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Editorial

By Brigitte Preißl

For two years, the Commission of the European Communities has supported research on the regulation of public utility services in various European countries as part of the Human Capital and Mobility Programme. Researchers from nine institutions in eight countries formed the *Utilities Regulation Network (URN)*. The network participants were: University of West London, Brunei (co-ordinator); CERIS-CNR, Turin; Academy of Sciences of the Czech Republic, Prague; Institute of Economics, Hungarian Academy of Sciences, Budapest; Universidade Nova de Lisboa, Lisbon; Università Cattolica del Sacro Cuore, Milan; University of Piraeus, Research Centre, Athens; Université des Sciences Sociales, Toulouse, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin.

The network aimed at initiating and promoting international cooperation of European researchers in the field of telecommunication and energy regulation. As part of the ongoing research programme, the URN has organised four workshops to present and discuss research results as well as research in progress. These workshops were held in Lisbon, Prague, Milan and Berlin in the course of two years. The present volume documents the papers presented at the fourth workshop, held in Berlin on the 26th and 27th of October, 1995.

For technical, economic and political reasons, both, energy and telecommunication services had — until quite recently — been organised as publicly owned national monopolies in most European countries. Technical progress, the internationalisation of economies and new instruments for the coordination of markets have rendered these monopolies obsolete. It has generally been acknowledged in the political as well as in the academic world that the provision of utility services in both areas can be better reached by opening markets for competitive forces. However, the liberalization of markets for telecommunications and energy gave rise to a series of problems that had to be solved by additional regulatory institutions and instruments. The reason was that the act of abolishing a monopoly does not right away lead to a competitively functioning market. Instead, the transition from monopolies to competitive regimes needs to be accompanied by regulatory measures so that former monopolists do not use their power gained

under monopolistic conditions to dominate the market. In addition, one has to make sure that the supply of services is guaranteed at all times, that access to the newly created markets by new entrants is facilitated, and that competition actually works and produces the expected benefits for customers. Some of these problems are related to the often still monopolistic structure of the market. They are of a transitory nature and will disappear with the full establishment of competitive market structures. Others will require long-term regulatory measures, due to the peculiarities of networked utilities and the specific strategic importance of these services for the functioning of modern economies.

Most European countries have now reformed their telecommunication and energy systems and are working to establish competitive markets at least for part of the range of services provided. The timing, radicality, scope and management of the reforms differ from country to country and reflect the historical development of utility provision as well as political, economic and social constellations. Reforms have been supported, promoted and in some cases imposed by the Commission of the European Communities as part of their broader attempts to create a Single European Market. Regulatory solutions in the individual countries often follow the frameworks set by the Commission's directives. Given the underlying service characteristics, there are some common concepts which have to be addressed in the regulation of newly established utility markets, despite national differences due to the diversity of historical developments and political frameworks. They do not only guide the selection of issues to be dealt with in European utility regulation, but are also widely discussed in the international research arena.

These topics include:

Access to the market and licensing procedures: often services cannot just be offered by everybody in newly deregulated markets. Access to these markets is limited in order to guarantee efficient and sufficient supply; a widely used tool for access control are licenses granted to service suppliers. Licences do not only control market entry, but also ensure efficient use of scarce (network) resources and the provision of services of the desired quality and quantity.

The scope of licensing conditions, the selection of licensees and the monitoring of licensed markets is therefore one of the core functions of regulators.

Interconnection: In the case of a monopolist that controls important bottlenecks in the network infrastructure, conditions have to be defined for the interconnection of competing network and service suppliers to these essential network parts. Satisfactory solutions for the interconnection of competing networks and for access to the dominant operator's network are essential for the development of sustainable competitive structures in a network context.

Price regulation: The pricing policy of the former monopolist is often a central concern of regulatory institutions. As long as a monopolistic market structure is maintained, there is no mechanism of competition which makes sure that technical progress and efficiency gains are automatically translated into price reductions and thus into benefits for the customer. Instead, a monopolist tends to appropriate a monopoly rent. Price regulation therefore has to "substitute" the price mechanisms of the market. However, the regulation of price levels is not the only issue of concern, the price structure adopted for the whole set of services offered by one supplier is of equal importance. Since the former monopolist often keeps a network infrastructure monopoly and only faces competition in service markets, there is a danger that monopoly gains are used to subsidize services offered under competition. This *cross-subsidization* affects the chances of competitors negatively, and thus regulatory institutions have to prevent the monopolist from adopting it.

Universal Service: Often privatization of utilities leads to a differentiation of price structures. This raises fears that under a competitive regime only the most remunerative parts of the market will be served at "affordable" prices, while customers in remote areas or scarce users will have to pay more. In the extreme they may not be served at all, because private operators just pick out the most profitable fields of action and neglect the others (cream skimming). Therefore, a universal service concept has been discussed, which guarantees a set of *standard* services for everybody at the same price (i.e., "universal services"). Discussions range from the definition of a universal service package, which is particularly difficult with quickly changing technologies, to models for the practical realisation and financing of such a universal service concept. While conservative definitions confine universal service to a basic telephone connection, more progressive proposals suggest that a full participation in the information society requires a more comprehensive range of services, like those accessible via an ISDN line, which therefore should be provided for every household. Only very large companies would be able to actually provide universal services throughout the country themselves. However, smaller suppliers could make a financial contribution towards the service, to be paid out of profits made in more lucrative parts of the market. There is little evidence on which the quan-

titative dimension of such contributions could be based and views among regulators, service providers and politicians vary considerably with respect to who should be forced to contribute. In order to establish such a system, the cost of universal services have to be investigated (current estimations vary dramatically), and a generally acceptable model for the distribution of shares of the costs among market participants has to be found.

Anti-trust considerations: Another field of regulatory concern is the establishment of *fair competition*. Here the utility regulator competes with national (and European) agencies in charge of competition regulation and legislation. The latter are supposed to take over the functions of anti-trust monitoring and control in deregulated utility markets, once competitive markets have been realized. For a period of transition, however, while the still dominant former monopolist tends to defend its vertically integrated structures by foreclosing essential facilities to potential competitors, sector specific regulation may be necessary. Even with competitive entries, for some time markets will be characterized by an unbalanced supply structure. It will be difficult for competitors, even with network competition to match the market power of the dominant supplier, the former monopolist, so that competitive outcomes will not be realized in all segments of the market.

The dynamics of technical progress create new regulatory problems, for instance, if computing, telecommunications and broadcasting facilities merge and thus new markets with substantial economies of scope are created. Large internationally operating companies might combine activities in all segments of the market for information. This does not only involve the danger of market dominance and thus lack of competition, it might also affect the pluralism of opinions and the freedom of information negatively by excluding smaller (minority) groups from the markets for newspapers and broadcasting. Problems of access to scarce resources, such as transmission capacities and radio frequencies, require regulatory measures to prevent unwarranted dominance of conglomerates operating in individual as well as in mass communication markets.

The implementation of European utility regulation in a national context is another topic on the agenda of utility regulators. Whether the functions of regulation can eventually be taken over by anti-trust authorities or whether there is a permanent need for sector specific utility regulation is a question that is still unsettled.

The researchers within the *Utilities Regulation Network* studied these topics mainly in the telecommunications and energy markets. The focus lay on telecommunications rather than on energy, because the deregulation discussions had proceeded further in this field in most countries. Research results were discussed for various national contexts as well as from a European perspective in the URN workshops. Research in the participating institutions had covered a wide range of regulatory problems, and researchers have contributed to the workshops with a variety of

papers, ranging from theoretical to historical approaches and from economic to political and legal aspects.

The first workshop in Lisbon (June 1994), organized by the Universidade Nova de Lisboa, focused on the histories of reforms in different countries and compared the institutional solutions found for utility regulation from a legislative and a political perspective. Other central questions that had been resolved in different ways in the countries studied were the location of regulators (within or as a special department of a Ministry, as an independent body or as part of anti-trust authorities), their independence from political and economic forces and the scope of their competencies and responsibilities.

At the second meeting in Prague (December 1994), which was coordinated by Brunei and Piraeus, specific regulatory questions were addressed, including mechanisms to guarantee quasi-competitive market results. Such results can be obtained by establishing appropriate incentives for the regulated firms, where competition in the market does not provide them. In this context various models of *price-cap-regulation*, *rate-of-return-regulation*, *profit sharing* and *licensing* were discussed and illustrated with practical examples from utility markets in different countries.

In April 1995 the teams from the Università Cattolica del Sacro Cuore, Milan, and from CERIS-CNR, Turin, hosted the third URN meeting in Milan. The focus of this workshop was interconnection. The implications of different solutions for the interconnection of competitors in local energy and telecommunication networks for competition and welfare were analyzed. Papers included theoretical topics, like the conception of general pricing principles for *interconnection* as well as political issues, like the role of antitrust authorities and that of the European Union in the establishment of competitive market structures. The proceedings of this workshop have been published as a special issue of the *Rivista Internazionale di Scienze Sociali*¹.

The present volume of the *Vierteljahrshefte* contains the papers given at the fourth URN meeting, held in Berlin in October 1995 and organized by the German Institute for Economic Research (Deutsches Institut für Wirtschaftsforschung, DIW). The meeting concentrated on selected problems of utility markets *after* deregulation and liberalisation. These problems reflect the fact that the need for regulation and the tasks to be attributed to regulatory institutions change over time. Periods of transition from monopoly to competition are characterized by regulatory problems that differ from those in fully liberalized markets, where, however, competition can be threatened by dominant suppliers (or customers). Furthermore, technical progress creates a dynamic scenario, in which market constellations, potential adoptions of network technology and the technical viability and suitability of regulatory solutions change quickly.

Many European countries that deregulated their utility networks, have now entered a phase, in which the

regulatory framework has been defined, and basic rules have been established. Now a different set of issues dominates regulation debates: It has to be asked, for example, how the entry of competitors in the markets affects the position of the incumbent supplier. Another line of discussion concerns international competition and the *internationalization* or *Europeanization* of telecommunications and energy markets. Before utility reforms took place, *national* public or private utilities had been confined to domestic markets and had also followed strictly national procurement policies for their inputs. Deregulation did not only abolish monopolies and allowed for the entrance of competitors in the respective markets, it also opened these markets for the entrance of foreign suppliers. This process was paralleled by the attempts at EU level to establish a Single European Market. As a consequence, national operators had to diversify their strategies, and they expanded their activities into foreign markets. This internationalization is typically undertaken in the form of strategic alliances with other utility providers in the world market. Special cases of market liberalization and internationalization can be observed in the formerly socialist countries of Eastern Europe. Case studies from the Czech Republic and from Poland illustrate these processes.

Over the last ten years technical progress in information technology was characterized by the integration of computers (information processing), telecommunications (information transmission) and broadcasting (information dissemination) into one network. Since telecommunications and broadcasting belonged to different realms of regulation before, the merging of the two systems leads to a number of problems concerning the division of responsibilities between regulators. In addition, new needs to regulate emerge (for example, in controlling the contents of the two-way communication service *Internet*) and the control of media power. Economies of scope related to the operation of different services in one network entail a risk of monopolization of information and entertainment markets. Thus, the establishment and control of workable competition in the different parts of an integrated system of network and broadcasting services and the definition of rules for cooperation of suppliers from formerly separate areas are a new challenge for regulatory theory and practice. The papers presented here take up these issues in the following contexts:

Demetrius Yannelis' and Christos Agiakloglou's paper deals with the effect of the entry of a new mobile telephony service in the market for local-trunk and international calls in Greece on the turnover of the incumbent supplier of voice telephony. In this context, it discusses the establishment of a sustainable interconnection solution and the generation of network externalities in an econometric model. The paper presents an interesting example of how to analyze the evolution of competitive structures after deregulation.

¹ *Rivista internazionale di Scienze sociali*, 1, Anno CII, gennaio-marzo 1995.

Dieter Elixmann discusses various forms of strategic alliances in international telecommunications markets. He presents practical examples of existing alliances, documents their historic evolution and the specific aims and concepts of the partners involved. The paper also analyzes the political and economic difficulties and risks involved in the chosen strategies.

Peter Crowther's paper presents the perspective of the European Union. The EU directives aimed at regulatory solutions for interconnection in competitive telecommunication and energy markets are discussed from a legal point of view. Access to markets for network based utilities is strongly dependent on technical standards that allow different suppliers to interconnect their systems with those of other suppliers.

Campbell Cowie's contribution describes the evolution of an individualized tv service, made possible by the digitalization of transmission technology. It documents the process of the standardization of broadcasting systems as a prerequisite for this new form of competitive "infotainment", which combines traditional broadcasting with new two-way personalized communication services.

Martin Cave and Mike Shurmer discuss the British solution for the regulation of new services on the border between broadcasting and telecommunications, like video-on demand. The British case provides an example which comprises a whole range of regulatory challenges, from the allocation of regulatory tasks and the control of dominant suppliers to the delimitations between broadcasting, telecommunications and entertainment markets.

Zdenek Hruby and Richard Seda analyze the process of internationalization of the Czech telecommunications system. This process essentially consisted of the search for an international partner who has the financial potential and the know-how to substantially support the modernization and expansion of the Czech telephone system, without taking too much power and control away from national (political) forces. The case of the Polish telecommunications system, illustrated by *Hanna Kontkiewicz-Chachulska*, stands for a rather cautious reform approach, which is based on conservative assumptions and extremely careful expansion plans.

The only paper, which deals explicitly with energy markets is the one by *Giovanni Fraquelli and Davide Vannoni*. They contribute to the regulation debate by analyzing factor productivity in three electricity firms in Italy, Germany and France. Such productivity analyses are an important input for price regulation, since in markets, where competition is not fully developed, administrative prices have to be found, which reflect productivity developments.

The broad spectrum of topics which were presented at the last meeting of the Utilities Regulation Network shows that regulation does not abolish itself with the move to competitive markets and that it cannot be substituted right away with the competition rules that govern other markets. The dynamics of technical progress, the particular economic rules governing networked services and the continuing processes of internationalization of utility services will create new challenges for regulation theory and regulation practice as long as the transition to a fully competitive market structure is not realized.