07-1996 (decree) 25-07-1996 (law) 01-10-1996 (decree) 23-10-1996 (decree) 	4
	On time	No notification	
Spain	<ul style="list-style-type: none"> 18-12-1987 (law) 		3
	On time	Infringement proceedings opened	
UK	<ul style="list-style-type: none"> 1984 (law) 	<ul style="list-style-type: none"> 1997 (regulation) 1984 (law) 1985 (law) 1989 (law) 1992 (regulation) 1992 (regulation) 1994 (regulation) 1995 (regulation) 1984 (law) 1985 (law) 	2

Source: CELEX database.

The implementation of the voice telephony directive fared worse, however. The UK was late in implementing all of the directive, and the Commission had to start infringement proceedings. The proceedings were closed when the UK implemented the full directive, but the fact that the Commission opened infringement proceedings is in

itself an important indicator that something is seriously wrong with the legislative capacity of the member state.

The situation in France and Spain is slightly more complicated. Although these countries were required to implement 95/62/EC, the directive was repealed by a directive updating the original voice telephony directive (98/10/EC). The commission shifted its attention to the implementation of the latter directive, leaving the failure to notify for what it was³³. Yet, whatever the motives of the Commission, it still means that neither Spain nor France has implemented the directive. The reason the Commission has not initiated infringement proceedings, as it did against the UK, which was also deficient in implementation, is that the latter case is worse since the UK failed to implement the whole directive, and thus the voice telephony ONP measures. So, in terms of administrative effectiveness there are three classes of implementation: Denmark and Germany implementing well (assessment score: 4), France and Spain implementing middle-of-the-road: not good, but not bad enough to take heavy measures either (assessment score: 3) and finally the UK with a bad record in this case (assessment score: 2).

Interconnection and special access regulation

This is the cornerstone of competition in voice telephony. It enables every supplier to reach any customer, even if a supplier does not operate its own network connection to that customer. If an operator wants to reach customers to which its own access network does not extend it can ask for its network to be physically linked to that of another operator that *does* have a network in that region.

The importance of regulation to force especially large and established companies to open their networks to others, especially to new entrants, is stressed by Long: “It can be readily appreciated that in newly-liberalised markets the prospects for a fledgling operator achieving fair and reasonable terms for an interconnection agreement with its monopoly competitor are dim if not non-existent” (Long, 1995:192). Hence, the European framework attaches great value to interconnection³⁴. The final intercon-

³³ A European Commission spokesperson writes: “while implementation is nevertheless theoretically required, France and Spain are not the only Member States not to have notified, and the Commission has tended to focus on their implementation of 98/10 instead” (E-mail 18-10-2000 to the author).

³⁴ E.g.: The so called Bangemann report (1994), a series of recommendations on telecommunications policy named after the main author, commissioner Martin Bangemann, says” “Two features are essential to the deployment of the information infrastructure needed by the information society: one is a

nection regime is laid down in Article 11 of directive 95/62/EC, the special access regime in article 10.

Reasonable requests for interconnection must be taken seriously. In case of a dispute usually the NRA intervenes following the request of one of the market parties. The price for interconnection, the interconnection rate, is regulated. Abuse of rates to hurt a competitor unfairly are forbidden. The rate must be an objective reflection of underlying cost with a reasonable margin of profit, and NRAs also intervene in case of rate disputes³⁵.

The advantage of interconnection lies in efficiency: an operator, wanting to reach a customer in a place covered by another operator's network, does not have to invest in a network parallel to the existing one - the cost of which would have to be borne by the customer. Special access is merely a special form of interconnection for service providers who do not own networks at all, but who need to have access to customers to sell their services (for instance: there are companies offering cheap international calls. They buy capacity on international connections but have no network to households - so they need special access over the access lines of another operator). Interconnection, and the regulation thereof, is the cornerstone of telecommunications liberalisation because it safeguards access to all customers for all operators, regardless of the specific "network geography".

In relation to regulatory effectiveness and the prevention of market failure the interconnection regime goes a long way to establishing the regulatory capacity of governments, or the potential regulatory effectiveness. In terms of liberalisation the existence of interconnection regimes is in itself an indicator of considerable change. A crucial role is played by the NRAs, the national regulatory agencies, who play an important role in resolving interconnection disputes, and who are, usually in close co-operation with general competition authorities, responsible for maintaining open market conditions: "The NRAs are given extensive competences under the directives to supervise the interconnection market, including the power to set ex ante condi-

seamless interconnection of networks and the other that the services and applications which build on them should be able to work together (interoperability)." in: European Commission (1994), *Recommendations to the European Council. Europe and the global information society*, p. 12.

³⁵ Reality is a bit less straightforward than telecommunication law: there is ample room for discussion over what exactly those underlying cost are because there is no agreement over what the most accurate cost accounting model is (see: Melody, 1996:215).

tions, amend RIOs³⁶, impose tariff amendments, intervene of their own initiative in interconnection disputes, scrutinise interconnection agreements, and supervise cost accounting and separation³⁷. Table 2-5 shows the regulators of the member states.

Table 2-5: National Regulatory Agencies and their main tasks.

	Name	main tasks	Formal co-operation with
Denmark	Telestyrelsen (National Telecom Agency, NTA)	Supervising and enforcing compliance with telecommunication regulation	Competition Authority (pricing) Telecommunications Complaints Board (appeal on decisions)
France	Ministry of Economic Affairs, Finance and Industry / Autorité de Régulation des Télécommunications (ART)	<u>Regulator:</u> Regulate interconnection (but not intervene on own initiative during negotiations) Licensing (split responsibility) Dispute settlement <u>Ministry:</u> Awarding licenses Approval of incumbent tariff	
Germany	Regulierungsbehörde für Post and Telekommunikation (RegTP)	Granting licenses Regulating leased lines Regulating tariff principles Frequency assignment Conflict resolution in interconnection disputes (only on request of parties involved)	
Spain	Comisión del Mercado de las Telecomunicaciones (CMT) / Ministry of Information	<u>Regulator:</u> Implementing legislation Supervising operators Supervising competition issues Dispute resolution (operators) <u>Ministry:</u> Frequency management Drafting regulations Numbering Dispute resolution (operators and customers)	Directorate-general for Competition (general competition matters) Competition Court (General competition matters) Economic Affairs Committee (prices to end users for voice telephony)
UK	Office of Telecommunications (OFTEL)	Full regulatory powers regarding telecommunications and competition in the sector	Competition Commission (appeals for competition cases)

Source: OECD Questionnaire 1998³⁸.

³⁶ Reference Interconnection Offer.

³⁷ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 14.

³⁸ The OECD questionnaire was undertaken in preparation for the OECD Communications Outlook 1999, and is published on the Internet and on CD ROM (ISBN: 9264067698). The questionnaires were completed by the respective governments on: Denmark 01-06-1998, France 20-07-1998, Germany 25-08-1998, Spain 24-06-1998, UK 01-06-1998. Data reflect the state of affairs in summer 1998 unless indicated otherwise.

In table 2-6 the national interconnection frameworks are examined in detail. The three main questions answered are: how is interconnection reached, what is the role of the NRA, and are all charges published? The latter is an indication of the transparency of the market. On the basis of the answers to these questions (listed in the table) a partial assessment score is given. The rounded average is the final score for the indicator “interconnection”.

Table 2-6 indicates that commercial agreements are the principal instrument for parties to negotiate interconnection, so normal market conditions seem to prevail.

The way involvement of the NRA is arranged indicates the potential for regulation. The member states do not differ much. All NRAs will become involved when a conflict arises, foreclosing the possibility that operators from whom interconnection is asked (a request to which they must respond) simply steer negotiations into a conflict and evade the obligation to connect another operator. In Germany arbitration is limited to conflicts involving a dominant party. In principle that leaves small operators seeking interconnection from other small operators unprotected, hence it could be regarded as discriminating against small companies. Since size in itself is a powerful creator of market failure in utility or network production conflict arbitration is in Germany a less powerful instrument, hence the lower partial assessment score on that point.

The publication of the interconnection charge, although perhaps a minor detail at first glance, is crucially important for the transparency of the market. The more operators know of each other’s prices, the more efficient the market will function. From that point of view the regulation in Denmark does most to create a fair and efficient market: all charges have to be published. The other member states limit the publication of charges to operators with a dominant position. Although this might in reality be sufficient protection, it is principally the lesser option, because it creates less market transparency. Partial assessment scores are reduced somewhat to reflect this difference.

During this time UK regulations focused on *British Telecom* alone - which does not do justice to the fact that other companies can gain a dominant position in the future. However, at the time the OECD questionnaire was answered license modifications

were already being prepared³⁹ to aim regulation on any dominant operator, which indicates that the restriction to *BT* was not at that time seen as an end situation. So, the score is identical to the (reduced) score for countries obliging to publish the charges of the dominant operator only.

Table 2-6: Organisation of interconnection.

	Interconnection reached by:	Role of NRA	Publication of charge	Assessment
	<i>(partial assessment indicator)</i>	<i>(partial assessment indicator)</i>	<i>(partial assessment indicator)</i>	(rounded average partial assessments)
Denmark	Commercial agreement <i>(4)</i>	Arbitration if no agreement is met <i>(4)</i>	Yes <i>(4)</i>	4
France	Commercial agreement <i>(4)</i>	Arbitration in conflicts <i>(4)</i>	Only SMP ⁴⁰ <i>(3)</i>	4
Germany	Commercial agreement <i>(4)</i>	Arbitration in conflicts involving dominant party <i>(3)</i>	Standard offer by SMP's <i>(3)</i>	3
Spain	Commercial agreement <i>(4)</i>	Arbitration in conflicts <i>(4)</i>	Only SMP <i>(3)</i>	4
UK	Commercial agreement <i>(4)</i>	Arbitration in conflicts <i>(4)</i>	Only BT <i>(3)</i>	4

Source: OECD Questionnaire 1998.

The actual performance of regulation in relation to interconnection is summed up by the Commission as follows: “The greatest single problem facing new entrants in obtaining interconnection on fair terms is cited as being the reluctance, or lack of empowerment, of regulators to intervene in a forceful, timely and effective man-

³⁹ Telecommunications (License Modification)(British Telecommunications plc) Regulations 1999 and Telecommunications (License Modification)(Standard Schedules) Regulations 1999.

⁴⁰ SMP: company with significant market power, the telecommunication law equivalent of the company with a dominant position in general competition law.

ner”⁴¹. Apparently the foot dragging by the regulators *The Economist* noticed⁴² when the telecommunications markets were opened remained a factor although the Commission adds that with the exception of Belgium and Finland regulators were playing a more pro-active role later on⁴³, taking on the role the regulatory package as set out in table 2-5 clearly allows them to play.

The publication of the reference offer or interconnection charge is also problematic, according to the Commission. Only in the UK (and Sweden) are incumbents forthcoming. In other member states confidentiality is often invoked to be less forthcoming⁴⁴.

The general picture that emerges is of a sufficiently good framework whose actual application is not always perfect, possibly a consequence of lack of experience and resources: “a common problem is the difficulty of recruiting and retaining staff in a market where liberalisation and the rapid take off of the market, including in some cases the market in telecoms equipment, has led to severe skills shortages; one NRA reported that its average retention of personnel is six months at the executive level. In extreme cases the NRA is staffed partly by personnel on secondment from the incumbent operator”⁴⁵. This shows how close connections still are in the immediate post liberalisation telecommunications environment, which is in itself dangerous because it opens the door to regulatory capture.

Entry conditions

An operating license is a way to impose obligations or restrictions on entrants’ behaviour or characteristics. E.g. the licence of *British Telecom* contains six parts arranging amongst other things the right to run certain telecommunications systems for a 25-year period, the conditions arranging how the systems are run, in particular to describe which activities fall under the licence and which do not⁴⁶ and interconnec-

⁴¹ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 14.

⁴² “In the shark pond”. *The Economist*, 01-01-1998.

⁴³ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 15.

⁴⁴ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 15.

⁴⁵ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 11.

⁴⁶ E.g. the license precludes the provision of mobile services, which is another activity falling under another regulatory regime and requiring another license.

tion authorisation. Since interconnection could give public voice telephony status to formerly private networks a description of when and how BT can interconnect is given (Long, 1995:64-95).

Licenses themselves are hard to compare because what is exactly arranged in the licence varies and depends on specific policy and technical matters. From the viewpoint of market access (fundamental when pursuing a policy of more competition) it is also more to the point to compare licensing regimes, so to compare how easily companies can receive an license, or access to the market rather than compare the contents of licenses.

Licenses can be distributed in a number of ways. The most common scheme for any license is the auction, in which the scarce license goes to the party with the strongest financial position. In a “beauty contest” the licensing party - usually the government - selects a licensee that is best equipped (organisationally, technically) to deliver a certain service. Licences can also be granted automatically upon simple request in cases where access is not principally limited (by technical conditions e.g.) but where the licensing party simply wants to know who are offering a certain service.

Easy (or, not) licensing is not automatically indicative of effective regulation. From the viewpoint of market access alone licensing can probably not be easy enough, but from the viewpoint of efficiency of the market too many suppliers would, especially in the case of markets with high sunk cost, ruin economies of scale - unless measures have been taken to prevent the break up of networks and the decline of efficiency. However, in the period up to 1998 too few operators was the main problem policy sought to solve rather than too many operators. Because the liberalisation of telecommunications in the EU was well served with easy licensing conditions and the assessment will be made from that viewpoint.

The European Commission has investigated licensing practices in the member states in 1999 and concluded that “there are wide divergences between the national licensing regimes”. Further it has assessed (and specifically mentions) which states stand out negatively on four aspects of licensing⁴⁷:

⁴⁷ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 12.

(1) Conditions, describing who is eligible for a licence. These can be used to create trade barriers, such as France is suspected of doing when it asks a contribution to research and development, which discriminates against smaller operators.

(2) Time limits. Speedy licensing facilitates entry by reducing uncertainty for businesses. A licence application should result in a license or a rejection within six weeks, and some states exceed that by far, e.g. Germany which as listed as requiring two to three months to grant a license.

(3) Procedures. The procedure should be transparent, non-discriminatory and accessible. Generally the procedures do conform to these norms, although in France sometimes a second evaluation is carried out by the ministry (the NRA is the first responsible) which can lead to confusion in case of a decision inconsistent with the earlier NRA’s decision.

(4) Fees: fees should cover administrative costs incurred, and licensing should not be a cash cow.

The overview of the Commission, summarised in table 2-6, is used here to come to an assessment on licensing.

Table 2-7: Licensing, negative practices uncovered in European Commission assessment. Each negative aspects leads to a subtraction of 1 point from the starting evaluation score of 4.

	Commission assessment				Assessment
	Conditions	Time limits	Procedures	Fees	
Denmark	No negative practice	No negative practice	No negative practice	No negative practice	4
France	Obligation to contribute to R&D serves as entry barrier	Exceeds six weeks for networks	Confusion caused by second evaluation by ministry	Too high	0
Germany	No negative practice	Can last up to 3 months	No negative practice	Too high	2
Spain	No negative practice	No negative practice	No negative practice	No negative practice	4
UK	No negative practice	No negative practice	No negative practice	No negative practice	4

Source: *European Commission*⁴⁸.

France and Germany experience problems with licensing. In Germany procedures take too long and are too expensive, which can likely be attributed to “normal” bureaucratic failure. France however can be suspected of raising barriers to entry,

probably to protect the incumbent. Asking telecommunications operators a contribution to R&D sounds like a ruse for asking some extra money or scaring away competitors. As far as network digitalisation goes, a special contribution is hardly necessary because France was the first member state to have a fully digitalised network. Further, competition itself is thought to be the mechanism that speeds up research and development because competitors need to innovate to beat competition (Steinfeld, 1994:9).

Pricing conditions for incumbent

Where the prices of a telephone call once used to be a matter for cabinets to decide on, one might be inclined to see the total absence of pricing control as a victory for liberalisation. Yet, from the viewpoint of preventing market failure a price control mechanism is required. The logic of networks dictates that larger networks are always cheaper, so smaller companies and new entrants face stiff price competition. Governments that are serious about allowing competition should regulate prices.

There are a number of price regulation mechanisms, of which establishing a price ceiling for the incumbent (price cap regulation) has become widespread (Trebing, 1996:36). To assess pricing policies of the member states EU competition law⁴⁹ will be used as a yardstick. The basic rule is that there should be control over the prices of dominant operators to prevent them from setting prices too high in the absence of sufficient competition or too low, leading to predatory pricing. Table 2-7 gives an overview of pricing policies.

Table 2-8: Pricing conditions for incumbents.

	Pricing	Assessment
Denmark	Price ceiling for operator covering more than 50% of the market	4
France	Agreement between the French state and FT stipulates that tariff development is related to development of consumer prices in France	2
Germany	Subject to approval by NRA for licensees with a dominant position	4
Spain	Subject to government approval	3
UK	Retail tariffs are free, with the exception of BT which is subject to a form of price control	4

Source: OECD Questionnaire 1998.

⁴⁸ European Commission (1999). *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p.12.

⁴⁹ Article 82 (ex 86) forbids abuse of a dominant position by setting unfairly high prices, unfairly low prices and discriminatory prices.

The assessment is based on the difference between practices in member states and the pricing regime in EU competition law. Germany's policy, aimed at restricting abuse by dominant operators, is close to the intent of normal competition law, as is Denmark's. For the UK the same remark should be made as under interconnection: the fact that restrictions could only be applied to British Telecom and not to other operators who gain a dominant position is a restriction that in the long run might cause the loss of the instrument (when another operator than BT becomes the dominant operator), but at the time the OECD questionnaire was being answered revisions were already being prepared, so the UK will ultimately also have an instrument to control dominant market parties (see also table 2-5 and explanatory text).

The French answer to the OECD questionnaire needs some elaboration. The answer to the OECD focuses solely on the fact that price development is indexed. That in itself is not an unusual aspect of price ceilings. Any ceiling would have to be determined in a sensible way, although indexing the ceiling against industry-specific indices (e.g. productivity) is preferred (Trebing, 1996:36). So the indexation procedure is not abnormal in itself, but if a ceiling is in place further price regulation would be overdoing it and would infringe the right of commercial enterprises to set their own prices within understandable limits. France does not, however, stop at a price ceiling. On the basis of Article L 36-7 of the *Codes des Postes et Télécommunications (Partie Législative)* further procedures to control the price, resulting in approval (*homologation*) procedures are in place. As table 2-5 indicates responsibilities are split between the ministry and the regulator, and this is also affecting the clarity of tariff authorisation procedures negatively, leading to complaints from operators⁵⁰. Given also the shareholding of the French state in France Télécom there is ample possibility for favouring the incumbent, and a low score must thus be awarded.

Spain also adhered to an approval system, so firm ex ante government control over all prices. Yet, after December 1st 1998 a transitory regime came into force. The *Comisión Delegada del Gobierno* sets maximum and minimum prices, so the ex ante control has been replaced by a bandwidth system which is still far removed from a simple intervention regime for dominant operators, but less tight than ex ante approvals because, literally within limits, operators enjoy commercial freedom. How-

⁵⁰ European Commission (1999). *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p. 10.

ever, a bandwidth system, requiring more regulatory oversight, and bringing with it more complexities, is a less robust system (Trebing, 1996:37). In addition this less robust system was established late. The shortcomings are reflected in a deduction from the maximum score.

Foreign ownership restrictions

An important indicator of liberalisation, particularly in view of the fact that PTOs were seen as “national champions”, is the extent to which foreign ownership is allowed. Although resistance to foreign ownership, especially of controlling shareholdings, of what are generally seen as national treasures is understandable, the logic of free markets dictates that cross-border traffic of capital is not limited in any way⁵¹. The directive is clear about its intention to allow cross-border trade between the member states so the extent to which control over foreign economic relations is *not* executed is indicative of a serious intent to liberalise the market.

Table 2-9: Restrictions on foreign ownership.

Restrictions		Assessment
Denmark	No foreign ownership restrictions	4
France	No foreign ownership restrictions	4
Germany	No foreign ownership restrictions	4
Spain	Preliminary administrative authorisation for gaining control of 10% or more of capital of Telefónica ⁵²	3
UK	No foreign ownership restrictions	4

Source: OECD Questionnaire 1998.

All member states, except for Spain, have allowed foreign ownership without any restriction. Spain keeps control over ownership. A royal decree provides for preliminary authorisation prior to gaining control over more than ten per cent or more of Telefonía’s capital. It should be noted that the measure is not restricted to just foreign parties, but that all individuals or corporations wanting an interest of more than ten per cent should ask for authorisation and that a required approval is not an automatic refusal. Because the measures of Spain keep the possibility open that Telefonía will be owned by a foreign party a mildly lower score has been given.

⁵¹ The free movement of capital is provided for in the original Rome treaty by Articles 67 to 73 and Articles 107 (106) and 111 (109). Swann (2000:171 and 184) argues that because the EU is not just a customs union but a common market free factor movements are essential to gain efficient capital allocation between the member states.

⁵² Royal Decree 8/1997.

The liberalisation of telecommunications has led to a wave of mergers and acquisitions and partnerships⁵³. However, by 1999 none of the incumbents in the countries in this research was owned by a foreign telecommunications operator. Only France Télécom and Deutsche Telekom effected an equity exchange limited to two per cent of their holdings⁵⁴. So the general picture⁵⁵ is of incumbents buying non-incumbent operators rather than incumbents being bought. Deutsche Telekom offers a good example of this practice: through acquisitions, it has become a communications giant with global aspirations⁵⁶.

Access to PSTN

Technical access to the telecommunications infrastructure (PSTN) must not be restricted in a liberalised market. The technical infrastructure is necessary to offer services to the public. Limiting the possibility to physically connect installations to the public telephony infrastructure shuts operators off from their intended clients.

Table 2-10: Operators allowed use of PSTN network in 1985 and 1998.

	1985	1998	Assessment
Denmark	Monopoly	Liberalised	4
France	Monopoly	Open on request ⁵⁷	3
Germany	Monopoly	Fully open	4
Spain	Monopoly	Conditioned	2
UK	Duopoly	Fully open	4

Source: Jussawalla, 1993; OECD⁵⁸; European Commission⁵⁹; OECD Questionnaire 1998.

Table 2-10 gives an overview of access to the telecommunications infrastructure. In 1985 monopoly dominated the picture. The PSTN network was government property and the running of telephony services an exclusive monopoly or a duopoly in the UK.

⁵³ "Phone tie-ups", *The Economist*, 30-07-1998, "European telecoms in a tangle", *The Economist*, 22-04-1999.

⁵⁴ Source: IDATE.

⁵⁵ For the countries in this investigation. The Belgian incumbent, *Belgacom*, was partially owned by TeleDanmark (33 per cent stake), the Irish incumbent, Eircom, by Telia and KPN, the Swedish and Dutch incumbent respectively (joint share of 35 per cent), and the Austrian incumbent, Telekom Österreich, by Telecom Italia (25 per cent stake). (All figures for end 1999. Source: IDATE NEWS N° 132).

⁵⁶ "Telekomplicated", *The Economist*, 19-08-1999.

⁵⁷ In a footnote the French government adds: "Nécessite une autorisation", which is the license referred to in table 2-6: "the French regulatory texts use only the word "authorization", but in English it is sometimes more convenient to use the term "licence" (Shin, 1995:408).

⁵⁸ OECD (1995), *Communications Outlook*.

⁵⁹ European Commission (1997), *Status Report on European Union Telecommunications Policy*

In 1998 the picture is more diverse. Three countries have fully opened or liberalised the PSTN network, which means that companies can use the infrastructure without further consideration, and can interconnect with other operator's infrastructures or get special access. France is more careful. A licence is needed (table 2-6 indicates that licenses are hard to get in France) and a request must be made. "The ministry is to retain discretionary power to deny license applications on specific grounds concerning national security and insufficiency of technical and financial guarantees" (Suberk and Ackerman, 1996) so a refusal to use the infrastructure is possible, which implies that a possible legal barrier to market access exists. The legal structure is thus potentially more restrictive, so a slightly lower score was awarded. Spain's technical access conditions are restrictive. In Spain (and Belgium) licensing of operators is dependent on so called roll-out conditions, or the obligation to build or renew technical infrastructures to obtain a license. New entrants usually must provide points of interconnection. In addition Spain limits the right of new entrants to connect to the network to limit the risk of overloading the incumbent network. If there is a chance of overloading new investments are asked from the new entrant⁶⁰. The Commission gives the following assessment of this practice: "Although these concerns are not in contradiction with specific provisions of the EC regulatory framework, they raise the issue of the proportionality of the requirements"⁶¹. There is a potential for abuse, and the roll-out condition imposes more and heavier demands on operators than the demands cited above regarding France, hence Spain receives a lower score⁶².

⁶⁰ European Commission (1997), *Status Report on European Union Telecommunications Policy*, p. 15.

⁶¹ European Commission (1997), *Status Report on European Union Telecommunications Policy*, p. 15.

⁶² Because a roll out condition is not a principally unjust demand in the European telecommunications framework it was not used in the assessment of general licensing conditions (table 2-6). However, in the specific technical demands much can go wrong in terms of disproportional demands. Hence the issue is raised here rather than at the point where general licensing conditions were treated. There the

Overview

Table 2-11: Overview of regulatory renewal assessment scores. Maximum = 24.

	Indicators						Variable
	Implementa- tion of core direc- tives	Intercon- nection and special access regulation	Entry conditions	Pricing conditions	Foreign ownership restrictions	Access to PSTN	Regulatory renewal
Denmark	4	4	4	4	4	4	24
France	3	4	0	2	4	3	16
Germany	4	3	2	4	4	4	21
Spain	3	4	4	3	3	2	19
UK	2	4	4	4	4	4	22

Establishing market renewal

Privatisation of public utility company

The privatisation of telecommunications operators was the most visible and talked about element of utility reform, likely because it concerned the change of status of familiar institutions like the *PTTs* or the post offices and because in most countries the telecoms were the first utilities to be privatised. This made the public offerings of stock highly publicised events, to which the large sums of money involved must have added. E.g., when *France Télécom* was floated it was the largest offering of a single stock on the Paris exchange⁶³. The privatisations were also surrounded by labour unrest because of the loss of civil service status of employees and the attached loss of job security⁶⁴.

Privatisation of operators in utility sectors is not only a form of general public sector reform to improve public management (see: Denkhaus and Schneider, 1997:72), it has a specific function in the separation of policy, production and regulation that is the cornerstone of telecom reform (Melody, 1996:22). This is a crucial element. As long as governments have controlling or sizeable shareholdings in companies there is every chance that the company will not behave or be perceived as just any commercial firm. A controlling stake obliges the government to participate in decision mak-

divergence with European norms was the issue, and on that point, as the Commission indicates, there is nothing wrong with this aspect of Spain's policy.

⁶³ "France Télécom espère attirer deux millions de petits actionnaires", *Le Monde*, 23-09-1997.

⁶⁴ "FRANCE TELECOM : 300 salariés ont manifesté contre la privatisation. ", *Le Monde*, 18-09-1997 ; "La CGT et SUD appellent à une grève à France Télécom, tandis que la CFDT et FO refusent de s'y joindre", *Le Monde*, 20-09-1997.

ing even if it does not want to participate. Further, it might very well be that a company that has strong links with the government will be seen as a national champion, and will for instance be considered a safer investment than other companies which creates an undue advantage on the capital market. Companies whose stock is partially government owned have less commercial freedom (in particular in international mergers and acquisitions) because sales of companies to state-owned companies may be forbidden or subject to restrictions. Finally, policy consideration external to the company itself (e.g. labour market politics) might interfere with decision making. To prevent capture by trade unions and politicians and forced co-operation to non-profit, political goals (compare Denkhaus and Schneider, 1997:72), companies need to be privatised.

Privatisations should be carried out completely, with no stock remaining in the governments' hands. The fact that company officials would have to communicate to government officials acting as share holders increases the chance of improper behaviour benefiting the firm, particularly given the fact that the incumbent companies have spend most of their history well within the circle of government. This implies that there will be ample personal and business contacts between personnel of the ministry, the regulator and incumbent. A formal tie between government and incumbent that moreover exists in the sensitive area of finance would be a sign of incomplete privatisation. The only minimal guarantee that no improper dealings take place is a zero stake of the government in the incumbent. Melody emphasises that governments should keep operators at "arms length" and should not mingle in operational affairs (1996:21).

Privatisations were indeed carried out in the 1980s and 1990s, following a familiar pattern across Europe: divestiture of post and telephone activities would be followed by the privatisation of the telecom operator. The actual development is summarised in table 2-12 which gives the situation in 1985 and again in 1998.

Denmark, Spain and the UK have fully privatised their incumbent telecom operators, and thus receive a full score. France has only privatised 25 per cent of its *PTT*. Germany and France still have large and controlling shares in their incumbent companies (in 1998), and are given lower assessment scores. France is in the 0 - 25 per cent privatisation range and receives a score of 1, Germany is in the 25-50 per cent privatisation range and receives a score of 2.

Table 2-12: Ownership of public utility companies in 1985 and 1998.

	Company	1985	1998	Assessment
Denmark	Tele Danmark A/S	51% state-owned	100% privatised ⁶⁵	4
France	PTT	Administration department	25% privatised ⁶⁶	1
Germany	Deutsche Telekom	State-owned	38% privatised ⁶⁷	2
Spain	Telefónica	35% state-owned	100% privatised	4
UK	British Telecom	Privately owned	100% privatised	4

1 = 0% / 25%, 2 = 25% / 50%, 3 = 50% / 75%, 4 = 75% / 100% privatisation.

Source: Jussawalla, 1993; OECD⁶⁸; European Commission⁶⁹; OECD Questionnaire 1998.

The reluctance to full privatisation of *France Télécom* stems in part from the view that the company has a crucial role in offering public services and that those services cannot be guaranteed under conditions of full privatisation (Postif, 1997:220), in part from the wish not to antagonise trade unions too much⁷⁰, and in part from the French vision on role of the state⁷¹.

In Germany the reluctance to privatise was also not limited to *Deutsche Telekom*⁷². It will be remembered that at the divestiture of the post and the telephone companies the privatisation of the new telephone company, *Deutsche Telekom*, was ruled out by the German minister of telecommunications, Christian Schwartz-Schilling. This reluctance may still have played a part, although the low share price of *Deutsche Telekom* right after 1997⁷³ will also have influenced the reluctance to sell.

Market renewal score

One of the goals of liberalising policy is to change the structure of the market. The changes in legislation and the interconnection provisions in particular must enable

⁶⁵ Means that the government has no controlling share ownership.

⁶⁶ The PTT department was separated in a mail company (La Poste) and a telecommunications company (France Télécom) by law on July 2, 1990.

⁶⁷ Partial privatisation in 1996: 22.7 per cent sold through public offering, 3.3 per cent to employees, 13 per cent of the governments shares were already sold to the Kreditanstalt für Wiederaufbau (German Development Bank).

⁶⁸ OECD (1995), *Communications Outlook*.

⁶⁹ European Commission (1997), *Status Report on European Union Telecommunications Policy*

⁷⁰ Telecom reform was accompanied by labour unrest. E.g.: "Guerre de positions autour de la réforme de France Télécom", *Le Monde*, 02-04-1996.

⁷¹ Partial privatisations, around 20 to 25 per cent were the normal line in France, leading one analyst to call those privatisations a chance to buy "a share in the French civil service" (Fenby, 1998:150).

⁷² "In-house sales?", *The Economist*, 20-05-1999.

⁷³ "Wrung out", *The Economist*, 05-02-1998.

more operators to offer their services to the public. A difficult question is: when does competition exist in a market? Obviously this is what is to be measured here, but the matter is not straightforward. The existence of other operators challenging the incumbent would naturally be a demand, yet establishing the mere existence of these competitors would not suffice, since competition should be meaningful, and have an impact on the behaviour of the dominant player.

In European competition law the indicator for dominance is market share (Weatherill and Beaumont, 1999:864) and that indicator, combined with the number of new entrants, will here be used to gauge real change on the market. If a substantial number of new entrants manage to eat away a large proportion of the market share of the incumbent the market is both lively (many players) and effective (diminishing the dominance of the incumbent). If there are many players who each have very small market shares and thus are hardly taking away market share from the incumbent, the market is lively, but hardly effective at diminishing dominance, because the incumbent hardly needs to consider competitive pressures from other companies⁷⁴. If there are few players, or even one, with substantial market shares the market is effective, but also a rather dull duopoly or oligopoly, which might harm innovation⁷⁵. Thus, many players, and a large decline of incumbent market share would be indicative of healthy competition, and on this assumption assessment will be based.

For three separate markets, local calls, national calls, and international calls, the number of active operators and the decline of incumbent market share have been gathered (table 2-13).

These data refer to 1998, and it is clear that new entrants have emerged and have made inroads in the market in most member states, although not in all cases convincingly. To compare the market changes in the member states the individual scores above will be converted into z-scores, a measure indicating how many standard deviations the difference is between each score and the average. This is indicative of

⁷⁴ Strictly speaking European competition law also recognises that *potential* competitors who thus ought to be included in establishing dominance: “even where a firm is the sole producer presently active in the market, this does *not* necessarily confer on it a dominant position, provided it is subject to the influence of potential competition” (Weatherill and Beaumont, 1999:865). This potential is however very difficult to measure.

⁷⁵ The effect of a limited number of players in high tech markets is summarised as follows in *The Economist*: “What worries competition authorities most is the ability of firms such as Microsoft and Intel to exploit their power to co-opt the technologies of other companies, thereby limiting competition and stifling innovation”. Source: “Lessons from Microsoft”, *The Economist*, 04-04-1999.

comparative performance. For both the number of operators and the decline of incumbent market share the rule is: the more the better. The member state whose markets change most will have high *z*-scores on both indicators. This means that by adding the *z*-scores a full comparative picture of *market renewal* emerges⁷⁶. The UK will be excluded from the calculation (not from the assessment!) because it had liberalised its markets years before. Its mature telecommunications market would present an unfair advantage against the other member states, which would marginalize the efforts of other member states and would skew the scores negatively.

Table 2-13: Number of active operators and decline of incumbent market shares.

	Local calls market		National calls market		International calls market	
	Number of operators	Incumbent market share decline	Number of operators	Incumbent market share decline	Number of operators	Incumbent market share decline
Denmark	11	6%	11	6%	11	36%
France	8	2%	31	2%	31	2%
Germany	22	2%	47	35%	47	35%
Spain	26	0%	10	6%	10	5%
UK	36	17%	26	28%	66	46%

Sources: European Commission⁷⁷ (operators); OECD Questionnaire 1998⁷⁸ (market shares).

Table 2-14 shows to what extent markets have changed. The UK (see previous table) and Germany clearly have markets moving in the right direction, while the other states lag far behind, Denmark to a somewhat lesser extent.

Already a short time after the liberalisation on January 1st 1998 it was noted that *Deutsche Telekom* had been “bleeding revenues and customers”⁷⁹, an observation consistent with the findings here. High cost, poor service and sharp attacks of com-

⁷⁶ The full equation for the value on which the assessment score for each member state will be based is:

$$z\text{-score}(\text{local operators, local incumbent market share decline, national operators, national incumbent market share decline, international operators, international incumbent market share decline}).$$

⁷⁷ European Commission (1999). *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, pp 148-52. Annex 4 (4.2), chart 18, 20 and 22. The charts give numbers of operators authorised and numbers of operators actually offering services; the latter number is used here.

⁷⁸ The actual numbers have been taken from the OECD Questionnaire, but they have been checked against the graphical representation (no numerical values given) of declines of incumbent market share in Annex 4 of the *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*. Generally the OECD number matched the graph of the European Commission, except in the case of Spain’s national and international market where the OECD figure was zero per cent but where the Commission graphs showed decline in both markets. It was chosen to attach greater value to the data of the European Commission on this point, and the values have been visually estimated at six per cent and five per cent respectively.

⁷⁹ “Germany calling back”, *The Economist*, 09-04-1998

petitors (*Otelo, Mannesmann Arcor, Talkline, Viag Intercom*) were the main reasons⁸⁰, so the market liberalisation works.

Table 2-14: z-Scores and Market Renewal Scores.

	Local calls market		National calls market		International calls market		Cumulative z-scores	Assessment scores ⁸¹
	Number of operators	Incumbent market share decline	Number of operators	Incumbent market share decline	Number of operators	Incumbent market share decline		
Denmark	-0.67	1.39	-0.78	-0.41	-0.78	0.89	-0.35	2
France	-1.02	-0.20	0.35	-0.67	0.35	-0.94	-2.12	1
Germany	0.61	-0.20	1.26	1.49	1.26	0.84	5.25	4
Spain	1.07	-0.99	-0.83	-0.41	-0.83	-0.78	-2.78	1
UK	4

4 = 5.25 / 3.2425, 3 = 3.2425 / 1.235, 2 = 1.235 / -0.7725, 1 = -0.7725 / -2.78.

In France and Spain the data indicate that the incumbents, *France Télécom* and *Telefonica*, remain dominant in all markets. In spite of the growth of the number of operators the incumbent market shares do not move downwards significantly so the competitors are hardly successful. Denmark's slightly higher score is a result of the success of competition on international calls, local and national calls markets are firmly in the hands of the incumbent⁸². The lower levels of competition can hardly be explained by a lack of interest on the side of potential customers; at the time, in 1998, it was acknowledged that all incumbents faced "grave threats from fast-moving competitors", amongst them American companies such as *Qwest* and *MCI WorldCom*⁸³, so it is not unlikely that regulatory practices play a role. For Spain and France this is not surprising, it has been noted before that in neither country the government's heart was really in privatisation and liberalisation programs. It must also be remembered that Denmark's first allegiance was to a strong incumbent able to

⁸⁰ "Wrung out". *The Economist*, 05-02-1998

⁸¹ Scores are based on the position of the cumulative z-score on the interval from highest to lowest score, divided in equal 25 per cent shares

⁸² This is still the conclusion of the 2001 Status Report on the Danish telecommunications market commissioned by the regulator, so it is a persistent problem. (See: Melody. W.H. (2001). *Trends in European Telecommunication: A Status Report of Denmark's Progress in Telecom Reform and Information Infrastructure Development*, p. 42).

⁸³ "European telecoms in a tangle", *The Economist*, 22-04-1999.

compete on international markets, so some protection of the incumbent may not be ruled out.

Overview

Table 2-15: Overview of market renewal assessment scores. Maximum = 8.

	Indicators		Variable
	Privatisation of public utility corporation	Market renewal score	Market renewal
Denmark	4	2	6
France	1	1	2
Germany	2	4	6
Spain	4	1	5
UK	4	4	8

Establishing efficiency and innovation

A major goal of utility reform was to force the large and unresponsive state utility corporations to improve their productivity. Privatisation transferred these companies from the protected sphere of government to the competitive forces of the market and was an important measure to improve efficiency, as was the introduction of other companies on the same market (Lane, 1997:7-11). Competition is also supposed to have a positive effect on innovation. Operators, faced with competing firms, will want to improve or diversify their service to have a stronger position in comparison with competitors, and will invest in better technology⁸⁴.

Productivity

If the management, organisation, and efficiency of utilities has improved by exposing them to the forces of the market this should be indicated by improved labour productivity. Companies will, under conditions of competition, be forced to cut cost, and because they were seriously overstaffed (Denkhaus and Schneider, 1997:72) the obvious thing to do is to reduce the workforce. This alone should affect productivity, and it can be measured by gauging changes in the revenue per employee. In member

⁸⁴ The relation between competition and innovation finds its roots in the work of Schumpeter: “In probably its most influential presentation, Schumpeter characterises capitalism as a process of ‘creative destruction’ in which agents battle against their constraints and look for more profitable ways of acting, in a manner which constantly destabilises the system but thereby moves it to higher levels of productivity” (Shipman, 1999:159). Technical change is one way of battling the constraints, the constraints being amongst others competitive actions of other firms.

states where competition is more seriously anticipated or experienced revenue per employee should increase. If that increase does not occur the seriousness of the competition can be questioned.

Table 2-16: Revenue per employee 1993 - 1999, US\$ and z-scores.

		1993	1995	1997	1999	Cumulative z-score	assessment score
Denmark	Raw score	270247	226412	267933	219917		
	z-Score	1.76	1.26	1.61	-0.57	4.05	4
France	Raw score	144728	177764	168320	200486		
	z-Score	-0.36	-0.53	-1.07	-1.12	-3.07	1
Germany	Raw score	155659	212133	202652	233279		
	z-Score	-0.17	0.73	-0.15	-0.19	0.22	2
Spain	Raw score	128881	158301	189335	253299		
	z-Score	-0.62	-1.25	-0.50	0.37	-2.00	1
UK	Raw score	129824	186411	212112	293171		
	z-Score	-0.61	-0.21	0.11	1.50	0.79	3

4 = 4.05 / 2.27, 3 = 2.27 / 0.49, 2 = 0.49 / -1.29, 1 = -1.29 / -3.07.

Source: OECD⁸⁵.

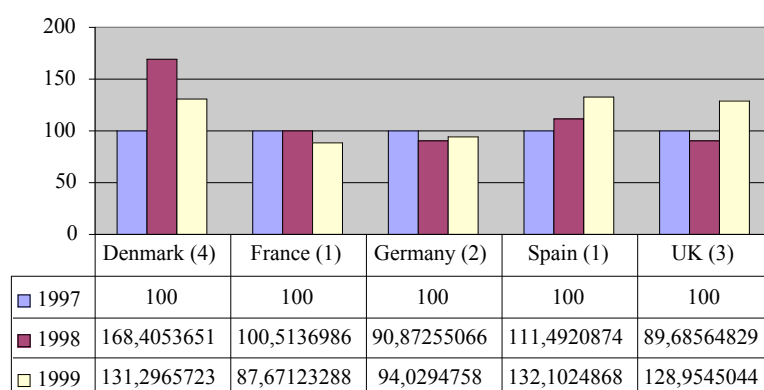
Table 2-16 gives an overview of labour productivity over the years in which competitive forces were introduced in telecommunications. Assessment scores are, again, based on the position of the cumulative z-score on the interval from highest to lowest score, divided in equal 25 per cent shares. The demarcation values of each interval are printed under the table. The years prior to the actual liberalisation of the market in 1998 have been included because from 1993 on competition could have been anticipated and companies could have been taking measures to improve efficiency from then on.

As is clear, there are differences between the member states, both with respect to the overall change and the period in which most of the progress has been booked. E.g., Denmark showed impressive gains in productivity before liberalisation, most likely a consequence of the merging of regional telecoms in TeleDanmark, but lost productivity after the liberalisation. Spain, on the other hand, behaves according to the book, with relatively slow gains in the years preceding liberalisation, and a large increase right after liberalisation (larger than the increase in the years before 1998 combined).

⁸⁵ OECD, 2001. *Communications Outlook*, p. 245.

Can the efficiency gains be a result of other causes, like a shift in capital (the other main production factor in addition to labour)? They cannot be attributed to shifts in investment. Figure 2-1 shows there is no clear relation between investment and assessment scores; in fact the pattern is rather erratic, with for instance inverse relations between productivity and investment in Germany and Spain, and other relations in other member states.

Figure 2-1: Indexed public telecommunication investment in the years surrounding liberalisation. 1997 = 100, assessment scores in brackets.



Source: OECD⁸⁶.

Innovation

Shipman (1999) defines technical change broadly as “any change in capital equipment, labour skill or the organisation of factors⁸⁷” (1999:159). Because a major rationale for reform was emergence of new technology and the feeling that implementing new technology was harder in Europe than for instance in the United States (Steinfeld, 1994:9) technical innovation will mainly be understood as technical improvement of the PSTN network and not as organisational innovation (e.g. new marketing schemes, new ways of organising business).

The main innovation was the integration of traditional analogue systems and computer technology: “Due to the enormous capabilities of the computer, however, the trend in telecommunications has been a gradual conversion from analog to digital transmission” (Hioki, 1998:4). Changing the traditional electronic and mechanical switching system into a computerised, digital network makes it possible to add fea-

⁸⁶ OECD, 2001. *Communications Outlook*, p. 91.

tures and services to telephone networks that can be used to compete with other operators. Examples of extra features are network-based answering facilities, smart call back and follow me features.

Table 2-13 shows the extent to which the PSTN network has been digitalised since 1993. Making an assessment based on the result in 1999 only would not do justice to efforts in digitalisation in previous years when competition could be foreseen, and would not measure the relative progress over the years. Assessment scores are based on the position of the cumulative z-score on the interval from highest to lowest score, divided in equal 25 per cent shares.

Table 2-17: Percentage digitalisation of the network. Percentages, z-scores, cumulative z-scores, assessment scores.

		1993	1995	1997	1998	1999	Cumulative	Assessment
Denmark	raw score	46.0	61.0	86.0	100	100		
	z-score	-0.56	-0.55	-0.79	0.45	0.45	-1.01	3
France	raw score	86.0	100.0	100.0	100.0	100		
	z-score	1.33	1.36	0.72	0.45	0.45	4.30	4
Germany	raw score	41.0	56.3	100.0	100	100		
	z-score	-0.79	-0.78	0.72	0.45	0.45	0.03	3
Spain	raw score	41.0	56.0	80.8	86	87		
	z-score	-0.79	-0.80	-1.354	-1.79	-1.79	-6.52	1
UK	raw score	75.0	88.0	100.0	100	100		
	z-score	0.81	0.77	0.72	0.45	0.45	3.19	4

$4 = 4.30$ / 1.595 , $3 = 1.595$ / -1.11 , $2 = -1.11$ / -3.815 , $1 = -3.815$ / -6.52 .

Source: OECD⁸⁸.

France is the first country with a fully digitalised network. Given the French liking for public services⁸⁹ this might surprise (or chagrin) neo-liberals who think the market is the only innovating force. But apparently the “grands projets” strategy, launched in the 1970s but continuing well into the 1990s, in which the state played a major role in planning and co-ordinating large infrastructure projects (Thatcher, 1996:188-92) paid off. France was also the first nation to have a national computer

⁸⁷ The proportion of labour to capital.

⁸⁸ OECD (1999), *Communications Outlook*, p. 70 and: OECD, 2001, *Communications Outlook*, p. 89.

⁸⁹ “They love it”, *The Economist*, 25-05-2001

information network accessible from the home, called Minitel, and this must have given them valuable experience, if not a penchant for high-tech networks, which makes the position of France only a mild surprise. Denmark, Germany and the UK were somewhat later, but not much later - as is reflected in their assessment scores. Why these countries were later is difficult to assess, but it is likely that the attention for mobile network investment took away some attention from the fixed network. The number of mobile subscribers mushroomed between 1990 and 1999 and out-paced the growth of fixed network subscribers⁹⁰ so a certain neglect of the fixed network in favour of the mobile network with its promise of large profits is understandable. The fact that it was sometimes supposed⁹¹ that mobile telecommunications would replace fixed telecommunications must have made seem the shift in investment rational.

Overview

Table 2-18: Overview of efficiency and innovation indicators. Maximum = 8.

	Indicators		Variable
	Productivity	Innovation	Efficiency and innovation
Denmark	4	3	7
France	1	4	5
Germany	2	3	5
Spain	1	1	2
UK	3	4	7

Spain's relatively backward position - in 1999 it had not managed to fully digitalise its PSTN - is probably related to overall economic development and modernisation - former east block countries were also slow in digitalisation of the network⁹².

Establishing price development

The ultimate gain of telecom reform is lower prices. If the inefficient government steps out, and if a lively market forms, prices (both for consumers and business) are bound to decline (compare Lane, 1997:1-16).

⁹⁰ Four per cent fixed network subscriber growth annually against 49.1 per cent mobile subscriber growth annually(!) in the 1995-1999 period. In: OECD (2001), *Communications Outlook*, p. 69.

⁹¹ E.g.: In 1999 *The Economist* called the wired telephone a "dying technology" ("The wireless revolution", *The Economist*, 22-01-1999).

Measuring and comparing tariffs is difficult because there are national differences in tariff systems (ratio of fixed to variable cost⁹³) and metering and billing practices (units or seconds⁹⁴). Generally a telephone charge consists of a fixed fee covering administrative and connection fees and a usage fee covering connection time. This affects the measurement: the price of a short call will generally be determined more by the fixed price, while in longer calls the usage fee gets more weight. If the distance covered is also factored in by the operator national differences can influence the comparison between the national tariffs as well. Here the data in Annex 4 of the *Fifth Report on the Implementation of the Telecommunications Regulatory Package*⁹⁵ have been used because they give the time movements for measure long and short calls (10 minutes and three minutes respectively) and specify them for local, regional (50 km) and national or long-distance (200 km) calls and thus factor in most of the possible differences⁹⁶.

Local call charges

If liberalisation is to have an effect on prices some effect should be measurable. To gauge a possible effect the European Union data on local call charges in 1997 (before liberalisation) and in 1999 (after liberalisation) will be analysed. The averaged difference (1999-1997) for long and short calls been used for the assessment scores. The position of the difference score on the interval from highest to lowest score, divided in equal 25 per cent shares, is the basis of the assessment score. Findings are summarised in table 2-19.

Spain's tariff has actually increased strongly. Germany and the UK have no change at all, and France has minor movement. Only Denmark has the prescribed strong decline.

In the case of the UK it will be remembered that liberalisation took place in 1984, and that it would be more appropriate to look at data right after that time. However,

⁹² OECD (2001), *Communications Outlook*, p. 74.

⁹³ OECD (2001), *Communications Outlook*, p. 171ff.

⁹⁴ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 192.

⁹⁵ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), Annex 4.

⁹⁶ The OECD tariff baskets are also widely used. They give an estimate of the average annual spending of a "typical" customer, but the number of calls differs per year, which make the baskets less suit-

local charges (off-peak five minute calls) have been relatively stable since 1984⁹⁷, so if the assessment would include earlier data it would not differ much. The explanation for that fact lies in the lack of competition on local networks.

Table 2-19: Average annual variation in local call charges between 1997 and 1999. Based on percentages of tariff differences.

	3 minute	10 minute	Average	z-scores	Assessment
Denmark	-14	-5	-9.5	-1.01	4
France	+6	-3	1.5	-0.05	4
Germany	0	0	0	-0.18	3
Spain	+10	+26	+18	1.38	1
UK	0	0	0	-0.18	3

4 = -1.01 | -0.4125, **3** = -0.4125 | 0.185, **2** = 0.185 | 0.7825, **1** = 0.7825 | .318.

Source: European Commission⁹⁸.

The so called “local loop” is predominantly owned by incumbents and where in long-distance calls intermediate companies can offer connections, those competing middle men are usually absent in local telecommunications. It should further be noted that the BT tariff for local calls in 1984 was only a fraction of that of long-distance calls⁹⁹, so local calls did not constitute a viable and interesting market anyway, which accounts for the lack of competition. This is also the explanation for the lack of tariff decrease in Germany: in 1999 only five per cent of the population had a choice of operators for local calls¹⁰⁰. Deutsche Telekom did not face competition on the local loop, so there was no reason to lower tariffs. There are no data on the percentage of the French population having a choice of operator, but the data in table 2-11 on the number of operators and the decline in incumbent market share indicate that with eight operators and a decline of the local calls market share of France Telecom of two per cent local competition was not exactly booming in France, although there is a decline in tariffs for longer calls. The reverse explanation holds true for Denmark: 100 per cent of the population had a choice of operators¹⁰¹ and local charges declined.

able for longitudinal comparison. See: OECD (1990), *Performance indicators for public telecommunications operators*.

⁹⁷ “A map of the future”, *The Economist*, 02-04-1999.

⁹⁸ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p. 198.

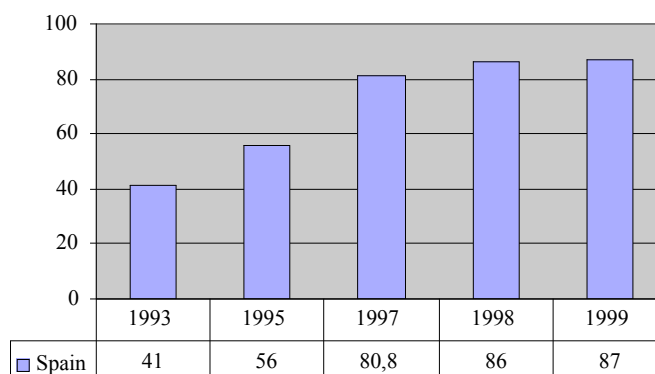
⁹⁹ “A map of the future”, *The Economist*, 02-04-1999.

¹⁰⁰ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p. 149.

¹⁰¹ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p. 149.

The figures for Spain seem indicative of a failed liberalisation. Reality, however, is more complex. Since mid-1996 Telefonía's course was set on investing and expanding in Latin America¹⁰². The company, needing cash to finance its expansion, suspended dividend and replaced it by a share issue and cut cost, amongst other by shedding jobs¹⁰³. Graph 2 below illustrates how the new course affected other operations: network modernisation, in which impressive gains had been made between 1993 and 1997 (the percentage almost doubled!) came to a virtual halt, so that is not where the cash that was raised went¹⁰⁴. Apparently consumers paid for part of the expansion, not only with higher tariffs, but also with a network technically less modern than possible.

Figure 2-2: Digitalisation in percentage of PSTN network in Spain .



Source: figures taken from table 2-13.

The question is whether this is a botched liberalisation, and of what exactly the tariff is indicative (and more prosaically: what the assessment score should be?). It should first be noted that the tariffs, while increasing, are still far below the European average¹⁰⁵, so it could be argued that the management of Telefonía is simply putting only a bit more strain on tariffs that could be stretched far more, and that it is actually showing restraint. And for a good cause, because the expansion strategy serves to make the company more competitive and more successful, which will in the end

¹⁰² "L'empire sud-américain de Telefonía", *Le Monde*, 18-08-1998.

¹⁰³ "Telephones from Toledo to Tierra del Fuego", *The Economist*, 10-12-1998.

¹⁰⁴ Some of it went to Telefonía's fixed assets: a visitor was quoted who compared the recently re-done headquarters to a famous nightclub in London, *The Economist*, 10-12-1998.

¹⁰⁵ European Commission (2001), *Report on the implementation of the 2000 broad economic policy guidelines* (ECFIN/176/01-EN), p. 79.

benefit consumers. Expanding consumer base by investment¹⁰⁶, acquiring other companies, could be as valid a reaction to liberalisation as expanding consumer base by lowering tariffs. However, it could also be argued that the behaviour of Telefonía is indicative of a lack of competition. The only reason it can milk its consumers to pay for extravagant overseas adventures is because there are no competitors to force the firm into keeping its tariffs under control. After all that tariffs are still low compared to other European countries is hardly an argument that should impress consumers faced with a 26.4 per cent price increase in two years and who are not likely to compare their telephone charges to foreign telephone charges. Given that there is little serious competition (see table 2-11) the latter line of argumentation seems more realistic. The development of the tariff will be treated as indicative of incumbent dominance and the assessment score is be set at one accordingly.

National call charges

Similar data are available for national or long-distance call charges. The difference between the liberalised and the not liberalised telecommunications environment before will be used to make an assessment.

Table 2-20: Average annual variation in national call charges between 1997 and 1999. Based on percentages of tariff differences. Score for the UK adjusted (see text).

	3 minute	10 minute	Average	z-scores	Assessment
Denmark	-23	-19	-21	-0.99	4
France	-18	-16	-17	-0.39	3
Germany	-19	-19.5	-19.25	-0.72	4
Spain	-9.5	-9	-9.25	0.79	1
UK	-5.5	-5.5	-5.5	1.33	3

$1 = 1.33 \text{ I } 0.75, 2 = 0.75 \text{ I } 0.17, 3 = 0.17 \text{ I } -0.41, 4 = -0.41 \text{ I } -0.99$

Source: European Commission¹⁰⁷

The score for the UK needs adjustment. On the basis of the calculated z-score the assessment score would be 1, but by 1998 the UK telecommunications market was already a stable market, whereas the other markets were recently liberalised. So the right basis for comparison would be the UK market right after liberalisation, in 1984. Right after 1984 tariffs for long-distance calls (5 minute, off peak) dropped consid-

¹⁰⁶ Some 23.5m customers were added in Latin America, against 21.6m in Spain (“Telephones from Toledo to Tierra del Fuego”, *The Economist* 10-12-1998)

¹⁰⁷ European Commission (1999). *Fifth Report on the Implementation of the Telecommunications Regulatory Package (COM(99)537)*, p. 199.

erably, some 10 - 15 per cent¹⁰⁸, which would place the UK close to France, hence the same score.

The other member states, except for Spain, show considerable decreases in tariffs, which is consistent with the fact that there is choice of long-distance operators¹⁰⁹ as from 1998. Spain, as said, is the exception: 100 per cent of the population has a choice of long-distance operators¹¹⁰, yet tariff decline is, compared to the other member states, relatively low. It should be noted, however, that tariffs do decline, The comparatively less marked decline is likely to be attributed to the cost of overseas expansion explained above.

Overview

Table 2-21: Overview of price development assessment scores. Maximum = 8.

	Indicators		Variable
	Local call charges	National call charges	Prices
Denmark	4	4	8
France	4	3	7
Germany	3	4	7
Spain	1	1	2
UK	3	3	6

PART 3: FINDINGS ON THE EXTENT OF IMPLEMENTATION

Table 2-22 shows the overall results for the impact of European Union policy. The table shows how European legislation concerning the liberalisation of the telecommunications sector has changed the industry and government regulation. The average score of 37.0 out of a maximum of 48 is quite high given the profundity of the change and the nature and complexity of the industry. The general conclusion of the European Commission, in the *Fifth Report on the Implementation of the Telecommunications Regulatory Package*, reviewing the market was that, twenty one months after the introduction of full competition, “the regulatory framework now in place drives telecommunications services markets in the Member States with an accelerat-

¹⁰⁸ “A map of the future”, *The Economist*, 02-04-1999.

¹⁰⁹ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 150.

¹¹⁰ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 150.

ing growth rate, large numbers of market entrants and falling tariffs”¹¹¹. This assessment is certainly warranted by the data.

Table 2-22: Variable and overall scores for the extent of implementation in telecommunications. Maximum score = 48, Mean = 37.0, Standard deviation = 7.65.

	Extent of implementation	Regulatory renewal	Market renewal	Efficiency and innovation	Price development
Possible maximum	48	24	8	8	8
Denmark	45	24	7	7	8
France	30	16	3	5	7
Germany	39	21	6	5	7
Spain	28	19	5	2	2
UK	43	22	8	7	6

What about the relative positions of the member states? To see the strengths and weaknesses of the member states all the indicators with assessment scores lower than two have been charted in table 2-23. Not surprisingly the two countries on top, Denmark and the UK, each have only one weak area, but it is revealing to see which areas they are. Denmark’s telecommunication market, in terms of a combination of new entrants and decline of incumbent market share, has not progressed much. It shows that, even with all legislation and regulatory instruments in place, the market structure does not change automatically. This may be idiosyncratic compared to the other European member states, it is not uncommon in Scandinavia and it also happened in Denmark’s mobile telecommunications sector: “what is interesting about the Scandinavian development is the early product development and early marketing of mobile cellular services and the high penetration rates and product diffusion that were reached with very often near monopoly situations (i.e. without competition in service provision and without any strict regulation on the extent of vertical integration)” (Müller and Toker, 1994:197-8). As far as the Danish telecommunication company operated within the realm of the government the strong performance is consistent with the picture Page paints of a “professional, largely non-politicized civil service” (1995:278). The absence of strong competition on utility markets fits the picture of the Scandinavian “middle way” with its long rule of socialist parties and its welfare standards (Ugelvik Larsen and Ugelvik, 1997:215).

¹¹¹ European Commission (1999), *Fifth Report on the Implementation of the Telecommunications Regulatory Package* (COM(99)537), p. 1.

The UK is only weak in the area of implementation of European legislation, a low score that is solely the result of infringement proceedings started by the Commission. It is tempting to appeal to “euroscepticism” to explain this deficiency, but the UK is not generally weak on transposition (compare Weatherill and Beaumont, 1999:1067) so this would have to be a specialised version of euroscepticism limited to the field of telecommunications. A more likely explanation for the (legal) implementation difficulties is that the UK, as an early reformer, had to adapt existing legislation to later European legislation and that that transformation did not go smoothly.

Germany ranks 3, and has three weak areas. Its entry conditions are restrictive, it has

Table 2-23: The weak areas of the member states. Based on indicators with an assessment score of 1 and 2.

Member state	Low score on:	Rank
Denmark	<ul style="list-style-type: none"> • Market renewal score 	1
France	<ul style="list-style-type: none"> • Entry conditions • Pricing conditions • Privatisation of public utility corporation • Market renewal score 	4
Germany	<ul style="list-style-type: none"> • Productivity • Entry conditions • Privatisation of public utility corporation 	3
Spain	<ul style="list-style-type: none"> • Productivity • Access to PSTN • Market renewal score 	5
UK	<ul style="list-style-type: none"> • Innovation • Local call charges • National call charges • Implementation of core directives 	2

been slow in privatising its incumbent, and it has a low productivity. All this could be indicative of overprotection of a former state monopolist (*Deutsche Telekom*) or at least of a lack of sense of urgency to lift the protected status. The low productivity (measured in labour productivity) points at an overstaffed incumbent, an indication that there is still some political and trade union capture. The protection failed however, because the incumbent faces heavy competition.

France, ranking 4, is almost a showcase of incumbent protection. Entry is restricted (even through an obvious ploy of asking a contribution to R&D from new entrants), *France Télécom* functions smoothly as the national (and overstaffed, given the productivity figure) operator. The pricing system, with a large role for ministry and regulator, may not be devised to serve only the needs of *France Télécom*, that in practice it will work out that way will not be totally surprising, partly in view of the

cosy relations of the *énarques*, although the unproblematic development of prices (favourably for the consumer) and the high degree of innovation (France was the first member state to have a fully digitalised network) is a powerful reminder of the fact that market liberalisation is not the only way to safeguard public functions.

Spain, in spite of the air of reformism of the socialist governments, is not performing very strong. In spite or because of overseas expansion the home market remains dominated by the incumbent, and consumers face higher tariffs (although comparatively low compared to other member states).

The liberalisation of telecommunication can be regarded as the first successful liberalisation in the European Union, in spite of some national differences, and some member states' lower performance. It was however not the first liberalisation attempt: while the telecommunications policy was being launched, another liberalisation, that of the inherently more complex broadcasting sector, had already been going on for some years. This sector and to the EU policies affecting it are the topic of the next chapter.