

**Preprints of the
Max Planck Institute for
Research on Collective Goods
Bonn 2008/29**



**Competition Policy and
Sector-Specific Regulation
for Network Industries**

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MAX PLANCK SOCIETY



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July 2008

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Abstract

The paper discusses the respective roles of competition policy and sector-specific regulation for industries such as telecommunications, electricity, and gas, in which network infrastructures that are natural monopolies serve as essential facilities for anybody who wants to provide services in downstream markets. Whereas, in the past, such industries tended to be organized as state-owned or state-regulated vertically integrated monopolies, after a fundamental change of paradigm, appropriate governance nowadays is considered to involve downstream competition supported by a state-mandated access provision to the monopoly infrastructures. Following a brief sketch of the paradigm change, the paper enters into a systematic discussion of (i) the comparative advantages and disadvantages of the two policy regimes in enforcing access provision, (ii) the appropriate framework for drawing the line between regulated and unregulated parts of the industry, and (iii) a set of issues that arise when competition policy and to sector-specific regulation apply to a given industry at the same time. The discussion refers to (i) the German experience before 2005 when competition policy was used to regulate access in the energy sector, (ii) the European Directives of 2002, which rely on the concepts of “market” and “significant market power” to determine which parts of the industry should be subject to regulation, and (iii) the recent cases in the telecommunications and postal sectors in which European competition law was used to proscribe behaviour that had been accepted by national regulators.

Key Words: Network Industries, Competition Policy, Sector-Specific Regulation

JEL Classification: K21, K23, L 40, L50

1 Paper presented at the IESE Conference *50 Years of the Treaty*, Barcelona November 19 – 21, 2007. Parts of this paper have previously been presented at the EARIE Annual Conference in Berlin and the conference “Pros and Cons of Antitrust in Deregulated Markets” of the Swedish Competition Authority (Konkurrensverket) in 2004, as well as the CESifo Microeconomics Spring Conference in 2005. For helpful comments on previous versions, I am grateful to conference participants, as well as to Petros Alexiadis, Christoph Engel, Amelia Fletcher, Richard Gilbert, Felix Höffler, and Xavier Vives. I am also grateful to the German Monopolies Commission and its staff, whose work in 1998 – 2006 contributed greatly to my understanding of the issues.

1. Introduction

This paper discusses the respective roles of sector-specific regulation and competition policy in network industries. The term “network industries” refers to industries like telecommunications, electricity, gas, and rail transportation that involve important elements of a natural monopoly because the provision of services to customers presupposes the use of a fixed network infrastructure the costs of which are largely sunk.² If one wanted to be more precise, one would have to go into details of the scale economies and sunk costs in these infrastructure technologies. For instance, one might ask whether the postal sector is a network industry: Whereas there are significant scale effects in mail distribution, the main input here is labour; the costs of this input are not sunk, but involve significant learning-by-doing effects, which can foreclose competition in ways that are very similar to the foreclosure effects of sunk costs. In the analysis here, however, such details will be neglected. While acknowledging that the different network industries differ from each other in important and relevant ways, I will focus on questions that are common to all of them.

Over the past three decades, the organization of network industries in Europe and the United States has undergone significant changes.³ In the past, these industries had mostly been organized as vertically integrated monopolies. Management of the network and provision of services through the network were usually handled by the same institution. Natural monopolies in networks supported monopolies in services, in some instances by statutory regulation, in others by market foreclosure based on vertical integration. In Europe, most of the vertically integrated monopolies were held in state ownership, in the United States, most of them were in private ownership subject to sector-specific regulation. Prices charged to final customers were usually computed on some kind of cost-plus basis.⁴

By now, these industries have been thoroughly reorganized. The vertically integrated monopolies have come under strong pressure; in some cases, they have completely disappeared. The changes differ from industry to industry and from country to country, but a few common elements can be named. Developments have involved the *privatization* of companies that used to be in state ownership, the *liberalization* of entry into the provision of services on the basis of the networks, finally, also some *vertical disintegration* between the operation of the network and the provision of services.

The liberalization of entry into the provision of services has been accompanied by the introduction of statutory rules requiring network operators to open their networks at regulated prices to competing service providers. It would therefore be misleading to merely refer to the change as “deregulation”, as is sometimes done in invocations of the holy triad of “privatization, liberalization, and deregulation”. Whereas some regulations have been lifted, others have been newly imposed – the overall system of governance for network industries is simply different.

2 For a discussion of how precisely to define the notion of natural monopoly, see Baumol et al. (1982).

3 For overviews, see Newbery (2000), OECD (2001).

4 For an account of past approaches, see Viscusi et al. (2001).

1.1 Paradigm Changes for Network Industries

These developments have partly been driven by a change of paradigm for the governance of these industries. The vision of network industries run by vertically integrated monopolies has been replaced by a more complicated vision that involves monopolies upstream, in the organization and management of networks, and competition downstream, in the provision of services through the networks. The new vision is based on the recognition that natural-monopoly elements of the industry extend less far than had previously been thought. Whereas the networks themselves are natural monopolies in the technical sense of the word, the same cannot be said of the downstream activities that are based on the networks.

Characteristic examples are found in the telecommunications and electricity industries. In telecommunications, the local loop of the fixed-line network involves significant fixed costs. Because of these costs, a reduplication of the local loop would be highly wasteful; because these costs are sunk before any sales occur, they warrant the classification of the “last mile” as a natural monopoly. In contrast, the provision of telecommunications services through the network does not warrant this classification. The technology here exhibits hardly any scale economies and hardly any sunk costs. If access to the network can be guaranteed, there is nothing to prevent the functioning of competitive markets. Even for fixed lines, at a high level of the network hierarchy, i.e., for long-distance lines, one observes that, although costs are sunk, at relevant levels of use, duplication of long-distance lines is economical, and competition can be viable. Thus in Germany, there are by now more than a dozen companies that have their own long-distance networks as a basis for competing in long-distance service provision. Investment in these networks has been very active, extending remarkably far down the overall network hierarchy.⁵

In the electricity industry, transmission and distribution grids are natural monopolies. For a transmission grid, there can be only one system operator in charge of maintaining a constant level of tension. For distribution grids, the inefficiency involved in duplicating the last mile would be even greater than in telecommunications. In contrast, the production of electricity, its transportation through the transmission and distribution grids, and its sale to final users exhibit no technical features that would warrant their classification as natural monopolies.

Another paradigm change concerns the role of the networks themselves. In the telecommunications industry, the natural-monopoly features of the traditional fixed-line networks seem to be losing in importance as technical progress facilitates the development of alternative networks as a basis for service provision. Network monopolies are being replaced by systems of networks that are in competition with each other. The paradigmatic example is provided by mobile telecommunications where, in any given country, we see a handful of operators building up networks and acquiring customers in competition with each other. We also see competition between fixed-line and mobile telecommunications, or between fixed-line and cable networks. Telecommunications services through different kinds of networks may not be perfect substitutes, but,

5 For details, see Monopolkommission (2002, 2004a, 2006)

even so, the imperfect substitutes that are available can impose effective constraints on the behaviours of the presumed network monopolists.⁶ If so, we should be thinking about the industry as being in oligopolistic competition between network providers, rather than network monopolists holding sway over facilities that are essential to the provision of services downstream.

1.2 Changes of Public Policy towards Network Industries

The change in paradigm concerning the nature and implications of natural monopolies in network industries has also led to a change of public policy towards these industries. The change has been marked by (i) a tendency to privatize previously state-owned companies in network industries, (ii) the opening of network industries to competition, and (iii) a reorientation of regulatory oversight, away from the direct control of final output prices and towards the promotion of competition in the industry.

These changes in public policy were to some extent motivated by the observation that the vertically integrated state-owned monopolists of the past had been slow in making use of new technological opportunities and that this was endangering the competitiveness of firms relying on services from these infrastructure industries.⁷ To some extent, they were also promoted by finance ministers hoping to benefit from privatization proceeds or simple the cost reductions of downsizing under the threat of competition.⁸ Given that competition tends to erode profits, there is an inherent conflict between these two aims, but, as long as it was just a matter of reform rhetoric, the conflict was played down. In political practice though, this conflict has been and continues to be quite important.

Within the European Union, the European Commission has been a major promoter of change. Under the auspices of the Internal Market Programme, it has initiated a series of directives designed to eliminate statutory monopolies in the different network industries and to create EU-wide internal markets, at least at the level of downstream activities, which are not natural monopolies in themselves and merely use the network infrastructures as essential inputs.⁹ These

6 As of 2001, a study commissioned by the German Monopolies Commission showed that mobile networks imposed hardly any competitive pressure on fixed-line networks; the study also suggested that, for large-scale data communication, substitutability would never be perfect (Monopolkommission 2002, par. 88 – 98). Beginning in 2005, relations between mobile and fixed-line telecommunications markets have drastically changed so that, by now, the wholesale loss of customers to mobile networks is a major worry of the fixed-line incumbent (Monopolkommission 2006, par. 60 – 67).

7 Thus, Deutsche Bundespost in the nineteen-eighties was still insisting that anything but a wire-attached grey phone with a traditional dial would pose a risk to the safety of its network – at a time when wireless touch-tone phones were becoming the norm in the rest of the world.

8 Whereas the state-owned Deutsche Bundespost had been a perennial loss-maker, with losses in the mail system exceeding profits from telecommunications by far, today, after the separation from telecommunications and after privatization, the traditional mail activities of Deutsche Post are highly profitable, with profits-to-sales ratios in the letters segment lying significantly above ten percent in each of the past ten years.

9 References to directives are given at the end of the paper.

directives have been instrumental in imposing change on national legislation in the different member states.¹⁰

Whereas, in the past, the main objective of government oversight over network industries had been to restrain the use of market power to charge high prices for their outputs, under the new paradigm, regulatory control of final-output prices has moved into the background. The main task of regulatory institutions for network industries today is to promote the development of competition in these industries, namely competition in downstream markets and competition between networks where this is possible.

Competition in downstream markets is promoted by *access regulation* requiring the owner of the network to provide downstream service providers with the opportunity to use the network at whatever conditions are deemed to be reasonable. Thus the owner of the local loop in fixed-line telecommunications is mandated to provide interconnection to competing providers of long-distance services or even local services. He may even be mandated to provide a competitor with access to the copper wire leading into a customer's house so that the latter, rather than the incumbent himself, can provide the customer with basic service.

For the promotion of network competition, the role of access regulation is somewhat ambivalent: On the one hand, access regulation reduces barriers to entry by allowing competitors to enter the fray with some investment without having to duplicate the entire network of the incumbent monopolist. On the other hand, access regulation reduces incentives to build competing infrastructures. There is thus a tension between the promotion of competition in downstream activities through access regulation upstream and the promotion of competition in upstream activities themselves. To be sure, the promotion of competition upstream will also serve the promotion of competition downstream, if only because the competing infrastructures upstream provide a basis for downstream competition. However, the effects are likely to take longer than the effects of access regulation permitting downstream entry without upstream investments.

With all this enthusiasm about the promotion of competition, we still should note that, in the absence of competition among networks, there still is a problem of monopoly power to worry about. If the owner of an electricity distribution grid ceases all electricity generation on his own account and merely sells the transmission through his grid to outside generators, final customers have a choice between electricity generators, but this competition between generators does not reduce the grid owner's monopoly power. Thus the traditional task of sector-specific regulation,

10 Having the network industries come into the domain of European integration has vastly expanded the Commission's domain of activity. Sometimes the Commission gives the impression that it treats the factual, as opposed to legal, integration of markets as a policy objective in its own right, on a par with the objectives of competition policy. Thus, the Commission's DG Competition Report on Energy Sector Inquiry of 10 January 2007 has subheadings "Concentration", "Vertical Foreclosure", "Market Integration", "Transparency", "Price Issues", without any acknowledgement of the fact that market integration as such is a political aim that may have little to do with competition and with economic performance. The Commission's attitude to the proposed takeover of the Spanish energy provider Endesa by the German company E.ON, like its 2000 decision in the VEBA/VIAG merger case, gives the impression that, when a proposed merger holds a prospect of promoting market integration at the expense of competition, the competition concerns take second place.

namely to restrain the use of power of network monopolists without endangering the viability of the networks, has *not* become obsolete.

1.3 Sector-Specific Regulation versus Competition Policy: the Issues

The changes that have occurred raise questions about the appropriate statutory and institutional framework for regulatory oversight of the network industries. Under the *ancient régime*, regulatory oversight involved direct interventions designed to protect customers in final-output markets. This was the maintained purpose of statutory oversight over output prices under sector-specific regulation in the United States, as well as the various forms of government involvement in Europe. Under the new paradigm, competition itself is deemed to be the major force for customer protection. The notion that competition is the major force for customer protection is of course at the heart of traditional competition policy. One may therefore ask what is, or what should be, the relation between statutory oversight over the network industries and traditional competition policy.

At a very basic level, the question is whether anything more than traditional competition policy is needed. If we believe that customers end up being protected by competition itself, is it not enough to foster competition and, for this purpose, rely on the well-known tools of competition policy, antitrust policy and merger control? Couldn't we simply use the prohibition of exclusionary abuses under antitrust law in order to make sure that competitors in downstream markets are given access to upstream infrastructures? Or, to put the question differently, what are the comparative advantages and disadvantages of traditional competition policy as opposed to sector-specific regulation in dealing with the problem of natural monopoly in network infrastructures?

Further questions arise when a given industry is subject to sector-specific regulation and competition policy at the same time. There are two reasons why this can happen. First, different activities and different markets may be subject to different forms of statutory oversight. If we believe that the network infrastructure is a monopoly whose power needs to be effectively constrained and the downstream market is intensely competitive, we may want to subject the former to sector-specific regulation while leaving the latter to competition policy. In this case, the question is how one can ensure that public policy towards the industry as a whole is consistent. This is partly a legal question, concerning the consistency of norm interpretation across regimes, and partly an institutional question, concerning relations between the different institutions that are charged with the different forms of oversight.

Second, in the European Union, the *same* activities are sometimes subject to antitrust law *and* sector-specific regulation at the same time. This is due to the peculiar interaction of European Law and national law in the European Union. Sector-specific regulation, though narrowly circumscribed by European directives, is a matter of national law. At the level of national law, the existence of sector-specific regulation under a sector-specific law tends to preclude the application of general antitrust law. However, national laws cannot override the Treaty. Therefore, na-

tional laws concerning sector-specific regulation cannot preclude the application of Articles 81 and 82 EC to the very activities that are the subject of sector-specific regulation.¹¹

An example is provided by the Commission's assessing a fine of some 12 million euros against Deutsche Telekom on the grounds that the price which final consumers were charged for basic service on analogue lines was predatory, being hardly above, for some time even below, the (regulated) price that Deutsche Telekom was charging for access to the bare wire that a competitor would need to provide such service himself.¹² The very same price that the Commission treated as an exclusionary abuse under Article 82 EC had previously been approved by the German Regulatory Authority.

In such cases, where regulation and antitrust policy concern the same activities, the problem of consistency of public policy comes up with a vengeance. There also is an issue of competition between European and national, antitrust and regulatory authorities.¹³ In the *Deutsche Telekom* case, the European Commission argued that it was not actually contesting the Regulatory Authority's decision. If it had done so, it would have had to initiate Treaty infringement proceedings against Germany. To avoid this roundabout and lengthy way of dealing with the matter, the Commission observed that one of the prices that were considered to be abusive belonged to a basket of prices under a price-cap regime and argued that it was not contesting the price cap that the Regulatory Authority had imposed, but only the use that Deutsche Telekom had made of the leeway it had in setting individual prices under this price-cap.¹⁴ In fact, however, the Commission was overriding the Regulatory Authority's decision not to apply the prohibition of predatory pricing which existed under the German telecommunications law as under Article 82 EC.¹⁵

One might think that such instances of one institution overriding another are natural occurrences in a system involving a legal appeals process. However, this is not what we are seeing. Whereas a legal appeals process would have a single hierarchy of legal institutions consider the proper application of a single law to a given case, the coexistence of national sector-specific regulation and European antitrust law gives rise to *two* hierarchies of legal institutions applying two differ-

11 By contrast, the *Trinko* and *Crédit Suisse* decisions of the United States Supreme Court have made clear that, in the United States, the existence of sector-specific regulation rules out the application of the corresponding provisions of antitrust law.

12 References to decisions in individual cases are given at the end of the paper.

13 In this context, it is worth noting that, under Regulation 01/2003, European antitrust law can also be invoked by the national competition authority. Thus, in a more recent case involving *Deutsche Post*, the Federal Cartel Office proscribed an exclusionary abuse that the Regulatory Authority had refused to deal with. The German Postal Law, under which the Regulatory Authority was acting, had a wider specification than the Postal Directive permitted of the domain where the incumbent retained his statutory monopoly. Whereas the Treaty infringement proceedings initiated by the European Commission would have taken a few years, the Cartel Office's intervention led to an immediate termination of the abuse.

14 The Commission has used this line of argument again in the more recent *Telefonica* case. In April 2008, the Court of First Instance confirmed the validity of the argument in the *Deutsche Telekom* case.

15 The Regulatory Authority asserted that, under the price-cap regime, the anti-exclusionary and anti-discriminatory provisions of the law were to be applied to the basket, rather than the individual components of the basket. In fact, as was pointed out by the Federal Cartel Office as well as the Monopolies Commission, this assertion in fact was in conflict with the law, which stipulated a price-cap basket approach only for the anti-exploitative provisions of the law.

ent laws to the same aspects of a given case. This is where the consistency problem comes in with a vengeance.

These issues have a dynamic, as well as a static, dimension. Whereas the static dimension concerns the regulation and the functioning of the industry at any one point in time, the dynamic dimension concerns the development of the industry and its regulation over time. There are good reasons for seeing network industries as being in a state of transition. Whereas, at the time of market opening, these industries have highly concentrated market structures in all activities, one should expect that, as time goes on, the industry becomes more competitive, at least in downstream markets. In some industries, one may even expect to see competition between different networks. Such developments may call for a reassignment of the tasks of sector-specific regulation and of competition policy, taking some activities and some markets out of the domain of sector-specific regulation and putting them under the auspices of competition policy. The European Union's framework for regulating the telecommunications industry under the Telecommunications Directives of 2002 is actually based on this notion and calls for regular reviews of whether markets are sufficiently competitive for sector-specific regulation to be replaced by competition policy.

The notion of replacing sector-specific regulation by competition policy raises, first of all, the same questions as before, namely, what are the comparative advantages of the two regimes and what characteristics of markets and activities suggest that one or the other is more suitable? Also, if there is just a partial transition from one regime to the other, how are relations between the regulated parts and the unregulated parts, between the sector-specific regulator and the competition authority going to work out? In addition, the process of regime change raises a question of procedure: How is one to determine which markets and activities belong to one domain or the other? Are such regime changes to be irrevocable, or should we allow for the possibility of a yo-yo process, a market going from sector-specific regulation to a competition policy regime *and back*?

In the following, I will try to assess these different sets of issues one after the other. I begin with an assessment of the comparative advantages and disadvantages of the two policy regimes. Following that, I will discuss the dynamics of (partial) transition between a regime of sector-specific regulation and a competition policy regime. Finally, I will consider some of the issues that are raised by the possible coexistence of both regimes in the same industry. In much of the discussion, I will draw on observations from Germany, partly because this is the case with which I am most familiar and partly because this case is particularly instructive: Germany was the one country in the European Union that initially tried to have the energy sector subjected to competition policy only, without sector-specific regulation. The experiment failed, and the failure contains a lesson for the general issue of how to assess the respective roles of competition policy and sector-specific regulation in network industries.

2. Comparative Advantages and Disadvantages of Competition Policy and Sector-Specific Regulation

2.1 Art. 19, Section 4, Nr. 4 of the German Law Against Restraint of Competition

To set the scene for a more systematic discussion, I can do no better than to cite the German Law Against Restraint of Competition (Gesetz gegen Wettbewerbsbeschränkungen – GWB). Under Art. 19, Section 4, Nr. 4 of this law, introduced in 1998, it is an “abuse of dominance to deny access to a network or another essential infrastructure at an appropriate price to a downstream competitor without showing material reason for the denial.” This rule is based on the notion that access provision itself can be handled as a matter of competition policy. This notion underlay the German resistance to sector-specific regulation in the energy industry, which was only ended by the Energy Law of 2005, which implemented the European Directives of 2003. Promoters of the notion that access provision can be handled as a matter of competition policy pointed to the experience of the United States where the so-called *essential facilities doctrine* was said to have been an integral part of competition policy since the *Terminal Railroad* case of 1912.¹⁶

The Federal Cartel Office’s experiences with this clause have been miserable. The main reason is that, in the present context, the notion of “appropriate price” does not lend itself to court proceedings in which the burden of proof lies with the cartel office. The legal rule requires the owner of the infrastructure to give proof as to why it would be unconscionable to require him to provide others with access; for everything else, including the assessment of the access price, the burden of proof is with the cartel office. As far as I know, every injunction that the Federal Cartel Office has issued under this provision of the law has been contested in court, and the Federal Cartel Office has lost every single case, at least in the first instance, at the Court of Appeal (Oberlandesgericht – OLG) in Düsseldorf, in whose jurisdiction the Federal Cartel office is located.

Typical responses of this court have been:

- Mandating the granting of access without indicating what the price should be runs counter to the principle that mandates from an administrative authority should be sufficiently specific for the addressees to know what they have to do.¹⁷
- It is not enough to show that revenues on a distribution grid are significantly higher than the relevant measure of costs; the authority must indicate precisely which individual price it deems to be excessive.¹⁸

16 For a systematic discussion of the essential facilities doctrine and practice, see Lipsky and Sidak (1999), Gérardin and Sidak (2005).

17 This Judgment of the OLG Düsseldorf in the case *Fährhafen Puttgarden*, which concerned access to the port of Puttgarden, was subsequently voided by the Federal Supreme Court (Bundesgerichtshof – BGH). The Federal Supreme Court suggested that, at least in a first go, it was reasonable to expect the parties in question to bargain about the access price. However, if the bargaining did not lead to a satisfactory conclusion, the Federal Cartel Office might be required to set (and justify) the access price yet.

- It is not enough to show that, in a cost-plus system of price determination, some cost components are unduly inflated (like attribution of electricity marketing costs to the grid); the cartel office must also provide proof that no other cost components are understated so that the inflation of some components is outweighed.¹⁹

2.2 What Can Competition Policy Do?

The difficulties encountered by the Federal Cartel Office reflect the fact that the enforcement of access provision is *not* a suitable object for competition policy.²⁰ Competition policy consists, by and large, of a set of rules and measures which are designed to *forbid* certain types of behaviour. Competition policy is *not* designed to tell market participants what they should do. Cartel agreements are forbidden. Abuses of dominance are forbidden. Mergers that create or strengthen a dominant position, or, under the new Regulation, mergers that create a significant impediment to effective competition are forbidden. In none of these legal provisions is there any notion that the competition authority should tell companies what to do. Sometimes, the competition authorities do so anyway, e.g., when they approve a merger subject to certain obligations on the parties in question.²¹ However, these instances are taken to be the exception, sometimes even running counter to the very spirit of competition policy.

The stance of competition policy as a regime of prohibitions is a source of strength as well as weakness. It is a source of strength because the competition authority does not have to evaluate alternative course of actions that it might mandate to the companies. It is therefore not dependent on the information that would be needed for such an evaluation. Even more importantly, the stance of competition policy as a system of prohibitions plays a major role in the submission of competition policy to a rule of law and its insulation from at least the most blatant pressures of political wilfulness. Evaluations of alternative mandates for positive course of actions would involve significant elements of subjective judgement. They would hardly be adjudicable in a court of law – and would for that very reason provide a wonderful playground for interest politics.

18 This Judgment of the OLG Düsseldorf in the matter of grid pricing of *Stadtwerke Mainz*, a municipal electricity distributor, was also voided by the Federal Supreme Court, and the case was sent back to the OLG. However, even as it voided the lower court's judgement, the Federal Supreme Court stressed the need to allow for a significant margin of error in assessing excessive pricing. On the case, see Monopolkommission (2005), par. 563 – 577 (par. 165* in the English Summary)

19 This Judgment of the OLG Düsseldorf in the case of *TEAG*, a distribution company of E.ON, was not appealed. On the case, see Monopolkommission (2005), par. 558 – 562 (par. 164* in the English Summary).

20 The German Monopolies Commission argued this point even before the Federal Cartel Office had tried to interfere with the electricity companies' access pricing practices. Its 2002 report (Monopolkommission 2003, par. 726 – 869, 115* – 146* in the English Summary) provides a systematic treatment of the pros and cons of sector-specific regulation and competition policy for regulating network access and recommends a move to sector-specific regulation for the energy sectors. The discussion here follows the same line of argument. A similar treatment of these issues is provided by Newbery (2006).

21 Thus, in the German energy mergers of 2000 (*VEBA/VIAG* and *RWE/VEW*), the European Commission and the Federal Cartel Office enjoined the companies to increase cross-border interconnector capacities and to award these capacities by auctions that would be open to competitors. The insignificance of the market opening that was thereby achieved provides a serious warning against overconfidence in the effects of behavioural remedies.

From this perspective, Art. 19, Section 4, Nr. 4 of the German Law Against Restraint of Competition is an abuse of language. A rule that forbids the denial of access is not really a prohibition. The objective of this rule is to induce the granting of access, i.e. to prescribe a specific behaviour. It is hardly possible to mandate this behaviour without addressing the question of what are to be the price and the quality of access. The rulings of the Düsseldorf court that I have cited indicate some of the difficulties that this question poses for competition policy. Competition policy is not well placed to mandate a price and quality of access.

The US experience with the so-called essential facilities doctrine confirms this assessment. The term “essential facilities doctrine” refers to a collection of court decisions, beginning with *Terminal Railroad* in 1912. It is not clear whether this collection of court decisions amounts to a general principle along the lines of Art. 19, Section 4, Nr. 4 of the German Law Against Restraint of Competition.²² What is clear, however, is that in all cases, the courts have refrained from determining the prices at which access had to be granted. They were able to do so because in some cases, it was enough to ask for prices to be non-discriminatory, i.e., to grant access to the plaintiff on the same terms as everybody else; in others, they referred the plaintiffs to an existing sector-specific regulator who could deal with the problem.²³

In a regime of competition policy aiming at prohibitions of certain modes of behaviour, interventions of the competition authority as well as the judicial review of such interventions tend to occur piecemeal, focussing on one or several actions in isolation, without regard to their overall significance in the system of governance of the network and the network industry. However, as I shall explain below, it is hardly possible to deal appropriately with access prices in isolation, without considering their systemic implications, be it for other access prices or for market conditions downstream.

Competition policy interventions occur not only piecemeal; they also occur *ex post*, after the disputed behaviour has been implemented by the company and after the competition authority has had the time to obtain a grip on what is going on. Trying to get the requisite information is a daunting and time-consuming task of its own, the more so, because a network owner who wants to foreclose a downstream market has every incentive to delay the proceedings by withholding information and by exhausting all procedural possibilities that the legal system provides. As long as no final judgment has been pronounced, he can continue with the behaviour in question, presumably foreclosing the downstream markets to competition.

In the case of the German electricity industry, the Federal Cartel Office had begun to investigate grid access pricing in 2001. It issued the first injunctions in 2003. The Court of Appeals refused to grant immediate enforcement and in fact overturned the injunctions in 2004. The Court of Appeal’s decision in turn was overturned by the Federal Supreme Court in 2005, which sent the matter back to the Court of Appeal. By this time, the matter had become moot because the sys-

22 In *Trinko*, the Supreme Court remarked that, as yet, no such general principle had as yet been established, but, given the existence of sector-specific regulation, the matter did not need to be considered.

23 Lipsky and Sidak (1999), Monopolkommission (2003, par. 746 – 753).

tem of access provision under general competition policy had been replaced by a system of sector-specific regulation. Between 2001 and 2005, market structure had drastically changed because the large electricity providers had acquired more than two hundred participations in local and regional distributors, thereby assuring themselves of these distributors' business and foreclosing this business to outside generators. The willingness of local distributors to let themselves be taken into the folds of the large generators was partly motivated by a concern that high prices on transmission grids (including high prices for balancing energy, which were attributed to the grids) provided the large generators with significant margins so that they could threaten the local distributors' business with industrial clients by offering electricity at prices close to or even below short-run marginal costs.²⁴

One could argue that competition policy might be more powerful if the position of the competition authority was strengthened. Thus one might consider giving the authority the right to systematically collect information, e.g., on costs on an ongoing basis. One might also consider strengthening the authority's position in legal procedures, e.g., by changing the rules concerning the burden of proof. However, such changes would move the authority out of the traditional domain of competition policy and provide it with a kind of ongoing authority over the network in question, in short a kind of sector-specific regulation. Even though it might still be a competition authority for most of its activity, in practice, it would take on some roles of a sector-specific regulator.

2.3 The Monopoly Problem in Network Industries

As mentioned in the introduction, the traditional approach to statutory oversight of network monopolies had focused on customer protection through direct oversight of output prices and quality. The opening of downstream markets for competition provides hope that, at this level, such oversight can, at least eventually, be done away with.

However, the paradigm change that has occurred should not lead to a belief that the "old" problem of controlling monopoly power has altogether disappeared. In those industries where networks serve as essential facilities for downstream activities, the monopoly problem has merely been shifted to the treatment of these facilities themselves. In part, this is a problem of enforcing access to make sure that control over the network is not used to foreclose downstream competition. Even if access is granted freely, on a non-discriminatory basis, access prices can be used to earn monopoly rents. They can also be used to foreclose competition. The German electricity industry provides examples for both, local distributors using their distribution grids as a source of monopoly profits and large generators using access fees for transmission grids to foreclose other generators competing for industrial clients.

24 Newbery (2002), Becker (2004).

To prevent such uses of monopoly power, it is not enough to impose legal unbundling of network and to require access provision to be non-discriminatory. To be sure, with legal unbundling, high access prices that are charged on a non-discriminatory basis hit the mother company's downstream subsidiary just as they hit any competing company. However, from the perspective of the mother company, the access fee that the downstream subsidiary pays to the network subsidiary is simply an internal transfer price that has no effect on the mother company's aggregate profit.²⁵ The same high fee paid by a downstream competitor is a nice source of revenues for the corporation and of costs for the competitor.²⁶

At this point, it is useful to recall that the prevention of excessive prices is not one of the success stories of competition policy. In Europe, by contrast to the United States, excessive pricing is prohibited as an exploitative abuse under Article 82 EC (or under Art. 19, Section 4, Nr. 2 of the German Law Against Restraint of Competition). However, attempts to enforce this prohibition have by and large been unsuccessful. At the EU level, the Commission has only been successful in cases involving statutory monopolies; in *United Brands*, the European Court of Justice asked for evidence on the relation of prices and costs and imposed such a standard of proof that, subsequently, the Commission desisted from bringing such case. At the national level, in Germany, the *Librium/Valium* and *Valium II* cases of the seventies showed all the difficulties of assessing prices on the basis of price-cost comparisons when fixed-cost and common-cost components are large. In these drug cases, the court was unwilling to reject the companies' defense that high margins above variable costs were needed to cover the costs of research, including research all the research attempts that fail. Given this past experience, the outcomes of the access pricing cases mentioned above could not really have come as a surprise.

2.4 The Need for a Systemic Approach to Access Regulation

Fixed and common costs are important for network infrastructures just as for medical drugs. Networks typically involve significant fixed and common costs. Moreover, they typically serve as infrastructure for multiple services. Cost attribution therefore is central to all decisions about

25 The same argument applies to pricing for balancing energy. If the network subsidiary of an electricity company pays high prices for balancing energy and the balancing energy is produced by another subsidiary of the same company, the price for balancing energy is just an internal transfer price. According to an investigation of the Federal Cartel Office in 2003/2004, for each of the four transmission grids, above 80 % of the balancing energy was supplied by a sister company of the grid operator; the difference between the price for balancing energy and the ordinary spot price was attributed to the grid and incorporated into grid transmission fees. Markets for balancing energy were, in principle competitive, but strict "prequalification requirements" imposed by the network operators made entry of outsiders all but impossible., see Monopolkommission (2005), par. 1196 – 1206 (par. 254* - 255* in the English summary).

26 This problem would be eliminated or at least reduced if, as proposed by the European Commission, there was ownership unbundling, i.e. vertical disintegration, as well as legal unbundling. However, until now, ownership unbundling has been politically infeasible in large parts of the European Union. Höffler and Kranz (2007) argue that ownership unbundling would come at a cost in terms of insufficient co-ordination of investments in generation and in transmission; they suggest that it might be sufficient to have legal unbundling with incentives of network managers tied to the profits of the network company, rather than the mother company.

network pricing. Thus, the problem of assessing access prices for these infrastructures is at least as difficult as the problem of assessing drug prices.

The problem of cost attribution is inherently a systemic one. From management science and from economics, we know that there is no one method of attribution which can be considered to be unambiguously “appropriate”, be it as a management tool or as a criterion of welfare economics. From the perspective of welfare economics, some version of Ramsey pricing seems desirable, taking account of differences in demand elasticities in order to minimize the welfare impact of price distortions. However, in practice, Ramsey pricing is problematic because it requires a lot of information and is vulnerable to sabotage from the company in question. In practice, therefore, one tends to work with less informationally demanding, more robust procedures such as cost-plus regulation, efficient-component pricing, price cap regulation with different baskets, or benchmarking regulation. The different approaches have different advantages and disadvantages, which can only be assessed in terms of their implications for the entire system regulated prices.²⁷

Given that the problem of cost attribution is central to network pricing and given that this problem has no one “appropriate” solution, judicial review of any one individual price will hinge on who has authority to choose the cost attribution method. Under the competition policy tradition assigning the burden of proof to the cartel authority, the authority will find it all but impossible to prevent the use of access pricing as a device to foreclose competition in downstream markets.

Even if one approach is accepted as unambiguously “appropriate”, within this approach, any one price will have to be assessed as part of a *system* of prices. To determine whether regulated prices permit the network owner to recover his costs or whether these prices provide proper incentives for network investments, it is not enough to look at a single price in isolation; one must consider the whole system of prices.

Other aspects of access regulation also raise systemic concerns. At a very fundamental level, there is a tradeoff between the promotion of competition in downstream activities through access regulation upstream and the promotion of competition in upstream activities themselves. The stricter the access regulation is, the smaller are companies’ incentives to invest upstream on their own. Assessments of this tradeoff are likely to differ across industries, with more weight given to the promotion of upstream competition in telecommunications and less weight in the electricity sector.

Further, for at least some industries, the picture of a well defined essential facility upstream and a well defined set of services downstream is misleading because it neglects the complexity of the vertical chain of value creation. In these industries, a key question concerns the definition of bottlenecks to which access needs to be granted. In practice, this question of is not at all easy to answer, and different answers tend to involve conflicting visions of where the industry is going.

27 For overviews, see Armstrong (2001), Laffont and Tirole (2000), Armstrong and Sappington (2005).

As an example, consider interconnection-based network access versus pure resale models in telecommunications. Interconnection means that access is granted only to a pre-defined part of the infrastructure and that the entrant has to invest into an own infrastructure (though that may be slim). With pure resale, the entrant could offer the service to customers by renting everything from the incumbent. A model of interconnection-based access is based on the notion that competitive infrastructure investments are beneficial. A model of pure resale is based on the notion that competition in services is to be preferred, either because competitive infrastructure investments are unlikely to be forthcoming or because such investments involves duplication of existing infrastructures and are therefore wasteful.

Thus, in the German discussion about the introduction of mandatory access regulation to permit resale, opposition has come not only from Deutsche Telekom, but also from those companies who had entered the market on the basis of the first model, getting access to the bare wire from Deutsche Telekom and providing basic service to customers. These companies see resale regulation as a threat to their own investments. The important point is that, in this case, one model of competition in downstream markets is at odds with another. Whoever intervenes has to take a choice and should be aware of this.²⁸

2.5 Is Sector-Specific Regulation Preferable?

Given the observation that access regulation requires a systemic approach and competition policy intervenes piecemeal, one might be tempted to see sector-specific regulation as the appropriate answer to all the challenges that have been formulated in the preceding subsections. Sector-specific regulation certainly is able to articulate an intervention policy in systemic terms. With a suitable basis in the underlying legal norms, it should also be able to overcome the procedural difficulties that arise in the framework of competition policy, e.g., determine basic principles for cost accounting and cost attribution, collect the requisite information on an ongoing basis, intervene in a timely manner, with little delay from court proceedings.

However, before one jumps to the conclusion that every network or other essential facility should be subject to sector-specific regulation, one should take a step back and reflect on possible drawbacks. Objections must be raised at three levels. First, it is not clear that a regulatory authority is as effective in practice as these theoretical reflections would seem to suggest. For instance, collecting information on an ongoing basis may be better than doing so *ad hoc*, when a problem is perceived, and one first has to fight before gets the information. However, even if the information is collected on an ongoing basis, the company in question may have plenty of scope to manipulate it. The regulatory authority may also have a hard time processing the information (especially if it is understaffed).

28 For a discussion of tradeoffs that are involved and of the implications of these tradeoffs for competition policy and regulation, see Cave and Crowther (2004).

Second, experience suggests that sector-specific regulation is more likely to be captured than competition policy. The examples I gave in the introduction about the relation between Deutsche Telekom and Deutsche Post, the Regulatory Authority, and the competition authorities over the past decade probably have to do with the fact that the German government is a major shareholder in both companies, and, even though the Regulatory Authority is in the domain of the economics, rather than finance ministry, it is more subject to political pressure from the government than the Federal Cartel Office.

There are two reasons for the difference. First, competition policy concerns all industries alike. In any one case, therefore, the competition authority can invoke equal-treatment arguments – and, one the force of these arguments, mobilize allies – to resist political pressure. Second, interventions of a sector-specific regulator cut to the core of the company’s business and are of central importance to its profit line. With so much more at stake, the company itself has stronger incentives to try and mobilize pressure against the regulator.

Third and perhaps most importantly, the very strength of sector-specific regulation is also its weakness. The ability to intervene and mandate a certain course of action involves the risk that this may just be the wrong thing to do. Where competition policy just prohibits companies from doing something, sector-specific regulation imposes a course of action upon them. A caricature of what this could mean was provided by the California electricity crisis in 2000 where the incompatibility between the development of market-determined wholesale prices upstream and regulated retail prices downstream caused the distributors to become insolvent and in the process imposed blackouts on households as well as firms.

Whereas the deleterious effect of regulation in the California crisis was easy to recognize and should have been easy to correct, many issues are more subtle so that it is not easy to recognize and correct errors, let alone to do so in a timely fashion. What investment policies are the network companies going to follow under sector-specific regulation? What cost of capital is the regulator assessing? How is risk taken into account in assessing capital costs? What about regulatory risk, e.g., the risk that, under a standard based on the costs of efficient service provision, technical change leads to a reduction of regulated access prices for a long-lived facility that does not yet embody tomorrow’s technology?

For each of these questions, we may feel that, in a given case, the regulator should be able to come up with a reasonable answer. However, in thinking along such lines, we leave the paradigm of the market system being wiser than any one participant or any one regulator. There may be good reasons for this; in some network industries, the monopoly problem may be important enough to warrant regulatory intervention. However, we need to be aware that this very intervention blunts the market processes. The main justification for intervening anyway is probably that incumbent monopolists in such industries themselves do not leave much room for market processes, and that the imposition of access regulation upstream may induce some market dynamics downstream. However, this requires an assessment that the benefits of invigorating competition in downstream markets outweigh the costs of statutory intervention upstream.

2.6 An Example

The electricity sector provides a case in point. The increases in electricity prices since 2005 have raised a lot of popular discontent. This discontent has fuelled activities of politicians and authorities alike, from the European Commission's Sector Enquiry and subsequent proposals for structural intervention to the German Government's proposal to provide the Federal Cartel Office with increased powers to prosecute exploitative abuses in the energy sector. Yet, there is little empirical evidence that electricity pricing actually does involve an exploitative abuse, i.e., that the competition authorities' inability to intervene is based on a lack of powers, rather than a lack of a case. An empirical study of London Economics (2007) for the European Commission has found that, in Germany in 2003 – 2005, wholesale electricity prices involved margins of some 27 % above marginal costs (more precisely, the average variable costs of the marginal power plant). However, such a number is meaningless unless they are put into some relation to fixed costs.

London Economics did provide a comparison to fixed costs, but the results of this comparison seem highly dependent on the specification they chose. They argued that investment in a new CCGT power plant with a generating capacity of 400 MW and a lifetime of fifteen years would be worthwhile if surpluses above variable costs came to some 67000 euros per year. Under marginal cost pricing, the four large suppliers in Germany would have earned some 76000 euros per MW of capacity on average per year in 2003 – 2005, some 13 % above the amount requires to provide for the hypothetical new power plant. Prices above marginal costs could therefore be deemed to be excessive.

However, this assessment depends on the rate of return on capital that is used. If instead of the rate of 6.5 % used by London Economics, one were to use a rate of 10 % or higher, as is common, e.g., in telecommunications regulation, the required surplus per year would rise from 67000 to over 80000 euros, which would not have been covered under marginal cost pricing as assessed by London Economics.

More importantly, I have doubts whether it makes sense to compare the surplus above variable costs that is required for an investment in the marginal power plant to be worthwhile with the average surplus above variable costs that is achieved on *all* power plants. The latter presumably is bloated by surpluses from water and nuclear energy, which have very low, sometimes even negative, variable costs, and rather higher fixed costs. For a proper assessment of the surpluses that were earned, one would need to assess investment costs for the entire portfolio of power plants. Implicitly, this also raises the question of what is an appropriate portfolio of power plants.

At this point, however, we are in the middle of a systemic problem. The different types of power plants differ in the degree of flexibility with which they can be run up or down in response to foreseen and unforeseen changes in demand. Some power plants will always be running, others only at times of peak demand. Any assessment of the costs of the portfolio of power plants has to take these differences into account. Any such assessment also has to take into account that residual supply elasticities are lower, and market power is higher, at peak times when all available

capacity is being used than at off-peak times when some excess capacity is available. Surpluses of revenues over variable costs are therefore easier to obtain at peak times than at off-peak times, and most likely the surpluses that are earned at peak times make an above-average contribution to covering capital costs, for the power plants that provide base-load electricity as well as the power plants that provide peak-load electricity.²⁹

Given the systemic character of the problem, competition policy is not well-placed to establish whether electricity pricing is excessive or not. Most likely, the attempt by a competition authority to establish an exploitative abuse will fail even if such an abuse is there. However, before one jumps to the conclusion that one needs sector-specific regulation in order to control electricity prices, one must take account of the risks inherent in such control. As indicated, the assessment of electricity prices is a delicate matter which can be highly sensitive to the details of the analysis that one undertakes. A regulatory authority is no more immune to error than a competition authority; it only has more powers to impose its view of the matter through regulation. However, if it errs in the direction of restraining prices too much, this affects investment incentives. Given that environmental concerns and the coming exhaustion of important primary-energy sources call for innovations and new investments, the costs of such errors can be quite substantial. It may therefore be preferable to leave the generation and the sale of electricity in the domain of competition policy, rather than subjecting them to sector-specific regulation; the weakening of present-day consumer protection that is thereby entailed is probably less important than the risk of blunting innovation and investment incentives in electricity production.

The very same concern also calls for ensuring that electricity markets are open to competition by outsiders. If we are searching for new and improved technologies to generate electricity from available primary energy sources, we should not be satisfied to leave this search just to the former monopolists. The dictum of Sir John Hicks according to which the nicest monopoly rent is a quiet life suggests that monopolists who are not threatened by competition are not likely to be very active innovators. In this context, one should recall the experience of the United States where the market opening provided by the Public Utilities Regulatory Policy Act (PURPA) of 1978 induced a remarkable amount of entry by new firms with new techniques for electricity generation and showed that the incumbent monopolists had missed the train on technical progress. There may also be a risk that large incumbents, in particular, the former statutory monopolists, may have a bias towards techniques which reinforce their market position, in political markets as well as electricity markets, i.e., techniques where minimum efficient scale is large so that they can claim that generation is a natural monopoly after all.

Given the importance of searching for new and improved technologies for electricity generation and given the notion that this search should not just be left to the former monopolists, I infer that it is crucial to have a well functioning access regime for electricity grids. Past experience with

29 Attempts to infer power abuses from the mere observation that margins are highest when residual supply elasticities are lowest are therefore futile. Nevertheless, this observation is presented by London Economics (2007) and by Hirschhausen et al. (2007) as if it permitted an inference concerning the abusiveness of electricity pricing.

different approaches suggests that this calls for sector-specific regulation of access provision. The very same concern which makes for caution with respect to a sector-specific regulation of electricity prices thus also militates for the imposition of sector-specific regulation of grid access as a precondition for effective competition in electricity generation and sales.

3. How Should the Line Be Drawn Between the Regulated and Unregulated Parts of a Network Industry?

3.1 Naïve versus Sophisticated Approaches

Given the assessment that there are certain activities where competition policy is unlikely to be effective on an ongoing basis and where the benefits of sector-specific regulation, in particular, for enhancing competition in downstream markets, are deemed to outweigh the costs, the question arises how large the domain of sector-specific regulation should be and how the relation of regulated and unregulated domains, of sector-specific regulation and competition policy are to be organized. In some sectors, this question has been approached somewhat naively. Thus, the European Electricity and Gas Directives provide for a sector-specific regulation of the networks, but *not* for a sector-specific regulation of production or trading of electricity and gas. Presumably, the distinction was based on the view that networks continue to be natural monopolies, and network access is a precondition for competition in downstream markets, but, once this precondition is met, competition will set off on its own.

By contrast, the European Telecommunications Directives of 2002 introduce a more sophisticated system for determining which activities are subject to sector-specific regulation and which ones are not. Activities are classified by “markets“. The basic principle is that sector-specific regulation should be imposed in those markets and *only* in those markets of the industry where workable competition does not exist and is unlikely to arise in the near future and that in all other markets the industry should be subject to general competition rules.

To determine which markets are to be subjected to sector-specific regulation, the Telecommunications Directives specify a two-step procedure. In a first step, called “market definition“, the regulatory authority, following a recommendation from the European Commission, draws up a list of markets to be analysed. In a second step, called “market analysis“, the regulatory authority, in consultation with the European Commission and with the other regulatory authorities in the EU, determines for each market on the list whether there is “effective competition” in this market. Effective competition is said to be present if and only if no firm in the market has “significant market power“. The wording of the legal norms and of the Commission’s guidelines suggests that “significant market power” is similar to, but – in view of the different purposes of the different legal norms – not quite the same as “dominance” in Art. 82 EC.

The sophisticated approach differs from the naïve approach in two respects. First, the division of the industry into the parts that are subject to sector-specific regulation and the parts that are sub-

ject to general competition policy is not fixed in the law, but is left to be decided by the authorities in a well-specified procedure, presumably subject to judicial review. Second, the division of the industry into the parts that are subject to sector-specific regulation and the parts that are subject to general competition policy is based on considerations of competition and market power rather than the distinction between network infrastructures and downstream activities.

This means, that, in principle, one can have downstream activities that are subject to sector-specific regulation, and one can have network infrastructures that are partly or entirely *not* subject to sector-specific regulation. An example for the former is given by final consumer prices for basic fixed-line analogue or ISDN service. An example for the latter could be the markets for rentals of long-distance fixed lines at the highest level of the geographic network hierarchy in Germany where a significant number of alternative suppliers have built their own infrastructures and could in principle offer alternatives to the regulated offerings of Deutsche Telekom.³⁰

I have serious doubts whether the sophisticated approach for determining which parts of the industry should be regulated is really superior to the naïve approach. In particular, I am not convinced that the “market” is an appropriate unit of analysis for this question. Recognition of the difficulties that are involved in fact induces the practitioners to use the term “market” in a somewhat different sense from the way it is used in competition policy. I consider this differentiation of legal terminology according to which legal norm is being applied to be problematic, the more so, since the Telecommunications Directives and national Telecommunications Laws themselves contain explicit references to origins of the terms in competition law. In the following, I will substantiate this criticism.

3.2 Is the “Market” the Proper Unit of Reference? The Problem of “Cross-Border” Systemic Effects

The above discussion of the comparative advantages and disadvantages of sector-specific regulation and competition policy named systemic interdependence of different activities as a major reason for failures of competition policy, the point being that competition policy intervention tends to be piecemeal and *ad hoc*, with little scope for embedding the analysis of the presumed abuse in a wider systemic context. Unfortunately, such concerns play no role on the sophisticated approach of the Telecommunications Directives. Under this approach, therefore, we must reckon with the possibility that, because of systemic interdependence, different activities should be analysed jointly but are in fact in different domains, one in the domain of competition policy, the other in the domain of sector-specific regulation.

As an example, consider the treatment of termination charges in mobile telephony. The European Commission has named network specific termination services as one of the set of markets to be analysed, much against the resistance of the industry and some national governments who would

30 Monopolkommission (2004, par. 74, 2006, par. 72).

have preferred termination services of all networks to be put in one “market”. Given the definition of network specific markets for termination services, the outcome of “market analysis” is a foregone conclusion, for obviously, every network operator is dominant for access provision in his own network. The question then becomes what regulation the network operators will be subjected to. The recurrence of complaints about termination charges suggests that some regulation of these charges might be called for.

However, by what standard should regulated termination charges be set? The mobile network operators claim that they need high termination charges in order to finance their overall networks. The problem of attributing fixed and common costs here cuts across the boundary between regulated and unregulated activities. To assess the appropriateness of proposed termination charges, the regulator needs to have some notion of what is – or what should be – the contributions of unregulated, competitive activities to covering fixed and common costs. However, how would he get the information that he would need to assess these contributions? Wouldn’t the very imposition of an information requirement for these activities contradict their status as being “unregulated”?

In mobile telephony, markets for basic service and for the initiation of communications are, for the most part, highly competitive and have therefore not been subjected to sector-specific regulation. Before the European Directives of 2002 were implemented, this unregulated regime was also applied to call terminations. Member State governments saw mobile telecommunications as a success story with which they did not want to interfere. The substantive reason given was that this sector was engaged in intense *systems competition*, which made it unnecessary to worry about each individual component of these systems.

As a matter of economics, it is not clear that the systems competition argument carries very far. The person who calls the client of a mobile phone company does not generally profit from that particular company’s offerings himself. Moreover, if he urgently needs to reach that person, he has no way of substituting this company’s termination service by some other service. The companies argue that their exploiting the market power which this structure gives them is actually welfare-enhancing because it corresponds to the Ramsey-Boiteux rule of having margins that are highest where demand elasticities are lowest, but in these arguments, they forget that the Ramsey-Boiteux rule applies to market demands, not the demands faced by any one company.³¹ As an assessment of distortions induced by market power, the Commission’s judgment therefore seems to be correct.³²

However, we should appreciate that there are many other markets in which firms have market power, which we do not subject to sector-specific regulation. Airlines have extraordinary market power on certain routes from or to airports where they hold rights to most of the slots. Even so, this is not deemed to be a reason for subjecting them to sector-specific regulation. Presumably,

31 Equivalently, the Ramsey-Boiteux analysis requires some taking account of the business which very low base prices to one’s own customers take away from one’s competitors (Höfler 2006).

32 For a systematic discussion, see Monopolkommission (2004, par. 210 – 223).

the argument is that, if we wanted to imposed sector-specific regulation in every market in which a firm has and uses market power, then we should find ourselves with a bigger job than we handle. There are just too many such markets and too many such firms.

In the given example, the main objection is that, because of the systemic interdependence, it is impossible to do the regulatory job properly if terminations alone are subjected to it. One should subject either the entire spectrum of markets to it or none. Given the overall degree of satisfaction with the performance of this industry, the former seems hardly appropriate. I therefore wonder whether it would not be better to forego a sector-specific regulation of mobile telecommunications altogether. On the one hand, this means accepting monopoly pricing and ensuing distortions for terminations; on the other hand it avoids getting into a mode where regulation is imposed, but cannot really be handled properly.

The very same logic suggests that, perhaps, it is not so sensible to exempt the markets for rentals of fixed-line capacity at the highest level of the geographic network hierarchy from sector-specific regulation. Here, too, the existence of significant common costs of different parts of the fixed-line network throws doubt on the workability of piecemeal exemptions.

The overriding message of these remarks is *not* that we should have more regulation or less regulation than the Telecommunications Directives are providing for. The message is, rather, that the imposition of sector-specific regulation should be conditioned on system effects, in particular, in relation to the networks, rather than market power. If we are willing to admit the existence and exploitation of market power in a standard competition policy regime for other industries, then, for network industries, the mere existence of market power in part of the industry is not a good reason for imposing regulation. If, instead, we are worried about systemic aspects of the industry, e.g., with respect to cost attribution for services important for access provision, then we should focus on those systemic aspects, rather than market power. In this case, the mere absence of market power in a given market may not be a good reason for exempting the activity in question from regulation.

3.3 Is the “Market” the Proper Unit of Reference? The Problem of Market Definition

Scepticism about the use of the market as the proper unit of reference is also warranted on procedural grounds. Experiences that we have had with the “old” Telecommunications Law in Germany, in 1998 – 2004, provide a few lessons. Under the old Telecommunications Law, the imposition of various kinds of sector-specific regulation was conditioned on the company’s being dominant in the sense of competition law. This is somewhat akin to the prevailing European framework condition regulation on the company’ being found to have significant market power. Under this regime, for example, Deutsche Telekom was subject to an *ex ante* regulation of final-customer prices in those markets where it was held to be dominant.

At some point, the company tried to use the dominance requirement as a lever to get out of regulation. As one might expect, this gave rise to the usual game of what is the relevant market. However, in contrast to what we would expect from merger control cases, they went for narrow rather than wide definitions of relevant markets. Given the weight of incumbency, a wide definition would easily have supported a finding of dominance. However, they could make a case that such a finding was not justified for a suitably picked narrowly defined “market”. So they first applied for deregulation in the market for foreign calls from Germany to Turkey, from Germany to Denmark, and from Germany to the US. Subsequently, they proposed to look at the market for business calls between Frankfurt and Berlin and the market for foreign calls to Uzbekistan.

In dealing with these applications, the regulatory authority initially accepted Deutsche Telekom’s market definitions and then, on the basis of further deregulated the phone calls to Turkey, but not to Denmark and the US. Subsequently, however, they rejected Deutsche Telekom’s market definitions for business calls between Frankfurt and Berlin and for calls to Uzbekistan. In the latter decision, they argued that any provider of telecommunications services to some foreign country was a potential provider of telecommunications services to any other foreign country as well, so on the basis of considering potential competition, all foreign calls should be treated as belonging to the same market.

The regulatory authority’s first reaction to Deutsche Telekom’s applications reflected a straightforward application of the competition policy practice of market definition to the matter on hand. Their subsequent change of stance was motivated, first, by their coming to understand the difficulties that the deregulation of excessively differentiated “markets” would pose for the viability of the system, and second, by their realizing that the need to go through these applications market by market, doing a proper analysis of dominance for each “market”, would impose an enormous administrative cost.

These experiences are relevant for the handling of “market analysis” under the new European regime. To be sure, “market analyses” are preceded by the stage of “market definition”. However, the term “market definition” in telecommunications law does not mean the same thing as in general competition law. Whereas in general competition law, the term “market definition” refers to the specification of the “market” that is relevant for demand, supply and pricing decisions of the various participants, the term “market definition” in telecommunications law is much broader. Thus, geographic aspects of market definition play no role in the recommendations of the European Commission; yet they are a key element in competition analysis. Moreover, the “markets” that the European Commission has recommended for “market definition” represent *aggregates* of market in the competition policy sense. For instance, in basic service, the Commission’s Recommendation lumps analogue, ISDN and ISDN multiplex services all together under the category of “Access to the public telephone network at a fixed location for residential customers”. Similarly, the German Regulatory Authority continues to follow its previous “anti-Uzbekistan” line and does not differentiate by geographic origin or destination.

From a policy perspective, I consider this way of proceeding to be reasonable as a way of dealing with the fact that, as explained in the preceding subsection, a decision about regulation market by market in the competition policy sense of the term is unlikely to yield satisfactory results. Given the systemic concerns that underlie the use of sector-specific regulation in the first place, I am sceptical about narrow market definitions in this context. Apart from the administrative burdens involved in doing separate analyses for lots of narrowly defined “markets”, I see the problem that the regulatory authority or the competition authority will find it hard to deal with cost attribution problems and cross-subsidization problems if regulation is conditioned on dominance in narrowly defined markets. If we decide to have calls to Uzbekistan and calls to Denmark in different regimes when both types of calls require some of the same infrastructures, we may be undermining the viability of either regime.

I also see an issue of stability of the regulatory environment if “yoyo” effects in narrowly defined markets lead to repeated changes in the assessment of significant market power. Because of these concerns, the German Monopolies Commission, which initially had recommended applying the concept of market dominance in exactly the same way as under competition law, had subsequently recommended that the regulatory authority make extensive use of the “prognostic element” in its assessments of dominance and that it take account of relations to “neighbouring markets”.³³

However, from a legal perspective, such recommendations are problematic. After all, the procedures used in market analysis will be subject to court control. If the legal norms use competition law terminology, why should market participants – or the courts! – accept any use of this terminology which deviates from traditional procedures? In this respect, the European framework is perhaps more flexible than the old German law; after all, relations to neighbouring markets are explicitly mentioned as a matter for consideration. Moreover, the Commission’s guidelines stress that “significant market power” is similar to, but in view of the different context, not quite the same as “market dominance”. Whatever the regulators and the courts are going to make of this, I feel uneasy on account of the fact that, at best, we are subject to significant legal uncertainty. At worst, we may end up with a dysfunctional scheme for determining the incidence of regulation.

The broadness of “market definitions” recommended by the Commission and implemented by the national regulators should be seen as evidence that the “market” in the competition policy sense is not a natural unit of reference for determining the incidence of sector-specific regulation. It simply pays too little attention to systemic structures and their implications for the viability of competition policy. For legal hygiene, however, it would be better, if the legal norm was geared to the systemic effects, rather than the presence or absence of significant market power, and the procedure for “market definition” and “market analysis” did not involve any departure from standard competition policy procedures.

33 Monopolkommission (2002), par. 140 – 159, in particular, par. 153.

From the experience of competition policy, we know that the precise definition of the market always involves a certain element of arbitrariness. If products are differentiated, the notion of relevant market itself is problematic because boundaries between sub-markets are hardly discernible. In competition policy, this arbitrariness of market definition makes for the livelihood of lawyers and economic experts, with some haphazardness of results. However, these cases typically involve a once-for-all decision. A merger is prohibited or allowed, an abuse of dominance is proscribed or not, and then, the case is closed. In contrast, in the telecommunications sector, market definitions are the basis for investigating significant market power, the finding of which is the basis for instituting an *ongoing system* of regulation. Here the arbitrariness of precise definitions and the haphazardness of legal outcomes poses a more serious problem. Criteria that yield haphazard outcomes are not a good basis for institutional arrangements that provide the requisite combination of continuity, legal certainty, and substantive appropriateness.

3.4 Is the “Market” the Proper Unit of Reference? “Market Definition” as a Political Act

Given the preceding criticisms, the naïve approach practised in the energy sector begins to look better. If networks are subjected to regulation and downstream activities are not, one has a clear distinction along systemic lines, which may not be the same as a distinction according to market power. Something like this naive approach was in fact suggested by the German Monopolies Commission, which, under the “old” telecommunications law of 1996, had reported once every two years on the development of competition in telecommunications and to make recommendations on whether to change the list of markets in the law. The Monopolies Commission recommended considering functionally separate groups of relatively homogenous markets with a view to deregulating all or none of them, regardless of concerns about dominance. Thus in 2003 and 2005, it recommended taking *all* long-distance and foreign voice telecommunications out of the domain of sector-specific regulation even though in some of markets that were involved, Deutsche Telekom still held a clearly dominant position. Neglect of such dominance was justified by the observation that many markets with dominant firms are subject to competition policy without any idea for sector-specific regulation, i.e. that dominance cannot be the appropriate distinguishing criterion.

Such assessments are at bottom political in nature. The Monopolies Commission’s recommendations under the old telecommunications law in fact were addressed to the German Parliament, as recommendations to change the law. I believe that the step of “market definition” under the European Telecommunications Directives is similarly political in nature. The Directives and national laws merely dress it up as an administrative act which implements the law and which is itself subject to judicial review.

To be sure, the legal norms list substantive criteria for the inclusion of a market in the list that is drawn up under the heading of “market definition”. However, these criteria are soft and do not lend themselves to judicial review. More importantly, these criteria cannot be seriously applied

unless one has already done the market analysis, which, however, only comes afterwards. The list of markets drawn up under the heading of market definition should include those markets which exhibit significant and durable structural or legal barriers to entry, which do not exhibit a tendency towards a development of effective competition, even in the long run, and for which competition policy is insufficient to counteract the market failures that result from market power. I fail to see how these criteria can be reliably assessed when the market analysis has not yet been done. Moreover, the third criterion, whether competition policy is deemed to be able to counteract market failures or not, involves subjective judgment and is hardly compatible with a serious judicial review of administrative decisions.

I would prefer it if the political nature of the first step of the procedure was made more explicit, perhaps under a different name, without any pretense that this is comparable to what competition economists understand by “market definition”. I would also prefer it if the detailed analysis of the second step paid more attention to the systemic aspects of the problem because these aspects are central to the distinction between the two policy modes. Bringing in such concerns at a later stage, by reinterpreting the terms that are used in the legal norms to make them fit the problem seems inappropriate. Such reinterpretations of terms may provide a pragmatic way to deal with the inappropriateness of the approach. However, it undermines the status of competition policy and sector-specific regulation as being carried out under a rule of law. It also reduces transparency and immunizes the authorities from political and judicial control. It is perhaps not a coincidence that, in the implementation of the European Telecommunications Directives, there have been hardly any instances of deregulation. In what was ostensibly introduced as a system for organizing the transition from sector-specific regulation to competition policy wherever possible, we have mainly seen the imposition of additional sector-specific regulation.

4. On the Co-Existence of Competition Policy and Sector-Specific Regulation

In this final section of the paper, I will discuss some issues that arise from the simultaneous application of competition policy and sector-specific regulation in the same industry. As discussed in the introduction, there are several dimensions to this simultaneity, substantive, legal, institutional. I first consider some substantive issues and will then move on to a discussion of legal and institutional arrangements.

4.1 Substantive Issues

Two sets of substantive issues arise. The first set involves issues that arise because competition policy and sector-specific regulation rely on legal norms that use the same terminology. The second set involves issues that arise because competition policy and sector-specific regulation are applied to the same industries.

When legal norms for competition policy and sector-specific regulation involve the same terminology, the challenge is to preserve the viability of this terminology as a basis for administrative and legal practice. There is a tension here between, on the one hand, the need for legal precision and, on the other hand, the need for appropriateness in different applications. The former calls for inflexibility, the latter for flexibility in one's use of the terms. The above discussion of the use of the term "market" in current telecommunications provides a case in point. Although I applaud the pragmatism with which the matter has been approached, I am uneasy about the fact that, because of the difference in purposes, we now have different uses of this term in the application of telecommunications law and in the application of competition law.

Other examples concern the standards and procedures that authorities and courts use in practice to fill the legal terms with content. An example is given by cost standards that are used to assess prices. For instance, in its discussions with electricity producers, the Federal Cartel Office in Germany has pointed to the fact that existing power plants have been built a long time ago and have long been written off. Therefore, the Federal Cartel Office argues, capital costs for these power plants should not play a role in assessing current electricity prices. Implicitly, this argument takes historically realized costs as the appropriate standard for assessing prices. By contrast, legal norms guiding sector-specific regulation tend to impose standards that involve forward-looking, long-run incremental costs, sometimes with a proviso that cost is to be assessed on the basis of the most efficient technology available. Given the well-known incentive effects of cost-plus pricing rules, I consider the latter standard to be more appropriate. More importantly, I consider the difference between these standards to be problematic. For an integrated electricity company, such differences can provide room for regulatory arbitrage. Moreover, in a dynamic setting, where activities are moved from one domain to the other as the need for sector-specific regulation decreases, such differences mean that, when this move occurs, not only the institutional arrangements, but also the substantive standards for statutory oversight are changed.

Differences can also arise in the assessment of defenses that the companies give for certain practices. An example is provided by the German Regulatory Authority's assessment of Deutsche Telekom's pricing of DSL connections in 2000. The text of decision explains at length why the authority considers the price that Deutsche Telekom charged for DSL connections to be predatory. Then, at the very end, the authority explains that it is not going to proscribe Deutsche Telekom's pricing policy after all because cheap pricing for fast internet connections is going to promote the declared policy objective of the German government of enhancing the use of the internet in German society. With this reasoning, the Regulatory Authority departed from the legal tradition of German competition law which had long held that substantive defenses for presumed abuses had to be based on the objective of the very law that was involved, i.e. the Law Against Restraint of Competition and that an appeal to any arbitrarily chosen objective of public policy was not compatible with the requirements of a stable rule of law in competition policy. Leaving aside the question whether Deutsche Telekom's pricing in the particular case was indeed predatory, I consider it problematic if sector-specific regulation has different standards in

assessing the abusiveness of a disputed practice when the legal norm actually uses the same terms as the Law Against Restraint of Competition.

Whereas these examples raise questions of consistency in the application of competition policy concepts in different legal norms and across different industries, a second set of issues raise questions of consistency in the treatment of a given industry. If a network industry is subject to sector-specific regulation and competition policy at the same time, one needs to have some mechanism to ensure that the different regimes do not work at cross-purposes. Thus, if there are common costs that concern activities in the domain of sector-specific regulation as well as activities in the domain of competition policy, standards and procedures for dealing with them should be consistent. If there is an interdependence between, say the definition of the relevant markets in the assessment of a merger of electricity producers and the viability of the regulatory regime for grid access, this interdependence should be taken into account (as was not sufficiently done in the VEBA-VIAG (E.ON) and RWE-VEW merger approvals in 2000).

In thinking about these different issues, we see that they involve two different notions of policy coherence. On the one hand, we want competition policy to be coherent across sectors. Competition policy gains its legitimacy from the fact that it applies the same rules to all industries and all market participants. Discrimination would undermine this legitimacy. On the other hand, we also want a certain consistency of statutory policy towards a given industry. Moreover, the policy should be appropriate for the industry in question. In the case of a network industry which, after all, has specific features which are the reason for subjecting this industry to sector-specific regulation, we wouldn't want, e.g., abuse-of-dominance proceedings under competition policy to be at odds with what the sector regulator is doing in his domain. As yet, we have little understanding of how to resolve the conflict between these two notions of policy coherence.

4.2 Institutional Issues

Policy coherence is to some extent a matter of institutional arrangements. However, the tension between the two notions of coherence poses a major challenge for institution design. The challenge is all the greater because the different authorities are subject to different kinds of influences. Experience seems to show that sector-specific regulation is rather more susceptible to regulatory capture than competition policy. In some instances where sector-specific regulators have departed from traditions of competition policy in the application of competition policy norms, it seems clear that pressure from the political system has played a significant role. The difference reflects the fact that companies under sector-specific regulation, unlike companies under competition policy, have a strong and persistent interest in lobbying the political authorities as well as the regulators. The fact that Member State governments continue to hold significant shares in some of the former monopolists has also played a role.

At a very basic level, one would like to ensure that the different institutions co-operate where such co-operation is needed. As far as I can tell, legal norms already provide for such co-

operation, at least in the form of statutory consultation on decisions of mutual interest. Rules for mutual access to relevant information seem rather weaker and should probably be strengthened.

However, when there are separate authorities, or even just separate units within a given authority, exchanges of information and views will not be sufficient for policy coherence. One possibility to go further might be to follow an example set by banking supervision in Germany: The supervisors are employees of the Bundesbank working on behalf of (and under orders from) the supervisory authority. By this device, the Bundesbank has the information it needs for its role in monetary policy, in particular, the soft information which is not contained in published numbers, and yet there is a separation of responsibilities. A similar arrangement, with employees of the regulator applying competition law on behalf of the competition authority might improve the coherence of competition policy across sectors while ensuring that the regulator has the information about the unregulated part of the industry that he needs..

Whereas the discussion so far, has focussed on concerns that arise when different parts of the same industry, with well-defined boundaries, are subject to different policy regimes, existing arrangements in the European Union also raise concerns about the possibility that the very same activities might be subject to both regimes simultaneously. As mentioned in the introduction, European competition law, in particular, Articles 81 and 82 EC, cannot be overruled by national law. The legal norms that provide the basis for sector-specific regulation are based on European Directives, but are strictly speaking national laws and can therefore not pre-empt the application of European competition law, although they can – and in the case of Germany do – pre-empt the application of national competition law. Thus, in the cases of *Deutsche Telekom* and, more recently, *Telefonica*, the Commission has relied on Article 82 EC to condemn pricing policies that had previously been approved by the national regulators. The Commission's decision in the case of *Deutsche Telekom* has by now been confirmed by the *Court of First Instance*. In the case *Konsolidierer/Deutsche Post*, the Federal Cartel Office, acting under the auspices of Regulation 01/2003, used Article 82 EC to force the company to grant access to competitors where the regulator had failed to act.³⁴

In these cases, the simultaneous applicability of European competition law and national regulatory law has led to healthy rivalry of authorities, which has helped to counteract the effects of regulatory capture at the national level. This rivalry of authorities worked the way it did because, under existing case law, the Treaty, and therefore European competition law as part of the Treaty, is directly applicable in the Member States of the European Union. In each case, actually, the competition authorities held that they were not contravening any explicit mandates of the regulatory authorities, but merely objecting to the companies' uses of the leeway left to them by the regulatory authorities, e.g. the leeway for setting individual prices under a price-cap regime.

34 The extent to which national regulatory law actually pre-empts the application of competition law is a matter of dispute. In Germany, most scholars hold that, as a *lex specialis*, the law establishing sector-specific regulation pre-empts the Law against Restraint of Competition, see, e.g. Möschel (1999, 2001). However, in assessing the Federal Cartel Office's injunction against *Deutsche Post* in 2005, the Düsseldorf Court of Appeal suggested that. Even without appealing to European law, there might be a dual authority of the two laws and the two institutions.

If, in the *Deutsche Telekom* and *Telefonica* cases, the prices in question had actually been mandated by the regulators, the Commission would have had to initiate Treaty violation proceedings against the Member States in question, which probably would have taken much more time and would therefore have been less effective.

From the perspective of the companies that are concerned, the co-existence of different legal regimes is a source of legal uncertainty and of costs. It would, in principle, be desirable to have a more streamlined system.³⁵ Given the relative standing of European law and national law, however, such a system would seem to presume a European competence for sector-specific regulation. Even then, there would be a question of how to mark the boundaries between the two regimes.

A discussion of policy coherence in sector-specific regulation and competition policy would not be complete without a mention of the courts. Given that some of the legal norms in sector-specific regulation and competition law are ostensibly the same, I consider it important that judicial review should, at least ultimately, rest with the same courts, and that these courts should be aware of the underlying unity of the legal norms. In the case of antitrust law, ultimate authority rests with the European Court of Justice. The decentralization of European antitrust enforcement under Regulation 01/2003 involves a risk that the practices of national competition authorities and national courts may diverge, but then, this divergence can be eliminated by the European Commission taking over important case or by the national courts asking for guidance from the European Court of Justice.

By contrast, in the area of sector-specific regulation, the role of the European Court of Justice is weaker because the law that is being applied is national, subject to European Directives. The ultimate arbiters of this law are the highest courts of the different Member States. There is thus a danger that the underlying unity of certain legal norms may be lost as the highest courts of the different Member States may interpret these norms differently, or as their interpretation in cases involving sector-specific regulation under national law may diverge from their interpretation by the European Court of Justice in cases involving competition policy under European law. In the interest of the unity of the law, it is to be hoped that, in matters of legal norms that are common to both areas, the authority of the European Court of Justice as the ultimate source of jurisdiction on competition law will be extended to the law of sector-specific regulation.

35 This concern seems to be a reason why, in the United States, the Supreme Court, in *Crédit Suisse* even more than in *Trinko*, went rather far in asserting that sector-specific regulation pre-empts the application of antitrust law. One may wonder whether the Supreme Court's stance in *Crédit Suisse* isn't apt to leave some aspects of firm behaviour out of the domains of *both*, antitrust law and regulation, the latter because the legal norms underlying the sector-specific regulation do not provide enough of a basis for intervention, the former, because the existence of sector-specific regulation is deemed to pre-empt the application of antitrust law. Would something like the antitrust prosecution of exclusionary in the AT&T case in the seventies still be possible after *Crédit Suisse*?

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