

Reforming network industries: experiences in Europe and Belgium

**HIGHLIGHTS OF CONFERENCE “THE LISBON STRATEGY: A MOTOR FOR MARKET REFORMS
OF THE NETWORK INDUSTRIES”**

***JOINTLY ORGANISED BY THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE,
THE BELGIAN CENTRAL ECONOMIC COUNCIL
AND THE BELGIAN FEDERAL PLANNING BUREAU.***

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INTRODUCTION

Network industries and other public services play a key role in the welfare of citizens as well as in economic growth and business development throughout Europe.

Until fairly recently these services were considered as a public responsibility, were mainly controlled and provided by public authorities at a series of different levels, depending on the organisational model in individual Member States. However, awareness arose that such public provision might not always lead to the highest efficiency and lay a heavy burden on public finances. This led to a stage of deregulation, first in Anglo-Saxon and Scandinavian countries, and later in other countries.

This deregulation with greater emphasis on the free market has involved a reduction in the number of state rules, regulations and interventions and increased competition. Nevertheless, conditions were established in order to ensure the quality, accessibility, and universality of public services, as well as fair prices.

An additional and important factor in Europe was the implementation of the single market, which would turn the European Union from a patchwork of separated national markets into a unified market with equal conditions for entry and commerce in each Member State. This was more relevant for network industry services and other publicly provided commodities used to operate in a monopolistic situation, than for commercially exploited markets.

Supporters of this deregulation take the view that the single market boosted the European economy, strengthening competition between companies, creating employment, enhancing the quality of products and services, reducing prices and benefiting the consumers as end users.

Those who campaigned against liberalisation are sceptical about the benefits for small consumers and for workers in the deregulated industries, notably in the public services.

The gradual opening up of the market, together with socially oriented policies and social dialogue, carried out by Member States and at the European level, contributed to decades of economic and social improvement. This has meant that European economy has become very competitive as well as an economic area where wealth is more evenly distributed, creating the European social model: "a form of social market economy in which regulations are agreed with social partners" as Jacques Delors remarked at the ceremony hosted by the European Economic and Social Committee on April 2005 to celebrate the 20th anniversary of the European social dialogue.

The European Economic and Social Committee and the National Economic and Social Councils allow better civil and social dialogue. Through the involvement of the economic and social partners, the needs and expectations of the citizens are taken into account in political and economic decision-making. These are the natural forums to examine and discuss the achievements of the deregulation process, its effects on the European economic and social environment, and different national experiences, in order to promote cross-evaluation and to exchange best practice.

With the European Union facing an economic stagnation and new external economic competitors in such an uncertain international situation, sceptical voices are being heard once again, describing deregulation as a negative development both for public services as well as for the European social model.

These opinions and fears were voiced in the campaign on the European constitution in France and in the Netherlands. The results of the referendum in these countries demonstrated the distance between the European Union and its citizens, and how uninformed its people were about the Union and its policies. It showed the need to involve citizens in general more deeply in the economic and political debate, both at the national and the European level.

Organised civil society represents a huge resource for the Member States and for the European Union to be used to reach out to the people, to involve them in economic and social decision-making, to explain to them the reasons for opening up markets. In this way the advantages as well as ways to reduce or avoid the negative impact of the reforms on the social dimension can be demonstrated, finding a suitable compromise between economic needs and social expectations.

For this reason the European Economic and Social Committee (EESC), the Belgian Federal Planning Bureau (FPB) and the Central Economic Council (CEC) jointly organised a high-level conference to take stock of the liberalisation of the European Union's network industries. About 200 people attended the conference on 1 and 2 June 2005. The event looked at a range of national experiences in order to promote an exchange of best practice during the liberalisation of network industries. It took into account the opportunities that the Lisbon strategy offers for further developing the deregulation process, trying to avoid the potentially negative social effects of the reforms. European and national organised civil society representatives were brought together to create the right kind of environment for a rewarding discussion. The European Council had already asked the EESC to promote an interactive network with national Economic and Social Councils (ESCs) in order to involve organised civil society more deeply in discussions at the European level on the follow-up of the Lisbon strategy.

Representatives from the European Union Council presidency, the Belgian government, the European Commission, the European academic society as well as from national ESCs and various organised civil society associations in Europe attended the conference. Given the broad definition of services of general interest, the wide range of services involved and the various ways that Member States carry them out, it has been necessary to look at how the deregulation process operated sector by sector. In order to look at concrete examples and encourage an in-depth debate, discussion mainly focussed on some key public services: electricity, postal services and rail services.

The high level study on the Belgian network industries sector presented to the Conference by FPB, together with other contributions on European and national studies and experiences, provided a strong basis for a in-depth discussion between the national and European economic and social partners. It was decided to collect and publish the highlights of the conference in the hope that such an interesting dialogue would be useful for further debates and actions as well as to promote additional exchanges of best practices throughout the European Union. This could lead to 'bridge the gap' between the citizens and the European Union as well as to promote a better understanding of the benefits and drawbacks of European activities, which have provided for the welfare of our citizens and businesses across the continent over the last 50 years.

Henri Bogaert,
Commissioner of the Plan
Belgian Federal Planning Bureau

Anne-Marie Sigmund
President of The European Economic
and social Committee

Robert Tollet
President of the Central
Economic Council

PREFACE

Network industry reform is a much debated issue. This is not only because it is a major factor in the Lisbon strategy and the completion of the internal market, but also due to the controversial points of view about the implications of the reform. Experts and stakeholders hold different opinions on the subject. On the one hand, the reform would lead to greater efficiency and competitiveness, boosting economic growth; however, on the other hand, it might also lead to the erosion of the quality of services of general economic interest, a loss of employment and certain forms of market failure. In Belgium, network industry reform has been treated with caution. Only a small number of steps have been taken ahead of the calendar set by the European Union. Obviously, some concerns about the potentially harmful implications of the reform (in a context of slow economic growth) and the scepticism and sometimes open aversion shown by the public have made the authorities reticent to implement reform measures.

In 2003, the Central Council of the Economy (CCE) commissioned the Federal Planning Bureau (FPB) to conduct a study analysing the merits and costs of network industry reform in Belgium. The study made an in-depth analysis of these domains and was particularly appreciated by the European Economic and Social Committee (EESC), which has for many years been engaged in an effort to broaden the involvement of European organised civil society in the debate on such important topics as the Lisbon strategy and services of general interest. In order to further the current debate, the three bodies jointly organised a two-day colloquium involving European and Belgian institutions, Economic and Social Committees of the European Union, and several important stakeholders. This book reports on that colloquium held on 1 and 2 June 2005 at the EESC building in Brussels.

The colloquium underlined the benefits and costs of network industry reform and the role of public policy in mitigating this. It also demonstrated the role of organised civil society as an interface between public authorities and citizens when it comes to communicating about network industry reform and discussing its implications, notably the role of the Economic and Social Committees in mobilising the forces of organised civil society in Europe.

The book begins with an introductory chapter on network industries (Chapter 1) for readers who are less familiar to the subject. It gives a definition and the main economic characteristics and policy issues. It also shows the size network industries have in European and Belgian economic activity. Chapter 2 contains the proceedings of the colloquium. It gives summaries of the presentations and interventions by discussants. It also reports on the two panel discussions held. For more detail the reader is referred to Chapters 3 - 6. These chapters include the four presented papers, some of the discussants' comments and EESC-Opinions on the involved topics. The four papers deal with the European Union horizontal evaluation of network industry performance, the economic impact of network industry reform, the issue of barriers to entry and the issue of universal services, respectively. Finally, Chapter 7 gives the conclusions based on the papers and discussions. The emphasis in these conclusions is on the policy implications of network industry reform.

Preface

This book is the work of an editing committee, which consisted of representatives from the CCE, EESC and FPB. It was not an easy task to get all the contributions together and to do so in a timely way. I therefore thank the other members of this editing committee, Emmanuel de Béthune (CCE), Raffaele Del Fiore (EESC), Christian Huveneers (Belgian Competition Council) and Joost Verlinden (FPB), for all their work and cooperation. I also thank Peter Mistiaen (FPB) and Vasco Oliveira (EESC) for their supporting work. Finally, my thanks go to the EESC for its excellent hosting of the colloquium, and the FPB, and in particular Adinda De Saeger, Béatrice Duquet and Vincent Geortay, for the public relations and layout of this book.

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Brussels, March 2006

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EXECUTIVE SUMMARY

In June 2005 a two-day colloquium was organised by the European Economic and Social Committee (EESC), the Belgian Central Council of the Economy (CCE) and the Belgian Federal Planning Bureau (FPB). This colloquium brought together researchers, social partners, civil servants and politicians to discuss the merits and downsides of network industry reform and the concerns it raises both from a European and Belgian perspective. This book contains the proceedings of the colloquium, including papers presented, comments, opinions and an analysis of the presentations and discussions.

The Lisbon strategy is one of the major economic themes of the European Union during the present decade. It was initiated after it was observed that Europe performed relatively poorly compared to the United States. The latter country had experienced stronger economic and productivity growth, a higher employment rate, and a higher level of innovation than the European Union. To tackle these problems, the European Union adopted the Lisbon strategy, an ambitious programme that foresees further completion of the internal market.

The creation of this internal market has been in progress since the European Union was founded and consists of a step-by-step integration of Member States' national markets. The Lisbon strategy gave significant new impetus to this process, in particular as regards network industries. Network industries are important for competitiveness, but were previously overwhelmingly characterised by isolated national markets. Moreover, in most cases they were legally monopolised, which could further harm the efficient flow of persons, products and information. Certain Member States had already taken initiatives on their own to reform network industries. Belgium, however, was not among these countries, and, in most cases, proceeds at the pace prescribed by the European Union.

Network industry reform is a controversial issue. The reform mainly involves opening up monopolised national markets, the development of a framework to create a European market, and pro-competitive regulation of segments that cannot be opened up. In many cases, privatisation is also involved. According to economic theory, this should lead to improvements in efficiency and competitiveness. However, there is, also much concern about adverse effects. The participants in the colloquium highlighted in particular the quality of services provided, the level and quality of employment in the industries, and the functioning of the market. Below, a brief synthesis of the concerns and merits, as discussed by the speakers and other participants, is given, followed by a short conclusion.

As regards quality of services, network industries often provide public and/or universal services that were originally subject to strict public control. Some participants, however, noted that competition and privatisation might lead to the erosion of public services. Certain parts of the network might be closed down because of a lack of profitability. Railway and post office networks, especially, could be affected. Cost pressures might lead to decreasing quality and an increased risk of disturbances. According to some, this has been the case in the electricity sector.

As regards employment, more than half a million workers throughout the European Union were hit by the reforms. This was an inevitable consequence of efforts to increase productivity in these sectors, which often suffered from poor performance before reform. As a result of the competitive pressures that were

introduced, new entrants and incumbents were tempted to hire employees at lower wages and with lower standards of training and qualifications than had been the case under the former monopolistic operator. The contracts offered to these new employees didn't stand comparison with the civil servant status that employees enjoyed before, or still enjoy, at the incumbent. In the worst cases, work was contracted out to self-employed agents, who had to face the risks of their activity all by themselves.

As regards market functioning, some participants emphasised that market opening does not in itself guarantee that new providers will enter the market and help create a competitive market, especially when economies of scale and/or scope exist. Inadequate or inappropriate regulation may even lead to a concentration in markets and monopolistic or oligopolistic practices. It provokes pricing behaviour that could well lead to significantly higher prices than would be possible in a competitive, or, at least, contestable market. It was argued that this was felt more strongly by households and small companies than by large companies, the latter being in a better position to negotiate on prices.

The absence of a level playing field is one of the entry barriers that need to be highlighted. One of its causes is insufficient vertical separation of the incumbent where the entry to certain facilities such as the network is essential. Also, the financial position of the incumbent with respect to the entrants is said to play a role. The lack of harmonisation of rules and standards between Member States can also create a barrier to entry.

Another concern with regard to market functioning relates to investments. Market reform and the accompanying regulation has in certain cases led to a lack of incentives to invest, in other words, to keep the capital stock at an adequate level. In certain cases, the market was already suffering from over- or underinvestments shortly before reform was initiated. This has led to imbalances in the market, and even to safety problems.

Although the concerns above are justified because they are perceived and observed in reality, it cannot be denied that network industry reform does have a *beneficial impact* upon the economy. However, this impact is not felt in the short-run, especially amongst the interest groups that are negatively affected. The benefits are, in fact, long-term and are spread widely across the economy. Mitigating the adverse effects discussed above, or creating conditions that ensure they do not occur is a real policy challenge. The four papers presented at the colloquium, and published in this book, shed light on certain elements and conditions of reform.

At the beginning of 2005, the markets for electricity, gas, railways, postal services and telecommunications were still relatively concentrated. Nevertheless, there has also been an increase in competition and contestability. This is particularly true of the telecommunication markets. In certain markets, price decreases have been observed, from which low-income consumers have also benefited. Furthermore, productivity growth and employment have occurred within the network industries. They are summarised in the next four paragraphs.

These observations are supported by the majority of economic studies on the subject. Such studies analyse the causal relationships between market reform and economic variables, both at industry and aggregate level. In general, they underline the beneficial impacts upon productivity, prices, quality and investments within the sectors concerned. The impact on employment, however, remains ambiguous. At the macroeconomic level, productivity, employment and growth also benefit. The impact reform has

depends on the way it is carried out, as well as on the quality of regulation. This means that governments must create satisfactory conditions for reform if it is to be effective and avoid adverse effects. There is evidence that the impact of reform has been more positive in countries where the reforms had taken place gradually, and where due attention was paid to the independence of the networks with regard to upstream and downstream segments (as in Sweden, Spain and the Netherlands).

Specific topics analysed in the papers include entry barriers and universal services. Entry barriers are a more important factor for competitive conduct than market concentration. When entry barriers are low, dominant market players are forced to behave competitively, for example by charging relatively low prices. Practice in the Belgian electricity generation market shows that entry barriers produce risk factors, which raise the price that attracts entry above the price set by the incumbent.

For the sustainability of universal services, scale and efficiency are more important factors than market opening. It has been said that cream-skimming entry and a loss of public control would undermine universal service provision. Practice in the Swedish postal market, however, shows that universal services can be sustained in a liberalised market without operating subsidies. High volumes of mail per capita, an efficient conduct of business and the advantage of a countrywide network contribute to this result.

Two basic lessons need to be drawn. Firstly, the impact market reform has in network industries depends on specific circumstances and the degree to which government policy copes with these circumstances. Governments should anticipate adverse effects or intervene when they actually occur. Secondly, organised civil society can serve as an important medium of communication on this issue. Colloquia like the one reported in this book provide the European institutions and the public with an opportunity to discuss the implications of certain policy initiatives.

CHAPTER 1

NETWORK INDUSTRIES: MAIN ISSUES, DEFINITIONS AND ECONOMIC SIGNIFICANCE

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Abstract:

This introductory paper first gives a definition of network industries and their economic characteristics, as well as policy issues related to it. It then introduces the five selected industries to be analysed in the other papers of this volume. Finally, it gives brief outlines of those other papers. Network industries can be defined as industries in which the principal activity is to convey people, products or information from one place to the other via a physical network of a certain kind. These networks have certain economic characteristics that require policy intervention. The following sectors are analysed in this volume: electricity, gas, railways, telecommunications and postal services. Each of these has specific characteristics. When all other transport activities are included, they account for about 9% of GDP and employ 12.7 million people in the EU-25. Price and productivity developments differ widely between network industries. The most successful developments resulting from reform have taken place in the telecommunications sector, which was opened to competition early on. The other papers of this volume concern the European Union monitoring of network industry performance, an economic study of the impact of reform, an analysis of entry barriers in electricity markets, and an assessment of the impact liberalisation has had on universal services in the postal sector.

Keywords:

Network industries, liberalisation, regulation.

JEL Classification:

L43, L51, L90.

1. THE RATIONALE FOR ANALYSING NETWORK INDUSTRY REFORM

The Lisbon strategy is a hotly debated issue in present-day Europe. Launched six years ago, its objective is to make the European Union the most competitive economy in the world. This was to be achieved by structural reforms that would improve the conditions for better economic performance. Recently the strategy has been given a new momentum that should lead to an intensification of the Member States' efforts to implement reforms. Network industries are part and parcel of the Lisbon strategy. Well functioning network industries are among the conditions for good economic performance.

Network industries play a major role in society, both from an economic and a social perspective. To optimise this role a reform process was started a few decades ago. In many countries and partly stimulated by European Union initiatives, this process was accelerated during the 1990s and later became part of the Lisbon strategy. The reform basically consists of turning protected and vertically integrated national monopolies as far as possible into free markets that are open to international competition. The most important elements of reform are vertical separation of the integrated production chain; allowing entry in the segments where competition is feasible; and controlling and regulating the segments where a monopoly should remain. In many cases there also is privatisation of the public companies that exercise the monopoly.

The objective of reform is to improve the performance of network industries. This should have beneficial implications for domestic prosperity and international competitiveness. The improvements may consist of higher efficiency, lower prices and better quality. In the European Union context reforms are also needed for the creation of the internal market, which in itself should have beneficial implications for prosperity and competitiveness, and is explicitly stated in the Lisbon strategy.

For several reasons market reform is also a delicate subject for society. Most important may be employment. Although there may in the end be job growth throughout the economy, serious job losses in the reformed industries are almost unavoidable and working conditions may be at stake. Another reason is the provision of public services. When the market is liberalised, and if the incumbent is privatised, there is a risk that public services provided by the network industry are going to suffer as long as they cannot be produced at a profit. A third reason is privatisation. In this case there is a risk that government may lose control over activities that are of great value to society, and that the privatised operator strives to make profit rather than serve the public interest.

It is therefore essential to monitor network industry reform and analyse its implications, both *ex ante* and *ex post*. The quality of the reform measures determines how evident the beneficial effects actually are and to what extent the detrimental effects can be alleviated or even avoided. Note that in the vast majority of cases the maintenance of government control over public services is built into the reform measures as a prior condition.

The focus of this volume is on Belgium. Among the Member States of the European Union Belgium has shown scepticism with respect to network industry reform and, as a consequence, is relatively late with its reforms. In most cases, the country strictly follows the reform timetable set by the respective European Union directives. In only a few cases (such as gas and electricity in the Flanders region) Belgium lies ahead of the European Union timetable. This volume builds on available experience as regards quality

of reform, economic implications and delicate issues. The analyses should provide input for policy making in Belgium, but also for other countries that are undergoing a process of reform or that need to review reform measures taken previously.

This volume gives an overview of the economic and social impact network industry reform may have, and the role of the quality of reform measures. It also analyses some specific (sensitive) issues: entry/competition and public/universal services. These are applied to, respectively, the electricity and the postal sectors. The present chapter is introductory. First of all, it gives a more precise definition of network industries and explains the choice of industries to be analysed in this volume (§2). Then it provides an overview of the size and economic significance of the selected industries, on both a European and a Belgian level (§3). This is followed by an account of the basic policy issues concerning network industries (§4). Finally, a brief overview of the other chapters in this volume is given (§5).

2. DEFINITION OF NETWORK INDUSTRIES

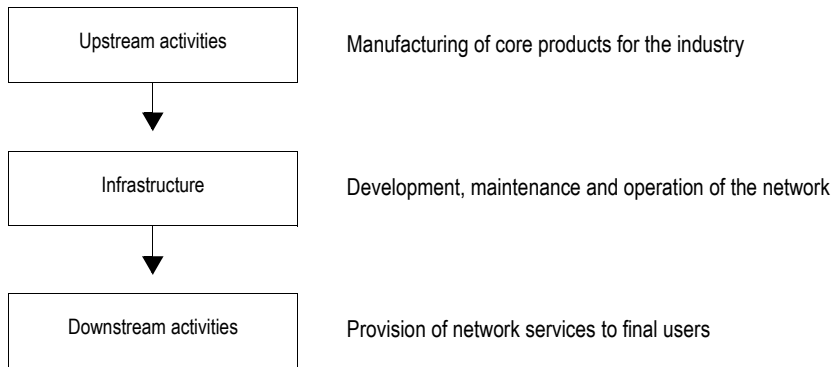
2.1. MAIN ECONOMIC FEATURES¹

Network industries are industries which move people, products or information from one place to another via a physical network of a certain kind. These include transport networks (road, rail, *etc.*), information networks (mail, telephony) and utility networks (electricity, gas, water). Physically, the network consists of nodes and links. Nodes are divided into entry/exit and switching nodes. At the entry/exit nodes, flows of people, products or information enter or leave the network. At the switching nodes, the flows are switched into the desired direction. It goes without saying that the links connect the nodes and may, for example, take the form of pipelines, wire, railways, and, in a more abstract sense, air slots and postmen carrying out deliveries.

Basically, there are three different types of economic activity in network industries, see Figure 1 and Bergman *et al.* (1998): upstream, infrastructure and downstream activities. *Upstream* activities concern the production of core products such as transport equipment, but also of gas, either natural or manufactured, and electricity. Except for gas extraction (or import) and electricity generation, upstream activities are usually not considered in the analysis of network industries. *Infrastructure* activities involve the development, maintenance and operation of the network itself. *Downstream* activities concern the provision of network services to final users. The precise distinction between infrastructure and downstream activities is not the same for all network industries. For example, the transmission of electricity is part of the network operations for electricity, whereas the downstream activities are limited to purchases and sales. For the railways, however, the running of trains is part of the service provision, whereas the infrastructure activities are limited to (in simple terms) maintenance and traffic control.

1. This section is based on Gusbin *et al.* (2003).

Figure 1 - Production chain of network industries



Source: FPB, based on Bergman et al. (1998).

Four levels of separation between the segments are possible. First, when two or more segments are fully integrated into one company, there is *no separation*. Second, when two or more segments are integrated into one company, but the financial administration of that company contains separate accounts for the segments, there is *accounting separation*. Third, when separate companies exist under a parent company or separate divisions under a holding structure there is *legal separation*. Fourth, when the segments are fully independent and no parent company has stakes in more than one segment there is *ownership separation*. Note that European Union legislation mostly requires legal separation.

From an economic and social point of view, network industries have specific characteristics that necessitate government intervention. These characteristics are considered market failures and may lead to inefficient performance, see for example Chapter 3 of this volume and Van der Linden (2005a). The most important are (see also Bergman *et al.*, 1998; Ilzkovitz *et al.*, 1999; IDEI, 1999):

1. *Network externalities*: Several types of externalities may occur in network industries. Typical for network industries, however, are the so-called club and congestion externalities (see IDEI, 1999), where the utility of the service for one customer depends on the total number of customers. Club externalities have a positive impact, for example in the outreach of telecommunications networks. Congestion externalities have a negative impact, for example by crowded roads and trains. Other externalities, such as noise and pollution, also occur, but are not typical for network industries.
2. *Natural monopoly*: Building up the network infrastructure usually requires massive investments, whereas the downstream activities have in many cases relatively low costs. In other words, there are high fixed and low marginal costs. Significant economies of scale can be achieved and duplication of the network or parts of the network is often inefficient. When such a case applies, the operation of infrastructure is considered a natural monopoly.
3. *Services of general interest*: Last but not least, network industries often serve the public interest, both from an economic and a social perspective. For production and consumption of goods and services, there must be movement of people, products and information. So, well functioning

network industries contribute to economic efficiency and competitiveness. From a social point of view, certain network industry services are considered to be basic needs: telephony, Internet, transport, mail and electricity.

As regards externalities, it is indicated that club and congestion externalities occur in almost all cases. Club externalities work directly when the number of connected people itself is a source of higher utility. They work indirectly when the number of connected people allow for a widespread availability of network facilities such as pillar-boxes and bus stops. Congestion externalities only occur at fixed capacity levels. They may be removed when investment plans turn out to be economically and socially feasible. Natural monopoly elements occur in energy, railway and water supply networks, and in airports and local public transport. The natural monopoly does not need to cover the whole network. It may occur in some segments (links, upstream nodes, *etc.*), whereas it does not occur in others. As regards services of general interest a distinction between public and universal services is often made. Public service is a broader notion than universal service. Public services are services of general interest that are provided by the public sector because the private sector alone may not serve the market efficiently. Universal services are well-defined public services that are considered as basic needs for all citizens.

Another important element is substitutability. A network industry is not a market in itself, but part of a larger market, where substitution with the products of other network industries is possible. The most obvious example is the railway industry, which has to compete against other means of transport. For the other network industries (partial) substitution is possible as well. Gas and electricity are substitutes for heating and cooking. Postal services and telecommunications are partial substitutes for certain communication products. In a number of cases, one may choose between a letter, a phone call, a fax and an email. In other cases, parcels for example, it is not possible to choose. This volume, however, does not adopt the approach of considering the individual network industries as part of a larger market.

2.2. CHOICE OF INDUSTRIES TO BE ANALYSED

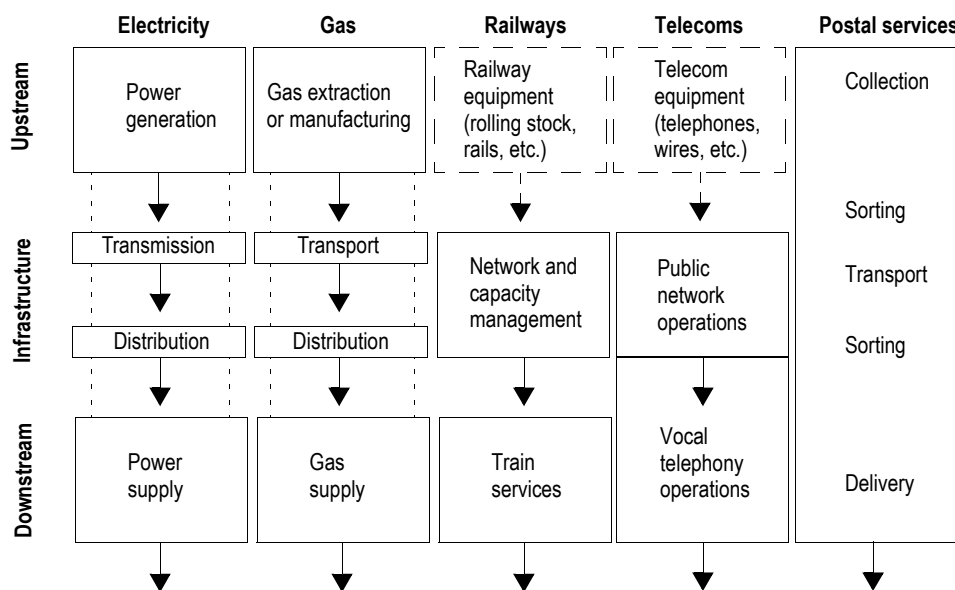
The analysis in this volume is limited to five network industries:

1. Electricity: Chapters 1, 2, 3 and 4;
2. Gas: Chapters 1, 2 and 3;
3. Railways: Chapters 1, 2 and 3;
4. Telecommunications: Chapters 1, 2 and 3;
5. Postal services: Chapters 1, 3 and 5.

Other network industries, such as air transport, water transport, the road network, water supply and local public transport are not considered for the following reasons. Market reform is an issue of current interest for the five selected industries, whereas this is not so much the case for other network industries. Technological developments do in some cases reduce the extent of natural monopoly. This is not the case for water supply, where the natural monopoly is considered to remain very important. The European Union is calling for reforms in these industries. This is not the case for road, air and water transport, where the markets are already liberalised. Finally, the five sectors basically fall under federal authority in Belgium. This is not the case for local public transport, which falls under regional and local authority.

The major economic features of the five selected industries are summarised in Figure 2 and Table 1. Figure 2 illustrates the respective production chains. The block arrows reflect the vertical separation that is typical for the state of affairs after reform. In most cases it also is the separation required by European Union legislation. Table 1 gives some brief details about the selected industries with respect to the three features listed in Section 2.1 above: network externalities, natural monopoly and services of general interest. The summaries of economic features and reform given in this section are very brief and general. For more detail the reader is referred to Gusbin *et al.* (2003), Huveneers (2005), Mistiaen (2005) and Van der Linden (2005bc).

Figure 2 - Production chains of the five selected industries



Source: FPB.

In the *electricity* sector the upstream activity is power generation. The infrastructure is usually separated into two sub-segments: transmission and distribution. The former is the high-voltage network for long-distance transmission of current. Before reform it was often integrated with the generation segment. The latter are the medium- and low-voltage networks for delivery to households and industrial consumers. Before reform it was often integrated with the supply segment. Note that large industrial outlets are usually connected to the transmission network directly. The downstream activity merely consists of sales activities. In many cases there is vertical integration between power generation and sales, which is fully legitimate. This integration is indicated by the dotted lines in Figure 2. It gives the power generators their own marketing and sales channels to the final user.

In the electricity network there are indirect club externalities, while there may also be congestion (see Table 1). The more premises are connected to the network, the easier it is for the next premise to become connected. Congestion typically occurs at cross-border interconnection lines. The limited capacity is then

a hindrance for power generators trying to enter foreign markets with current produced in the home country. As is typical for a network industry, there is a natural monopoly in the infrastructure, both at the transmission and distribution levels. The supply of electricity is considered to be a universal service. In present-day society, which relies on electric appliances, every citizen should have access to at least a limited amount of electrical power, and security of supply must be safeguarded. Public service obligations concern sustainable development, for example the promotion of renewable energy or the rational use of energy.

The reform of the European Union electricity industry is set out in Directives 96/92 and 2003/54. These directives prescribe the legal separation of infrastructure from other segments and set a timetable for market opening. Industrial and professional customers are eligible from 1 July 2004; households must be eligible from 1 July 2007 at the latest, see Table 2. Access to the networks must be free and under regulated prices. These prices are proposed by the network operator but should be approved and published by a market regulator. Finally, major public and universal service obligations are set out as in Table 1.

Table 1 - *Economic characteristics of the five selected industries*

	Electricity	Gas	Railways	Telecoms	Postal services
Network externalities	Indirect club externalities; Congestion	Indirect club externalities; Congestion	Indirect club externalities; Congestion	Direct and indirect club externalities	Indirect club externalities; Congestion
Natural monopoly	Transmission and distribution networks	Transport and distribution networks	Larger part of the network	(Local loop)	Delivery
General interest ^a	USO & PSO: continuous supply & environment	PSO: security of supply	PSO: passenger services & network maintenance	USO: e.g. phone boxes for all citizens	USO: daily delivery for all citizens

a. USO = Universal service obligation; PSO = Public service obligation.

Source: FPB.

There is a high degree of similarity between the electricity and the gas sectors. The upstream activity is the production or extraction of gas. Note that this is not the case in Belgium, where the 'upstream' activity merely consists of importing. The infrastructure is usually separated into two sub-segments that used to be integrated with the production/extraction and supply segments, respectively. It also includes storage activities. The downstream activity consists of sales and may be vertically integrated with the upstream activity.

In the network there are indirect club externalities, while there may also be congestion. There is a natural monopoly in the infrastructure at both levels. There typically is no need for universal service obligations because there are substitutes such as coal, heating oil and electricity. Moreover, the penetration of the gas network is still limited in many countries. Only the security of supply should be safeguarded.

The reform is set out in European Union Directives 98/30 and 2003/55. These directives prescribe legal separation of the infrastructure and set a timetable for market opening. Industrial and professional

customers are eligible from 1 July 2004, households from 1 July 2007. Access to the networks must be free and under regulated prices, proposed by the network operator, and approved and published by a market regulator. Major public service obligations are set out as in Table 1.

Table 2 - State of affairs in market opening, according to European Union legislation

	Electricity	Gas	Railways	Telecoms	Postal services
Year	2004	2004	2003	1998	2003
(Directive) Current state of affairs	(2003/54) All professional and industrial customers	(2003/55) All professional and industrial customers	(2001/12) Freight services on TERFN ^a	(97/15) All customers	(2002/39) Items >100gr or >3x basic tariff
Year	2007	2007	2006		2006
(Directive) Next stage	(2003/54) All customers	(2003/55) All customers	(2004/51) All cross-border freight services		(2002/39) Items >50gr or >2½x basic tariff
Further stages			All freight: 2007 (Dir.2004/51) Passengers: not before 2010		All items: not before 2009 (2002/39)

a. Trans European Rail Freight Network, which is the EU network of main lines for rail freight transport.

Source: FPB.

The production chain of the *railways* strongly resembles the basic segmentation illustrated in Figure 1. The upstream activity concerns the production of equipment such as rails and rolling stock. There is no need to include this activity in the analysis of network industry reform. The infrastructure activities include network maintenance, allocation of capacity to operators and train types (intercity, local, freight, ...), and traffic control. The downstream activity concerns the operation of train services, including the management and maintenance of rolling stock.

In the railway sector there are indirect club externalities, while there may also be congestion. The more people make use of trains, the more services and stations there will be and the more extended the network will be. Congestion may not only occur when certain lines reach their capacity levels. Congestion externalities also occur when trains get overcrowded and the presence of too many passengers reduces comfort. There typically is a natural monopoly in infrastructure. This may, however, not be the case in core segments of the network when there are four- or six-track links between two nodes. Railways and other forms of public transport are usually subject to public service obligations. Government then sets and pays for minimum service levels to secure mobility for those who cannot make use of private means of transport. Public service obligations may include the maintenance of the network.

The reform is presented in sets of European Union directives, the first consisting of 91/440, 95/18 and 95/19. The second set, 2001/12, /13 and /14, is called the 'Infrastructure Package'. The third set, Directives 2004/49, /50 and /51 and Regulation 881/2004, is called the 'Second Package'. A fourth set, the 'Third Package', has been proposed. In general the directives set the conditions for market opening and prescribe the first stages of actual market opening. Conditions for market opening concern the independence of railway companies from government, the accounting separation of network management from train services, a system of slot assignment and access charges, the establishment of

interoperability between national networks, and the harmonisation of certain rules and requirements. The first stages of market opening concerned freight and international passenger traffic. Free entry on the European network of main lines for freight was established on 15 March 2003. According to Directive 2004/51 all freight will follow in two stages: 1 January 2006 for international freight; 1 January 2007 for domestic freight.

Just as is the case for the railway sector, the upstream activities of *telecommunications* are not included in the analysis of network industry reform. They concern the production of equipment such as wires, switches and telephones. Unlike the railways (and both energy sectors) there is no natural monopoly in the network, so there is no need to separate the network from the downstream activities, which consist of the supply of vocal telephony services. The only exception here is the local loop (see below).

Out of the five industries that are the subject of this analysis, telecommunications is the only one with direct club externalities. The more people are connected to the network, the more utility one customer directly derives from being connected. It is said that there is a natural monopoly in the local loop, which is the local network of connections to houses and industrial sites. In a sense this is correct, as it would not be efficient to build a duplicate local loop. In practice, however, there are alternative ways to connect two users. Most notable are the mobile networks, but cable-TV networks are also used for telecommunications services. Therefore, 'local loop' is put in brackets in Table 1. There are universal service obligations because every citizen has the right to access telecommunications services at affordable prices. One element of the universal service is the provision of public telephone boxes. Another element is the possibility of calling emergency services whenever necessary.

The legal framework for the telecommunications market is based upon a series of European Union directives and recommendations dating from between 1997 and 2002 (see Gusbin *et al.*, 2003, pp.48-49). The most important directives concerning market opening are 97/13, 97/33 and 97/51, on licensing procedures, interconnection and the establishment of a competitive environment, respectively. Other directives and recommendations deal with problems related to market opening, such as access to the local loop, universal service, personal data protection and protection of privacy. The most recent set of directives, 2002/19, /20, /21 and /22, widens the scope to include all electronic communications. It adopts the perspective of a 'market' rather than a 'technique'.

In the *postal services* the upstream activity consists of the collection of mail. The network activities consist of sorting and transport. Note that the network only consists of nodes, for transport it makes use of other networks. The downstream activity consists of the distribution of mail. Unlike the other four sectors, there is no need for vertical separation (CTcon, 1998). Because of economies of scope it is more advantageous to have an integrated production chain.

In the postal sector there are indirect club externalities, while there may also be congestion. The more people make use of mail services, the more extended the network of post boxes and post offices may be. Just as is the case for the telecommunications sector, there is a natural monopoly in the downstream activities. This may, however, not be the case in densely built areas, in particular when the average number of items per household is high. Postal services are usually subject to universal service obligations. In European Union legislation this implies that there must be a daily mail delivery at affordable prices and minimum quality standards at all addresses in the country.

The reform is set out in Directives 97/67 and 2002/39. These directives prescribe the universal service obligations and set a timetable for market opening. At the moment there is free entry for items heavier than 50 grams or more expensive than 2½ times the basic tariff. Complete market opening is envisaged, but depends on the results of a study on the impact of market opening on universal services.

3. NETWORK INDUSTRIES IN BELGIUM AND THE EUROPEAN UNION

Network industries play a significant role in the economy. When road, air and water transport are included they produce some 9% of European Union GDP. Their share in employment is lower but still 6.5%, which represents almost 13 million persons in 25 countries. In economic literature this is called the backward significance because it stimulates production and creates jobs in supplying industries, backwards in the production chain (but not included in the figures above). Moreover, the forward significance may even be more important because the consumption of the network industries' products is essential for virtually all activities in the economy.

The emphasis of this section is on the backward significance, which is elaborated in §3.1 with reference to both the European Union and Belgium. Some performance indicators are given in §3.2: productivity and prices. These indicators do not measure forward significance. They are determinants of the utility that consuming households and industries derive from their services. Note that this section does not explain the patterns found, for example by relating them to network industry reform, nor does it try to explain any deviations of Belgian from European Union patterns. This section merely gives an indication of the size and performance of network industries in the European Union and Belgium during the past decade.

3.1. ECONOMIC SIGNIFICANCE

The size and evolution of network industries is measured from two sources. The first gives a broad indication at the European Union level. It builds on Eurostat national accounts data. The second gives some more detail at the Belgian level. It builds on Belgian national accounts data. Note that at the European Union level road, air and water transport are also included, whereas the Belgian level is limited to the five selected industries (see §2.2 above).

3.1.1. AGGREGATE TRANSPORT AND UTILITIES IN EUROPE

In the national accounts data of Eurostat, aggregate data is broken down into 31 sectors. Network industries are covered by two of these: "Electricity, gas and water supply" and "Transport, storage and communication", which are also known as 'utilities' and 'transport', respectively. The utilities sector thus closely resembles electricity and gas as defined in §2.2 above. In the transport sector, however, railways, postal services and telecommunications only have a relatively small share. The economic significance of this broadly defined set of network industries is shown in Table 3.

Table 3 - Value added creation of transport and utilities in the European Union (billion euro)

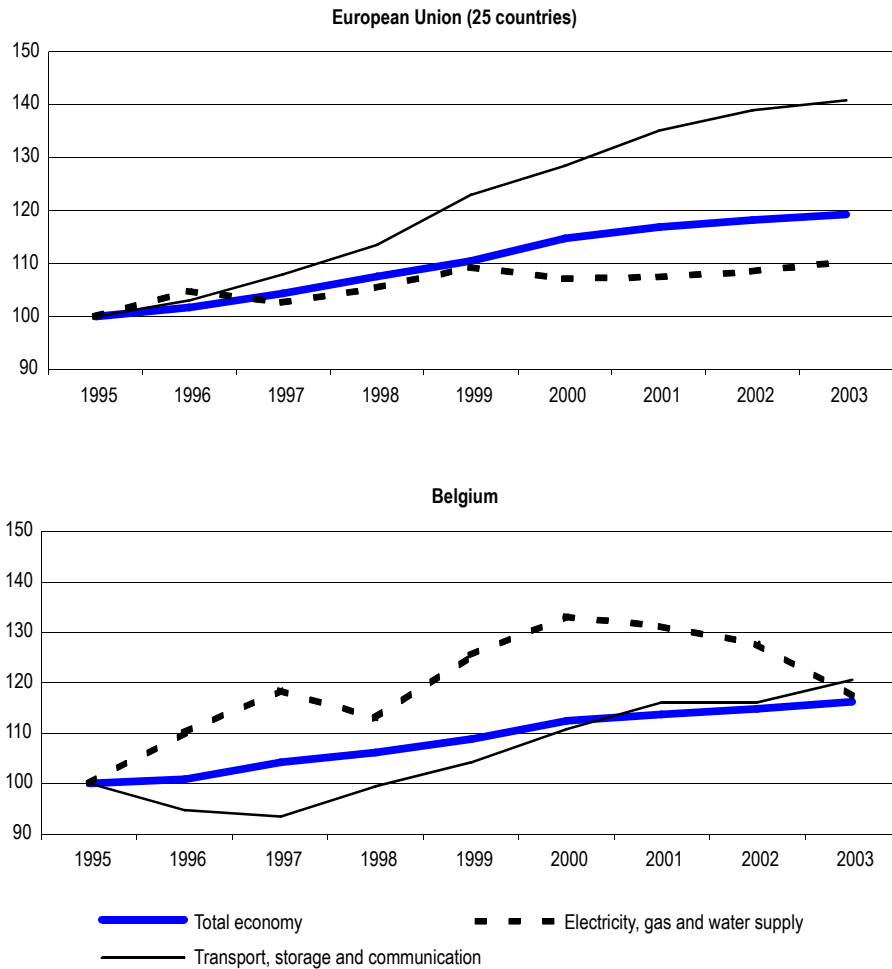
	Electricity, gas and water supply	Transport, storage and communication	Total network industries	GDP in current prices	Share in GDP
EU-25					
1995	154	433	587	6 353	9.2%
1999	171	545	717	7 684	9.3%
2003	184	648	832	8 998	9.2%
<i>Annual real growth</i>	1.2%	4.4%	3.6%	2.2%	
Belgium					
1995	5.6	13.8	19.4	198.9	9.8%
1999	5.9	14.9	20.8	218.7	9.5%
2003	5.8	17.3	23.1	249.9	9.3%
<i>Annual real growth</i>	2.0%	2.4%	2.3%	1.9%	

Source: Eurostat.

In 2003 the network industries² in the EU-25 produced €832 billion value added which was 9.2% of GDP. This percentage had been constant since 1995. The network industries in Belgium produced €23 billion value added, which was 2.8% of the EU-25 network industries. Their share in the Belgian economy, however, has fallen from 9.8% in 1995 to 9.3% in 2003. At both the European Union and Belgian levels the volume growth of the network industries' value added has been stronger than the volume growth of GDP. This was more so in the other Member States than in Belgium (+1.4%-points and +0.4%-points per year, respectively). The major source was transport and communication, which grew twice as fast as the whole European Union economy. This is also shown in Figure 3, which shows the development of real value added since 1995.

2. as defined by the Eurostat 31-sector classification.

Figure 3 - Real value added growth of transport and utilities in the European Union (1995=100)



Source: Eurostat.

Real GDP growth in the European Union increased up until 2000 but has slowed since 2001. Total growth in eight years was 19.3%. The transport sector followed the same pattern, but at double the speed. The utilities sector closely followed GDP growth up to 1999, but stagnated afterwards. Its total growth in eight years was only half of that of the economy. In Belgium GDP growth followed the same pattern as in the European Union as a whole, though at a slightly slower pace, 16.2% in eight years. The transport and utilities sectors, however, showed different patterns. The transport (and communication) sector faced a 6.5% decline between 1995 and 1997, but then caught up to end with a total growth that was about the same as GDP. The utilities sector showed a rather odd pattern, both with respect to the Belgian economy

and the European Union utilities sector. It had an accelerated growth up to 2000, but then contracted by 12% over three years.

Table 4 - Number of persons employed in European Union transport and utilities (x1 000)

	Electricity, gas and water supply	Transport, storage and communication	Total network industries	Total employment	Share in total employment
EU-25					
1995	1 795	10 788	12 583	184 153	6.8%
1999	1 653	11 235	12 888	192 496	6.7%
2003	1 446	11 241	12 687	199 321	6.4%
Change 1995-2003	-349	453	104	15 168	
Annual average	-2.7%	0.5%	0.1%	1.0%	
Belgium					
1995	28	249	277	3 839	7.2%
1999	27	261	288	4 011	7.2%
2003	25	268	293	4 138	7.1%
Change 1995-2003	-3	19	16	299	
Annual real growth	-1.4%	0.9%	0.7%	0.9%	

Source: Eurostat.

Employment in the European Union network industries remained more or less constant between 1995 and 2003. In the utilities sector employment fell by about 350 000, whereas it increased by about 450 000 in the transport sector. This reflects the patterns of value added discussed above, plus increasing productivity. Net employment growth was 104 000, which is only 0.1% per year over eight years. As total employment in the EU-25 grew by a whole percentage per year (15 million jobs in eight years), the share of network industries fell, from 6.8% in 1995 to 6.4% in 2003. Still 12.7 million persons throughout the European Union work in a network industry. Belgium followed the same pattern but the employment growth in transport (19 000) substantially offset the contraction in utilities (3 000). Therefore, employment growth in network industries (0.7% per year) could follow total employment growth (0.9%), leaving the employment share constant at about 7.1%.

3.1.2. SELECTED NETWORK INDUSTRIES IN BELGIUM³

In the national accounts data of the Belgian INR/ICN aggregate data is broken down into 123 sectors.⁴ This clearly provides more detail than the Eurostat data, but at a national level only. In the main, data for the five selected network industries is kept separately. Only electricity and gas are aggregated into one sector.⁵

Value added created in the five selected industries constitutes 5.5% of Belgian GDP, employment constitutes 4.0% of Belgian employment (see Tables 5 and 6, respectively). These shares, however, have

3. This section is a revision from Gusbin *et al.* (2003).

4. INR = Instituut voor de Nationale Rekeningen; ICN = Institut des Comptes nationaux; In English: Institute for National Accounts.

5. Note that the incumbent of both sectors is the same company (Electrabel), so it is statistically hard to separate electricity and gas activities from each other.

fallen since 1995. Contrary to the usual case, real value added growth has been stronger than nominal growth. The reasons for this are the relatively favourable price developments in telecommunications and electricity. Telecom prices showed a 9% decrease, electricity prices remained stable. For the other network industries, real value added growth was below nominal growth.

Table 5 - Value added creation of selected network industries in Belgium (billion euro)

	Current prices			Constant prices ^a			
	Selected industries ^b	GDP	Share in GDP	Selectred industries	Annual growth ^c	GDP	Annual growth
1995	10.9	190.1	5.7%	10.4		203.4	
1999	12.6	218.7	5.8%	12.2	4.0%	221.5	2.2%
2003	13.8	249.9	5.5%	13.6	2.8%	236.5	1.6%

a. Prices of 2000.

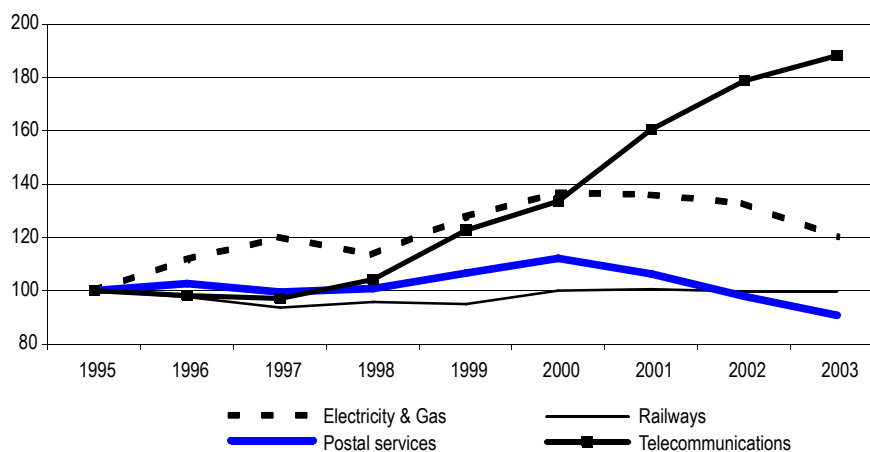
b. Electricity, Gas, Railways, Postal services, Telecommunications (NACE 40.1, 40.2, 60.1, 64.1, 64.2).

c. Average annual growth per four-year period.

Source: INR/ICN (calculation based on national accounts).

Between 1995 and 2003 the five network industries made a significant contribution to Belgian economic growth. The real value added growth of the five industries together was on average 4.0% per year up until 1999, and 2.8% thereafter (31% in eight years), whereas for real GDP this was only 2.2% and 1.6% (16% in six years). The strong growth was induced by telecommunications and energy, see Figure 4. The growth of the postal services stagnated after 2001, and value added growth at the railways stagnated during the whole period. In particular, there was strong growth in telecommunications, 8% per year on average, which means that the sector almost doubled in size over eight years.

Figure 4 - Real value added growth of selected network industries in Belgium (1995=100)



Source: INR/ICN (calculation based on national accounts).

In both the Belgian economy as a whole and the network industries, value added growth was stronger than employment growth, which indicates an increase in labour productivity. The difference, however, was significantly more marked in the network industries, where employment even fell by 1.6% in eight years and value added grew by 31%. Just as for value added, telecommunications and energy were the principal contributors.

In 2003, the five network industries employed 139 000 persons, see Table 6. This was 2 300 less than in 1995, which implies a contribution of -0.7% to the total Belgian employment growth of 323 000. Only in telecommunications has there been growth, on average 1.0% per year, which is a net growth of about 280 jobs per year. For the other sectors, employment has remained constant or has fallen since 1995. These outcomes underline the productivity growth, in particular in telecommunications and energy, where value added growth strongly outweighed employment growth. In sum, employment in the five industries as a whole fell by 0.2% per year, compared to a 1.2% increase for the total Belgian economy. Note that these employment figures refer to employees only, the self-employed are not included. In the network industries, however, there are relatively few self-employed people. In the postal sector there may be a few hundred self-employed couriers, but this is a very small number when compared to a total workforce of almost 50 000. There may also be a number of self-employed people in the telecommunications sector.

Table 6 - Number of persons employed in selected network industries in Belgium (x1 000)

	Telecom- munications	Railways	Postal services	Electricity & Gas	Selected industries	Total Belgium	Share in total
1995	28.0	41.4	50.8	21.1	141.3	3 139.6	4.5%
1999	27.9	40.2	49.5	20.3	137.9	3 318.5	4.2%
2003	30.2	41.6	49.4	17.7	139.0	3 461.5	4.0%
Changes: 1995-2003	2.3	0.2	-1.4	-3.4	-2.3	322.9	
Annual average	1.0%	0.1%	-0.3%	-2.2%	-0.2%	1.2%	

Source: INR/ICN (calculation based on national accounts).

The largest sector in terms of employment is the postal sector, with a total of 49 400 persons in 2003. Most of them are employed at the postal incumbent, the rest in courier services. Clearly, this is a very labour-intensive sector. Railways and telecommunications are next, each with roughly 25% of the total workforce of the five network industries. Note that employment in the railway sector covers the construction of railway lines and some smaller activities of the incumbent that are not related to railway transport proper. Electricity and gas together constitute the smallest sector in terms of employment. Because the incumbent and most of the distribution companies are involved in both electricity and gas, it is difficult to provide separate figures. On the basis of disaggregated industry data for 2000 and 2001, however, it may be stated that about 80% of the industry workforce is employed in electricity and 20% in gas (Gusbin *et al.*, 2003).

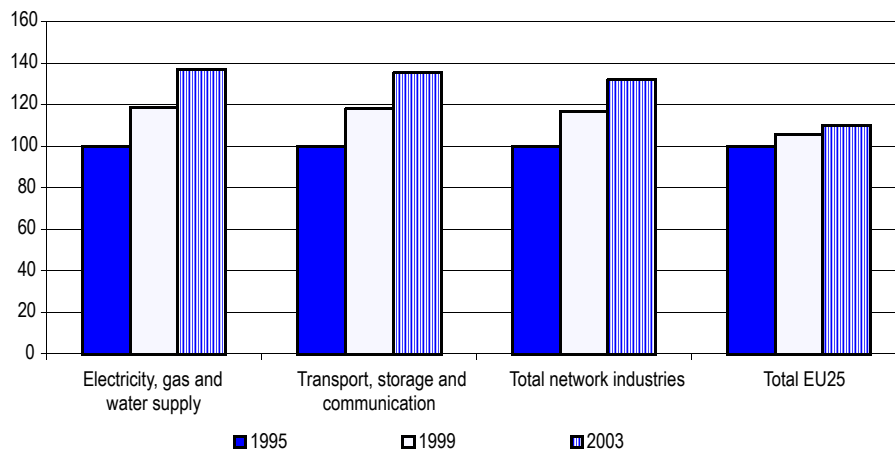
3.2. ECONOMIC PERFORMANCE

Industries and households that consume network industry products may benefit from efficient services and low prices. Productivity and prices are therefore conditions for the forward significance of network industries. This section outlines the development of both between 1995 and 2003. Productivity is derived from the value added and employment data discussed above, both at the broad Eurostat and the more detailed INR/ICN level. The price developments come from Eurostat's Harmonised Index of Consumer Prices (HICP). Hence, they only cover household prices and not, for example, industrial electricity or rail freight. HICP, however, still serves as an adequate indicator for price developments.

3.2.1. PRODUCTIVITY

Developments in productivity are illustrated in Figures 5 and 6. Both graphs clearly confirm the impression given above, that productivity growth in network industries must have been stronger than economy-wide productivity growth.⁶ Figure 5 illustrates developments between 1995 and 2003 at European Union level. During that period, labour productivity in both utilities and transport increased significantly: by more than three times as much as in all sectors put together. Total labour productivity growth in the European Union was on average 1.2% per year, whereas for utilities and transport this was 4.0% and 3.8%, respectively.

Figure 5 - Labour productivity of transport and utilities in the European Union (real value added per worker, 1995=100)



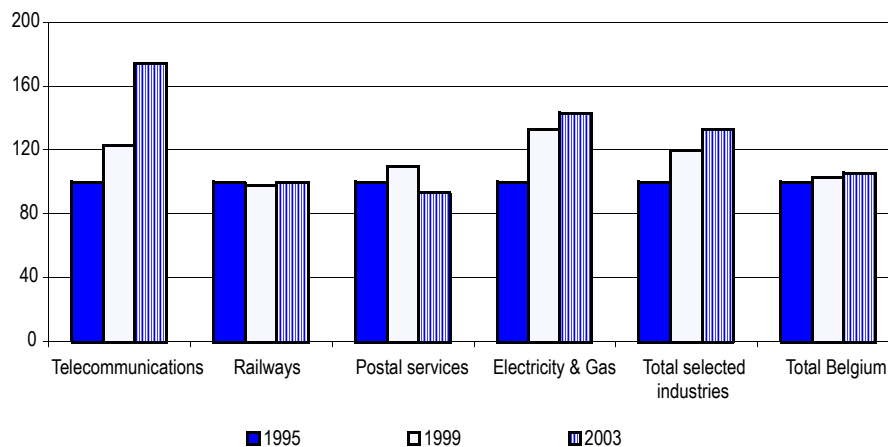
Source: FPB, based on Eurostat.

Note that productivity growth in both sectors as a whole has been slightly weaker than in each sector individually: 3.5% per year or 32% in eight years. The reason for this is that the share of transport has

6. Note that employment is measured in number of persons. A more precise measurement would be obtained by applying employment data in terms of hours worked. This is, however, not available from the given sources.

slightly risen, whereas the share of utilities has fallen, see also the difference in real growth in Figure 3 above. As the utilities sector has a significantly higher absolute labour productivity (€117 000 per worker⁷) than the transport sector (€54 000), the 1995 start level for average productivity has been relatively high. In such a case the growth for both sectors together may well be weaker than the growth for both sectors separately.

Figure 6 - Labour productivity of selected network industries in Belgium
(real value added per worker, 1995=100)



Source: FBP, based on INR/ICN.

On a more detailed level, and based on data for Belgium alone, a more differentiated picture is obtained, see Figure 6. There has been strong productivity growth in telecommunications and energy, but stagnation in railways and postal services. Between 1995 and 2003, total labour productivity growth in Belgium was on average 0.7% per year, which was below the European Union average (see Figure 5). For the selected network industries it was 3.6%, close to the European Union average, which also included water distribution and road, air and water transport. The strong value added growth and weak employment performance for telecommunications and energy imply an annual productivity increase of no less than 7.2% and 4.6%, respectively. For railways there was no productivity growth. For postal services there was a clear decrease after initial productivity growth.

3.2.2. PRICES⁸

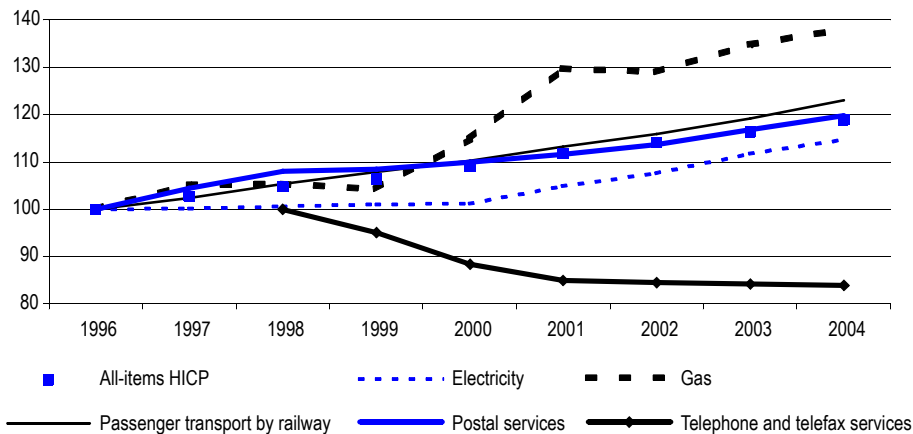
The development of consumer prices for network services is illustrated in Figures 7 and 8. As mentioned above, these data come from the Eurostat HICP and therefore do not include prices for industrial users. Gusbin *et al.* (2003) show from other sources that the development for industrial users is generally similar, although the price levels may be lower. Note that the HICP may in some cases be based on

7. Data for 2003 at 1995 prices.

8. This section is partly based on Gusbin *et al.* (2003).

incumbents' prices alone and not on entrants' prices (see Gusbin *et al.*, 2003). In these cases the prices may be an overestimation of the actual average market prices.

Figure 7 - Price developments in selected European Union network industries (Harmonised Index of Consumer Prices, 1996=100)

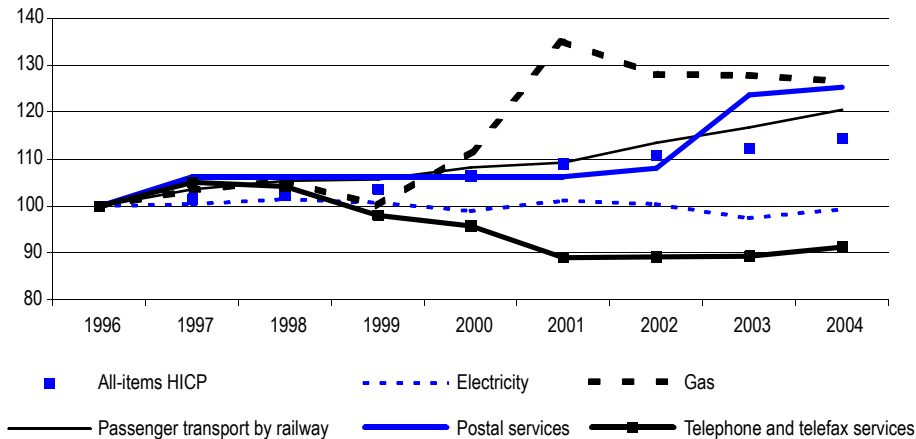


Source: Eurostat.

Price development in network services has traditionally been strictly controlled by government. This allowed for the adoption of pricing policies that serve the public interest. By doing so, government might achieve, for example, social and environmental objectives. Although market reform allows for a certain degree of price freedom, governmental price control may still be a major factor behind the developments illustrated in both graphs. Figure 7 shows developments in the EU-25, Figure 8 in Belgium.

Market reform is reflected most clearly in the price developments of telecommunication services. From the opening of the market in 1998 until now, there has been an average price decrease of 16% for all consumer services throughout the EU-25. Postal tariffs and railway fares are still strongly determined by governmental price control. They very closely followed the general price index. Electricity prices did so too, but only after stabilising up until 2000. This stabilisation actually implied a real price decrease, because the general price level had risen by 9% between 1996 and 2000. It might have been caused by market reform, but it should be kept in mind that there are many factors that determine electricity prices (Huvneers, 2005). Rising fuel prices have been an important factor in the 13% electricity price increase since 2000. This is reflected even more strongly in the marked changes for gas that reflect the traditional connection to oil prices.

Figure 8 - Price developments in selected Belgian network industries
(Harmonised Index of Consumer Prices, 1996=100)



Source: Eurostat.

As shown in Figure 8 price developments in Belgium basically followed the same path as the developments for the European Union as a whole, but there are some notable differences too. Prices for telecommunications services only started to fall after 1998. Up until 2004 this fall amounted to some 12%. This price decrease was dominated by the incumbent, which had to make a stand against some tens of market entrants. For electricity, the downward effect of a price reform was counterbalanced by the upward pressure of fuel prices. In contrast to the European Union average, the price level has remained stable up until now, which implies a real price decrease of 15%. For postal services, no tariff changes occurred between 1997 and November 2002. The introduction of a distinction between priority and non-priority mail then led to a one-off price increase of 14%. The price increase for railways closely followed the general price index. Finally, the marked changes for gas reflect the traditional connection to oil prices, but, in contrast to the European Union average, there has also been a downward effect of a price reform, which led to the price stabilisation of recent years.

4. POLICY ISSUES⁹

In Section 2.1 above it was mentioned that network industries have certain economic characteristics that are regarded as market failures: network externalities, natural monopoly and services of general interest. When such failures prevail market forces may not lead to the most efficient market performance. To obtain efficiency, government intervention is needed. In many cases this consisted of the creation of state-protected national monopolies, which often implied nationalisation of the whole industry.

9. This section is a revision of Gusbin *et al.* (2003) and Van der Linden (2005c).

In practice, however, this also did not lead to the most efficient performance. First, because of the inherent absence of competitive incentives, the monopoly structure often led to inefficiencies in production and excessive use of public funds. Second, technological progress influenced the above characteristics in such a way that the justification of a monopoly could be questioned. For example, technological progress might allow for efficient duplication of networks, with the effect that the natural monopoly ceases to exist (see *e.g.* IDEI, 1999). Last but not least, the occurrence of national monopolies was not compatible with the internal market and the competitiveness of the European Union economy. It had thus become clear that reform of network industries had to be considered. The main aim of this reform was to introduce open entry and competition where feasible. The reform should also regulate market segments where a natural monopoly applies and safeguard the public interest.

4.1. THE EUROPEAN CONTEXT

The current process of market reform, although justified from a mere national context as well, was driven by European Union initiatives taken since the late 1980s. Two developments determine this quest for reform: the creation of the internal market and the Lisbon strategy.

The creation of the internal market is one of the major aims of the Treaty of Rome. The internal market would contribute to the welfare of and, ultimately, a closer (peaceful) union among the peoples of Europe. The contribution to welfare was based on the theories of international trade and economic integration, which show that an elimination of trade barriers will provide a net increase of consumer and producer surplus in the countries involved (see *e.g.* Molle, 1990, and van der Linden, 1998).

In the creation of the internal market, special attention must be given to the network industries. Owing to strong intervention at the national level the European Union markets were patchworks of protected national monopolies. In this constellation consumers were captive to an incumbent and could not purchase from potential, more efficient suppliers. Partly for this reason, the European Union has taken initiatives that have led to a series of directives being issued since the early 1990s. These directives stipulated the gradual market opening of most network industries, a process that will at least last until the end of the present decade. In four of the five network industries selected for this volume the opening of the market is currently taking place. For the fifth, telecommunications, the market has already been opened but consideration still has to be given to the dominant market positions of (former) incumbents and sizable entrants.

The creation of the internal market is focused on the internal development of the European Union, the focus of the Lisbon strategy is external. The focus of the Lisbon strategy is on the competitiveness of the European Union on the world market. This is reflected by the strategic goal, "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". This goal includes the completion of the internal market and the structural reform of markets. In the Lisbon strategy, special attention is paid to for the network industries. It has been mentioned that network industries serve the public interest. An element of this is the movement of people, products and information. If this functions efficiently, it contributes to an efficient production of goods and services, and thus to the competitive economy that

the European Union aims to achieve. Therefore, structural reform is needed to create European network industries with the least possible number of market distortions.

4.2. ELEMENTS OF THE REFORM

As mentioned above, reform was considered to serve the European case, but also to overcome inefficiencies and adapt to changed (technological) circumstances. The challenge of this reform is to introduce competitive behaviour while safeguarding the public interest and avoiding monopolistic behaviour. Although the design of the reform differs according to country and industry, there are common elements, which are partly prompted by European Union regulation. A number of these elements concern the infrastructure: separation of infrastructure and downstream activities; access to the infrastructure; interconnection of networks; investments and maintenance. Other important common elements are: the phasing of the reform; the safeguarding of the public interest; the need for regulation.

As regards the *separation of infrastructure and downstream activities* it has been mentioned that there are network industries with a natural monopoly on infrastructure or parts of the infrastructure. For downstream activities a competitive market may then be possible. When there is a vertically integrated monopolist, however, the downstream activities of this incumbent company may get a more favourable network access than those of market entrants. Therefore, the reform aims in many cases to create an independent network operator by separating the incumbent into infrastructure and downstream activities. This separation may be on an accounting, legal or ownership basis. The latter of these should normally give the strongest guarantee of independence.

As regards *access to the infrastructure*, network operators under a natural monopoly have monopoly power over the downstream service providers. To enter the network with their services the downstream service providers pay an access fee and obtain the right to use the infrastructure under given conditions. However, under monopoly power the access fee may be too high, and the conditions more favourable for one service provider than for another. The latter may especially be the case when the network operator also acts as a downstream service provider, which is often the case for the (former) state monopolies. Optimal levels of access prices are important for an optimal development of the network, in the sense that the right incentives for investment are given and over- or underinvestment is avoided.

The issue of *network interconnection* is related to the previous issue. It applies to cases where the natural monopoly does not exist and there may therefore be several competing networks. This is the case in telecommunications, for example. A telecommunications network operator must compete to attract end-users. Once he has attracted his customers, he has monopoly power over other network operators, when they wish to reach his customers. In that case, the other operator must have access to his network, and he may exert market power over that operator. This is the issue of network interconnection. IDEI (1999) and Laffont & Tirole (2000) give extensive theoretical analyses of the access and interconnection issues for telecommunications.

In many cases the reform is *phased over a certain number of years*. Bergman *et al.* (1998) divide the timetable into three phases: the first phase is the initial situation of monopoly; the second is the gradual transition from monopoly to competition; the third is the ultimate situation of competition. So, in the second phase the market is being opened. This is done gradually to prepare the incumbent, the potential

entrants, the customers and other stakeholders such as trade unions in a gradual way for the new situation. Bergman *et al.* state that not all industries may ultimately enter the third phase.

Safeguarding the public interest is done by imposing universal or public service obligations (USO and PSO, respectively). Although there is overlap between the two, there is a clear distinction (see Ilzkovitz *et al.*, 1999). The concept of USO is well defined and relates to minimum service levels of good quality, available for all citizens and at an affordable price. The concept of PSO is less precisely defined and has a wider scope than USO. Public services refer to all cases where government considers market failures to be such that the private sector alone will not serve the market efficiently (Ilzkovitz *et al.*, 1999). USO and PSO can be imposed and financed in several ways. For network industries they may be imposed on certain companies, either by law or contracts. They may, however, also be auctioned among interested parties. Financing may be provided by direct government transfers or by funds that are provided by user levies.

For all the above elements, a certain level of (new) *market regulation* is crucial. When the network operator has market power, pricing and access conditions must be monitored for cost-orientation and equal treatment. This is particularly the case when the network operator also acts as a downstream service provider, in other words, when there is no (full) separation of infrastructure and downstream activities. As argued by Bergman *et al.* (1998), during the second phase of market opening there is a trade-off between industry-specific market regulation and generic antitrust policy. In the third phase the latter would be sufficient. In addition, the imposition and financing of USO and PSO require regulation.

Therefore, in virtually all network industries there is a *market regulator*, which has tasks that are specific to the industry and to the stage of market opening. The role of this regulator is clearly crucial in shaping the optimal conditions for the functioning of the market. To play this role effectively the regulator must fulfil certain conditions. It must have technical competence as regards the operation of the network. It must have sufficient means to carry out its tasks. It must have sufficient information. Last but not least, it must be independent. Typical instruments at the disposal of the regulator are control, licensing, arbitrating and capacity assignment. These instruments are to be used to ensure sufficient competition and equal access, and to safeguard the public interest.

4.3. SOCIAL ISSUES

Although it can be argued that market reform may be beneficial from an economic point of view, there are some social implications that should be addressed. The most important may be *employment*. When reforming network industries it is almost unavoidable that jobs are lost and labour conditions deteriorate. This may, however, lead to greater competitiveness in the economy as a whole and an acceleration of growth in later years. The network industry itself, as has happened in telecommunications, may become a growth sector again. Nevertheless, it is important that consideration is given to the workers who lose their jobs, to give them sufficient support when changing their careers.

A second important implication is the provision of *public services*. When a market is opened for competition the provision of public services (or at least the quality of it) may be at risk when they cannot be produced at a profit. As already indicated in the previous section, this is an element of regulatory policy. In many cases a certain level of public, or universal service is determined as a minimum supply condition for some or all producers. An example is the number of trains per hour that must stop at a

certain station. When necessary, the service may be subsidised. The guarantee of public service provision may indeed be unified with market reform, and it does not seem important whether the producer is a public or a private company.

The third and final social implication is closely connected to this. In a number of cases, market reform is accompanied by the *privatisation* of one or more public companies. In that case there is a risk that government loses control over activities of considerable public interest, and the privatised company strives to maximise its profits rather than serve the public interest. So, in the event of privatisation a certain degree of regulation is required. The privatised companies are then bound to this regulation and may only maximise their profits under certain conditions. An example is the access to electricity networks, which are privatised in many countries. The access regulation (as prescribed by European Union legislation) warrants efficient, cost-based pricing.

5. OVERVIEW OF THE PRESENTED PAPERS

The paper by Fabienne Ilzkovitz and Gaëtan Nicodème (Chapter 3) adopts a European perspective. The central theme of this paper is concern over the apparent perception amongst the European public that reform is detrimental to employment and public services. The European Commission has initiated an annual horizontal evaluation of the impact of network industry reform. The paper starts by illustrating, both on the basis of theory and economic studies, how market reform contributes to efficiency and to the realisation of the Lisbon objectives. It highlights the steps the European Union has taken since 1990 to reform network industries. This has been carried out through the introduction of internal market directives, although the European Union is dependent on Member States as regards implementation. Finally, an overview of the results of the most recent horizontal evaluation is made. Market opening has led to market entry by new competitors, but incumbents maintained their dominant positions for the time being. It has also led to a downward impact upon prices and price convergence. Low income households and small users have clearly benefited. Productivity has also increased. The impact on employment, however, has been somewhat ambiguous. Here both up- and downward trends have been noted, but there have certainly been no dramatic job losses. A recent study calculated a 0.3% positive employment impact upon the economy as a whole between 1990 and 2001. The creation of a framework for effective competition is a precondition to achieving this kind of positive impact.

The paper by Jan van der Linden (Chapter 4) adopts a Belgian perspective. He tries to draw lessons based on the experience of other countries that could prove useful to Belgium, and also makes a number of recommendations. The most important conclusion drawn is that market reform of network industries can, indeed, have a positive economic impact, but that it very much depends on the way the reform is carried out. The paper starts with a theoretical account of how market reform contributes to efficiency, thanks to better allocation and a more efficient use of labour and capital. The analysis is approached from three angles. Firstly, the results of a survey of academic studies are discussed. Most studies confirm the favourable impact as predicted by economic theory. However, it also notes that in many cases employees in the industries concerned pay a price for the reform. Secondly, international benchmarking is applied. This benchmarking also confirms the theoretical predictions, but shows that the method and speed of reform are crucial factors in ensuring the reform has a positive impact. A gradual reform process seems to produce a better outcome than full deregulation 'at once'. With regard to the method of reform,

governments should create a framework for effective competition, but at the same time safeguard public interests. Thirdly, a careful examination of reform and its economic impact in Belgium is carried out. Although the applied models and the outcomes they produce require further research, the analysis indicates that the economic impact may indeed be significant: a clear acceleration of investments and productivity growth, and maybe some tens of thousands of new jobs. In a final, policy oriented section, the present state of reform and regulation in Belgium is analysed. This suggests that, depending also on the method of reform adopted and the quality of regulation, some risks are involved that could reduce the effectiveness of reform.

The paper by Greg Swinand, Patrice Muller and Pau Salsas (Chapter 5) analyse the issue of entry barriers in the Belgian electricity sector. They argue that the existence of entry barriers is more detrimental to the functioning of the market than market concentration. In a concentrated market where there are no entry barriers, players have to take account of the threat of entry which increases the likelihood that they will behave competitively. Having analysed the Belgian electricity market based on this reasoning, they identified a number of entry barriers. Amongst these are the vertical integration and dominance of the incumbent player, the lack of a level playing field in terms of access to information for entrants, the 'Not In My Backyard' attitude, and the relatively complex regulatory structure. Special attention is also paid to the role of the balancing mechanism and the lack of a liquid spot market. A liquid spot market allows price and quantity risk to be managed, which is of fundamental importance to a potential entrant in the electricity market. The paper concludes with a numerical illustration of the effects entry barriers in Belgium have. For instance, it highlights that the wholesale price for a 400 MW CCGT power station has to be between roughly €43 and €53 per MWh to attract entry, after having taken risk factors into account. In reality, however, the price was only about €41.

The paper by Peter Andersson (Chapter 6) analyses the issue of universal services and market opening in the postal sector from a Swedish perspective. Although there are doubts about the ability to maintain universal service provision in a liberalised market, Andersson argues that the two can happily coexist. This is illustrated by the case of Sweden, where the market was opened more than ten years ago, and the incumbent still fulfils its Universal Service Obligations (USO) without operating subsidies. Important drivers behind this phenomenon are the high volume of mail per capita and the high level of cost efficiency with the incumbent. So, any threats to universal service provision relate to volume and efficiency, rather than to liberalisation. USO may even be considered an opportunity for a postal operator, since full national coverage of the network is a feature which attracts customers. In other words the benefits of USO can help outweigh the costs. In countries with low per capita volumes - the number of such countries may very well increase in the future - there may be no room for entry. Consequently, their postal markets may have to remain monopolies. This, however, does not preclude the adoption of a regulatory policy aimed at increasing efficiency. The author concludes by stating that a delicate balance needs to be struck between achieving the benefits of competition and economies of scale, and maintaining the USO, which requires a carefully designed regulatory framework.

REFERENCES

- BERGMAN, L., C. DOYLE, J. GUAL, L. HULTKRANTZ, D. NEVEN, L.-H. RÖLLER & L. WATERMAN, *Europe's Network Industries: Conflicting Priorities*, Centre for Economic Policy Research, London, and Center for Business and Policy Studies, Stockholm, 1998.
- CTcon, *On the Liberalisation of Clearing, Sorting and Transport*, Brussels and Vallendar, 1998.
- GUSBIN, D., Ch. KEGELS, P. VANDENHOVE, J. VAN DER LINDEN & M. VAN OVERBEKE, *Network Industries in Belgium: Economic Significance and Reform*, Working Paper No.1-03, Federal Planning Bureau, Brussels, 2003.
- HUVENEERS, C., *Réforme du Marché de l'Electricité en Belgique: Leçons de l'Espagne, de l'Allemagne et de la Grande-Bretagne*, Working Paper Nr.9-05, Bureau fédéral du Plan, Bruxelles, 2005.
- ILZKOVITZ, F., R. MEIKLEJOHN & U. MOGENSEN, *Liberalisation of Network Industries: Economic Implications and Main Policy Issues*, European Economy, No.4, 1999.
- INSTITUT D'ÉCONOMIE INDUSTRIELLE - UNIVERSITÉ DES SCIENCES SOCIALES DE TOULOUSE (IDEI), *Network Industries and Public Services*, European Economy, No.4, 1999.
- LAFFONT, J.-J., & J. TIROLE, *Competition in Telecommunications*. MIT Press, Cambridge, 2000.
- MISTIAEN, P., *Hervorming van de Spoorwegsector in België: Lessen uit Groot-Brittannië, Duitsland en Zweden*, Working Paper Nr.10-05, Federaal Planbureau, Brussel, 2005.
- MOLLE, W., *The Economics of European Integration: Theory, Practice, Policy*, Dartmouth, Aldershot, 1990.
- VAN DER LINDEN, J.A., *Interdependence and Specialisation in the European Union: Intercountry Input-Output Analysis and Economic Integration*, Labyrinth, Capelle aan den IJssel, 1998.
- VAN DER LINDEN, J., *Hervorming van Netwerkindustrieën: Theoretisch Kader*, Working Paper Nr.8-05, Federaal Planbureau, Brussel, 2005a.
- VAN DER LINDEN, J., *Hervorming van de Posterijen in België: Lessen uit Zweden en Nederland*, Working Paper Nr.11-05, Federaal Planbureau, Brussel, 2005b.
- VAN DER LINDEN, J., *Markthervorming in Netwerkindustrieën in België / Réforme de Marché dans les Industries de Réseau en Belgique*, Planning Paper Nr.98, Federaal Planbureau / Bureau fédéral du Plan, Brussel / Bruxelles, 2005c.

CHAPTER 2

PROCEEDINGS OF THE COLLOQUIUM

Emmanuel de Bethune, Belgian Central Council of the Economy (CCE), Brussels

The European Economic and Social Committee (EESC), the Federal Planning Bureau (FPB) and the Central Council of the Economy (CCE) jointly organised on 1 and 2 June 2005 a colloquium at the EESC on: *The Lisbon strategy: a driving force behind market reforms in network industries.*

This conference was organised in four sessions, dealing each with a different subject. The four subjects were:

- A European framework for the reform of network industries.
- Economic and social impact of market reforms in network industries on the economy as a whole.
- Specific issues of market reforms in network industries.
- The economic and social impact of market reforms in various network industries.

[Programme for the morning session: Wednesday, 1 June 2005](#)

Morning session chaired by Roger Briesch, Vice-President of the European Economic and Social Committee.

Subject: *A European framework for the reform of network industries.*

- 10.00 a.m. Introduction by Roger Briesch, Vice-President of the European Economic and Social Committee.
- 10.10 a.m. Introduction by Robert Tollet, President of the Central Council of the Economy.
- 10.20 a.m. Contribution by Raymond Hencks, President of the Luxembourg Economic and Social Council, for the Luxembourg Presidency of the Council of the European Union.
- 10.50 a.m. *Network industries and the Lisbon strategy* by Anne Houtman, Director for the Elaboration of Horizontal Policies, European Commission, DG Internal Market.
- 11.20 a.m. *Public services and the services market: conflict and conciliation* by Philippe Herzog, President of "Confrontations Europe".
- 11.50 a.m. Question time.

[Programme for the afternoon session: Wednesday, 1 June 2005](#)

Afternoon session chaired by Henri Bogaert, Federal Planning Commissioner.

Subject: *Economic and social impact of market reforms in network industries on the economy as a whole.*

- 2.00 p.m. Introduction by Henri Bogaert, Federal Planning Commissioner.
- 2.15 p.m. *Importance of market reforms in Belgium* by Marc Verwilghen, Minister of Economic Affairs.
- 2.30 p.m. *The economic impact of market reforms in network industries,*
An evaluation of market performance by network industries: a European perspective by Fabienne Ilzkovitz, European Commission, DG ECFIN,
An economic analysis of reforms in network industries in Belgium: a policy analysis and survey by Jan van der Linden, Federal Planning Bureau.
- 3.30 p.m. Coffee.
- 3.45 p.m. *The social impact of market reforms in network industries,*
Egbert Holthuis, European Commission, DG Employment,
Marian Krzaklewski, European Economic and Social Committee.
- 4.45 p.m. Panel discussion.
Discussion between representatives of civil society: Umberto Burani (EESC), Michel Nollet (EESC), Jean-François Hoffelt (EESC), Caroline Ven (VBO), Johan Bortier (UNIZO), Michel Bovy (ACV).
- 5.45 p.m. Question time.
- 6.00 p.m. Reception.

[Programme for the morning session: Thursday, 2 June 2005](#)

Morning session chaired by Henri Bogaert, Commissioner of the Federal Planning Bureau.

Subject: *Specific issues of market reforms in network industries.*

- 9.00 a.m. *The issue of market entry with application to the electricity sector,*
Greg Swinand, London Economics,
Bernardo Hernández Bataller, European Economic and Social Committee,
Christine Vanderveeren, Commission for the Regulation of Electricity and Gas.
- 10.10 a.m. *The issue of universal provision of services with application to the postal sector,*
Peter Andersson, University of Linköping,
Brenda King, European Economic and Social Committee,
Nathalie Dumont, Belgian Institute for Postal Services and Telecommunications.
- 11.20 a.m. Coffee.
- 11.35 a.m. *The issue of investment with application to the railway sector,*
Marcel Verslype, Director of the European Railway Agency,
Staffan Nilsson, European Economic and Social Committee.

Programme afternoon session, Thursday 2 June 2005

Afternoon session, chaired by Roger Briesch, vice-chairman of the European Economic and Social Committee.

Subject: *The economic and social impact of market reforms in various network industries.*

2.15 p.m. Panel discussion.

Discussion between representatives of civil society: Eva Belabed (EESC), Brenda King (EESC), Francesco Petringa (EESC), Tony Vandeputte (EESC), Walter Aertsens (ELIA), Astrid De Lathauwer (Belgacom), Gérard Gelmini (CGSP), Michel Bovy (ACV).

3.35 p.m. Questions.

3.45 p.m. Concluding comment by Carole Coen, private office of Johan Vande Lanotte, Minister for Public-Sector Enterprises.

4.15 p.m. End of the conference.

1. A EUROPEAN FRAMEWORK FOR THE REFORM OF NETWORK INDUSTRIES

1.1. INTRODUCTION BY THE PRESIDENTS

The morning session on the first day of the conference was chaired by Roger Briesch, Vice-President of the EESC, who together with Robert Tollet, President of the CCE, and Raymond Hencks, President of the Luxembourg Economic and Social Council, argued that the European Union was faced with economic stagnation and new foreign competitors. All that had resulted in an attitude of scepticism on the part of the people of Europe with regard to European Union policy and reforms, and reforms in the network industries in particular. Many people suspected that the reforms would lower the quality and accessibility of the provision of public services and would have a negative impact on the development of the European social model.

Those opinions and fears were used to campaign against the European Constitution in France and the Netherlands. The results of the referenda in these countries demonstrated the distance between the European Union and its citizens, and how uninformed its people were about the Union and its policies. It also showed the need to involve the people more deeply in the economic and political debate, both at the national and the European level.

Organised civil society represented a huge potential for the Member States and for the European Union to be used to reach out to the people, involve them in economic and social decision-making, explain to them the reasons for opening up markets, showing the advantages as well as ways to reduce or avoid the negative impact of the reforms on the social dimension, finding a suitable compromise between economic needs and social expectations.

1.2. NETWORK INDUSTRIES AND THE LISBON STRATEGY BY ANNE HOUTMAN

It was then the turn of Anne Houtman, Director for the Elaboration of Horizontal Policies, European Commission, DG Internal Market, to explain in greater detail the connection between the Lisbon strategy and European Union policy on network industries. Anne Houtman pointed out that a modern economy could only function if it were supported by good network industries, which offered people the chance to take a full part in economic and social life. That was why the network industries had been one of the key priorities from the very beginning of the formulation of the Lisbon strategy, which had set itself the goal by 2010 of making the European Union the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. From March 2000 the Lisbon strategy had placed the emphasis on speeding up, on the one hand, liberalisation of the gas and electricity sectors, as well as postal and transport services and, on the other hand, the improvement of infrastructure and the information society with, in particular, the e-Europe initiative. Parallel with that strategy, a communication had been immediately issued on the need for and maintenance of services of general interest.

The European Union's integrated guidelines (April 2005), which had come into being after the 2005 Spring European Council, placed particular emphasis on the need for a modern infrastructure. The aim was to make Europe more attractive for new investments, as well as to improve the mobility of people, services, goods and the diffusion of knowledge over the whole area of the European Union. Trans-European networks with good interconnections and interoperability provided the basis for a good and modern European infrastructure. However, in order to bring that about, new investments had to be made at transnational and national levels. At the transnational level, emphasis was placed on the 30 priority trans-European transport networks and the cross-border Quick Start projects (transport, energy and broadband projects adopted as part of the Prodi Commission's European initiative for growth). At the national level, the national production capacities and infrastructure of the network industries had to be improved. However, the necessary investment would only be able to take place and thus be efficient in the long run if it was coupled with a long-term system of charging for network services.

Indeed, network industries were the sectors where the three dimensions of the Lisbon strategy were the most clearly present. They were therefore also pre-eminently the sectors to achieve synergy between economic, social and environmental factors. The link between those three dimensions still remained, however, in reality one of the weak points of the strategy. Nevertheless, the choice made that year to focus on competitiveness was certainly no obstacle to progress in the social and environmental areas. Policymakers therefore had to ensure that the measures that entered into force were compatible with the three dimensions in the long term. A striking example was the sharp increase in oil prices, which clearly indicated the economic need for work to be done on energy efficiency. In that connection, charges for network services had to correctly reflect social and environmental costs. By placing greater emphasis on environmental considerations in public tenders, it should be possible to encourage economically and environmentally sustainable development by extra support for companies doing innovative work in that area. In that way, European companies with a competitive advantage in the field of renewable energies, could further extend it. The accessibility of services of general interest was a *sine qua non* for social cohesion and that was true in particular of opportunities for access to knowledge via education and research. In order to strengthen social cohesion, the education and research systems had to be further

improved. In that connection, emphasis should be placed on the opportunities offered by Information and Communications Technology (ICT) and the opportunities for access to the Internet.

In order to realise the full potential for synergy between the economic, social and environmental dimensions in the European network industries, proper coordination of instruments for the implementation of the strategy was required. A distinction could be made between policy-making, regulatory and financial instruments. Those instruments were to be found at both national and European levels, and in the public as well as the private sectors.

The regulations and legislation on network industries were virtually complete, the biggest shortcomings being in the implementation of the regulations.

Increasingly suitable financial instruments were becoming available. That was made possible first and foremost by the further integration of capital markets, which led to easier access to capital and cheaper financing opportunities. Secondly, the legal framework for public-private partnerships had been improved, and consequently there were more private funds available for those projects. Thirdly, the European Investment Bank (EIB) had become more closely involved in the financing of cross-border networks. Finally, the contribution of the three European Community funds to investment in the network industries was certainly not negligible: the European Regional Development Fund (communication and transport networks), the Cohesion Fund (environment and transport networks, for the 13 states with less than 90% of the EU-25 GDP) and Instrument for Structural Policy for Pre-accession, for countries still to join the European Union.

It could therefore be concluded, on the one hand, that the quality of the network industries was of fundamental importance for the success of the Lisbon strategy. On the other hand, however, those sectors needed energetic implementation of the policy-making, regulatory and financial instruments of the Lisbon strategy in order to be able to develop to the full.

In the future, therefore, all parties involved would need to show strong commitment to bringing about the various synergies between the economic, social and environmental dimensions in the network industries by means of good governance of the Lisbon strategy's instruments.

1.3. PUBLIC SERVICES AND THE SERVICES MARKET: CONFLICT AND CONCILIATION BY PHILIPPE HERZOG

The contribution of Anne Houtman was followed by a call from Philippe Herzog, President of "Confrontations Europe", concerning the challenges and problems of reconciling public services with the liberalisation of network and other services.

Philippe Herzog wished, first of all, to express his regret at the French no vote against the European Convention's draft Constitution. He said that he fully identified himself with the call by Raymond Hencks (see above) to give civil society a more important role in communicating and implementing European Union policy, with a view to narrowing the gap between the people and the European Union. He pointed out, however, the duty of civil society to fulfil that role with great seriousness in order to truly influence European policy.

One of the great challenges facing the European Union in guaranteeing social cohesion was to reconcile public services with the liberalisation of (network) services. That was certainly no easy matter. In order to succeed in that task, European Union citizens had first to become aware of the diversity of national situations and develop a mutual respect for each other's systems of public services. In France there was a complete ignorance about how services of general interest functioned in the other Member States. Only through a better knowledge of each other's systems and a greater mutual respect, would it be possible to make progress together. Secondly, people also had to recognise that the pressure to adapt national systems did not come from Europe, but rather from technological change and the new demands of our societies. Mobile telephony was so far not one of the public services offered in the Member States, although a certain need existed. The same was also true of goods transport by rail, although that should in some cases be a public service in order to respond appropriately to certain problems concerning sustainable development.

There had in the past clearly been insufficient evaluation of the efforts being made in the various countries to reconcile liberalisation with public service. Liberalisation in the United Kingdom, which went hand-in-hand with strict regulation, was complete anathema in France. The United Kingdom was, however, a good direct lesson on how it was possible, with varied success, to reconcile liberalisation with public service. It was crucial to learn from the positive and negative experiences in the United Kingdom. The European Council, the Commission, the European Parliament and the national governments needed to take greater account of the diversity of systems, the changes in those systems and the efforts to reconcile liberalisation and public service in the various Member States. This could only be done by a systematic democratic evaluation (not just by and for experts) of the connection between liberalisation, public service and social cohesion in and between the various Member States.

2. ECONOMIC AND SOCIAL IMPACT OF MARKET REFORMS IN NETWORK INDUSTRIES ON THE ECONOMY AS A WHOLE

The afternoon session on the first day was chaired by Henri Bogaert, who pointed out that the preparatory work for the discussions of the afternoon session and of the following morning, was provided by six publications by the Federal Planning Bureau (FPB)¹. Those studies had been carried out by the FPB at the request of the Central Economic Council (CCE) in order to provide objective data to colloquia and discussions between social partners on the network industries. The afternoon session, which was initiated by Marc Verwilghen, Minister of Economic Affairs, dealt mainly with the social and macroeconomic impact of market reforms in network industries, whilst the morning session that followed was mainly devoted to the microeconomic consequences of reforms in three network industries, more specifically the electricity, postal and rail sectors.

1. Jan van der Linden, Planning Paper 98: Markthervorming in netwerkindustrieën in België, 2005, 104 pp.; Jan van der Linden, Working Paper 8-05: Hervorming van netwerkindustrieën: theoretisch kader, 2005, 64 pp.; Christian Huveneers, Working Paper 9-05: Réforme du marché de l'électricité en Belgique. Leçons de l'Espagne, de l'Allemagne et de la Grande-Bretagne, 2005, 63 pp.; Peter Mistiaen, Working Paper 10-05: Hervorming van de spoorwegsector in België. Lessen uit Groot-Brittannië, Duitsland en Zweden., 2005, 78 pp.; Jan van der Linden, Working Paper 11-05: Hervorming van de posten in België. Lessen uit Zweden en Nederland, 2005, 51 pp.; a final document to be published in March/April 2006.

2.1. IMPORTANCE OF MARKET REFORMS IN BELGIUM BY MARC VERWILGHEN

Marc Verwilghen, Minister of Economic Affairs, spoke about the importance of market reforms in Belgium. As federal minister, Marc Verwilghen is responsible among other things for telecoms and energy. As the minister concerned, his department has had to convert various European Union directives into Belgian law. This has had the dual purpose of, on the one hand, introducing effective competition in the network industries by introducing simple, common rules concerning access, authorisation, the effective division between operational functions and effective supervisory bodies and, on the other hand, of ensuring the quality of services by effective regulation of consumer protection and universal services.

In the telecoms sector reforms had already begun in the 1990s. Nevertheless, the Commission concluded in 1999 that the opening-up of network markets in most European Union Member States was proceeding too slowly. The slow progress of reforms (*inter alia* in Belgium) provided the Commission with an extra argument to take an additional step in the direction of the complete opening-up of those markets. The new regulatory package for electronic communications was adopted at the end of 2001. The deadline for the changeover was set for 24 July 2003. The minister himself noted the passing of the changeover deadline in Belgium, when he entered office, but was satisfied that this previous backlog had been made up. He hoped as well that the Commission would allow Belgium time to experiment with the working of the new regulation, and would not propose that everything be changed again after the review in 2006. Moreover, time was needed to assess the impact of the current rules on the functioning of the market, and the quality and price of services.

In the energy sector too, serious reforms had taken place in the energy market over the last few years. The first phase of reforms had been completed (June 2005), by the transposition of the gas and electricity directives into Belgian law.

The first phase of liberalisation began in Belgium on 29 April 1999, the date of the transposition into Belgian federal law of the first European gas and electricity directives. The objectives which the European Union had in mind were to establish an internal market for gas and electricity, to guarantee continuous security of supply, to respect European and international environmental commitments and to ensure a competitive position for European companies by competitive energy prices.

In the context of reform of both energy markets, Belgium, being situated in the heart of Europe with an important role as a transit country for energy, could not lag behind. The Belgian government fully supported the European objectives and joined in the liberalisation drive.

The first phase was over and a new phase of liberalisation was about to begin. On the basis of experience in both a positive and a negative sense, new measures had been taken to ensure equal competition at the level of production, to avoid discriminatory tariffs, to offer extra social benefits to vulnerable end users and to enable a free choice for the consumer.

It was quite clear from the July 2003 policy declaration that Belgium was pressing ahead with the second phase. The government wished to increase market liquidity by increasing the cross-border capacity of transport and transmission networks, establishing a legal framework to promote investment in the transmission and transport network, as well as achieving greater price stability by introducing multinational tariffs, more efficient management of existing networks and, finally, clearer definition of the

policy-preparatory tasks which were the job of the administrative authorities on the one hand, and the purely regulatory task which, on the other hand, were the job of the sector regulator.

The Lisbon strategy placed emphasis on the completion of the internal market. With that in mind, in early 2005 Belgium had signed a declaration of intent with France and the Netherlands to build together an efficient energy market in the centre of Europe.

In order to achieve those plans within the Lisbon strategy, progress had to be made at three levels. First of all, the Belgian energy market had to be completely deregulated. The minister feared, however, that the slower pace of liberalisation of the electricity and gas markets in Wallonia and Brussels could have negative repercussions for the Belgian economy.

Secondly, all measures and situations that restricted competition should be progressively eliminated. It was therefore important to properly define the role and mission of the sector regulator. The regulator should perform no policy preparation work for that remained the responsibility of the minister. The regulator should, however, monitor whether there was effective competition on the energy markets and where necessary encourage such competition. The assessment of dominant positions should remain the task of a strong competition authority.

Finally, extra R&D efforts had to be made in the network industries, *inter alia* in the field of sustainable development and renewable energies. Those R&D efforts could, after all strengthen the Belgian economy, through more employment and a stronger competitive position on the international market.

The completion of the internal market occupied a central position in the Lisbon strategy. The further removal of the remaining barriers would ensure further increase in economic growth and employment. It was estimated that further liberalisation of the energy and telecoms sectors could increase GDP by 0.6%. The minister was therefore also convinced that correct implementation of the Lisbon strategy was important in order to take up the challenges of our current global context.

2.2. THE ECONOMIC IMPACT OF MARKET REFORMS IN NETWORK INDUSTRIES

2.2.1. AN EVALUATION OF MARKET PERFORMANCE BY NETWORK INDUSTRIES: A EUROPEAN PERSPECTIVE BY FABIENNE ILZKOVITZ

Minister Marc Verwilghen's speech was followed by a contribution by Fabienne Ilzkovitz (European Commission, DG Ecfm). The aim of Fabienne Ilzkovitz's presentation was to assess the achievements of the European network industries. She proposed to do that on the basis of three points. Firstly, she wished to examine how the reforms in the network industries would fit in with the whole of the Lisbon strategy. Secondly, she intended to outline how the Commission had carried out its horizontal evaluation of the network industries. Finally, she aimed to point to a number of results, which clearly reflected of achievements in the network industries.

The connection between reforms in the network industries and the Lisbon strategy could be approached in terms of both economics and policy issues. From the economic point of view, those sectors were of great importance to the European economy: they provided 8% of value added and 5% of employment in

the European Union. In addition, they provided services to a large number of sectors and activities. Reforms which increased efficiency in the network industries would, therefore, also have positive effects on other sectors, and thus on the European economy, and ultimately on the achievement of the Lisbon strategy's objectives.

Increased competition raise a company's efficiency in three ways. In the first place, more competition result in the disappearance of monopolistic price setting and consequently a reduction in prices and an increase in consumption and production (by means of more efficient allocation). Secondly, competition leads to the same amount being produced with fewer inputs (with an increase in production efficiency). Thirdly, increased competition encourages managers and employees to produce more efficiently (for instance by innovation), which ultimately results in lower production costs (through an increase in dynamic efficiency).

Although the reforms in the network industries had already been launched at the beginning of the 1990s, the Lisbon strategy had provided an additional impulse to reforms in the network industries. At the European Council meeting in Lisbon in 2000, the heads of state and government called for speeding up of the liberalisation of the gas, electricity, postal and transport markets, as well as for a complete opening up of the telecommunications market. The Lisbon summit was followed by the Barcelona summit, where deadlines were set for the opening-up of the gas and electricity markets. Member States were also asked in the Broad Economic Policy Guidelines (BEPG), which set down the priorities for Member States for reaching the Lisbon strategy's growth and employment targets, to implement in full the proposed reforms in the network industries as soon as possible, with a view to achieving stronger competition and a better integrated market. It was important, to eliminate the backlog in transposition of the European directives into the various national legislations.

The opening up of the network industries to competition had gone hand-in-hand with an extended period of reflection on the future of services of general interest. This discussion was initiated by the Commission with the publication of a Green Paper that asked explicitly whether or not there should be an European Union Framework Directive on services of general interest. There were numerous reactions on the part of civil society to the Green Paper and, on the basis of those responses a White Paper was produced by the Commission which contained the definitions used by the Commission in implementing its policy with regard to services of general interest. It was noted among other things that guarantees had to be given regarding quality, security of supply and social cohesion, and that the performance of those services had to be evaluated. To date, no draft Framework Directive had been published by the Commission, as opinions on the subject were sharply divided.

As her second point, Fabienne Ilzkovitz indicated how the Commission had carried out its horizontal evaluation of the network industries. The evaluation had been explicitly requested by the Council of Ministers in Nice (December 2000). The evaluations had to examine the consequences both for the economy and for universal services (quality, access and social cohesion). The evaluation was essential in order to conduct a balanced debate with all players, and in order to gain a better understanding of the true consequences of the reforms. The costs of reforms, such as the loss of jobs, were often more clearly felt in the short term than the longer-term benefits.

The methodology for the evaluation of the network industries had been defined at the European Council meeting in Laeken (2001). The methodology provided for a sectoral, a horizontal and a benchmarking evaluation. The horizontal evaluation had been carried out for the first time by the Commission in 2001 and since then every year. The evaluation focused on three areas: the achievements of the market (by means of price, productivity and employment changes, ...), the level of services of general interest and consumer perceptions of the reforms.

As her third point, Fabienne Ilkovitz commented on the results of the reforms in the network industries. She pointed out that the structures of the network industries were changing only gradually. Depending on the time of the legal opening of the network industries, new service providers were gradually entering the markets concerned. However, the market share of the historic operator remained in many cases very high. On the one hand, that was the result of the high investment costs that were necessary in order to enter a network market (e.g. investing in an electricity generating station). On the other hand, factors that favoured the historic operator included the poor interconnections amongst the national networks themselves and obstacles to access by third parties to the national networks. However, the Commission's evaluations made it clear that the historic operator's share would become smaller as the market liberalised further. Liberalisation meant increasing numbers of consumers, in particular industrial consumers, changing operator in the telecoms and electricity sectors. Nevertheless, in many Member States certain segments of the rail and postal sectors (among others, inland passenger transport and the delivery of letters up to 50 grammes) were still not deregulated and the historic operator was still in a monopoly situation.

In addition, she examined whether the structural changes in the network industries had a real influence on prices, productivity and employment in those sectors. No clear conclusion could be drawn from the evaluations. Performance was on the one hand subject to factors connected with the opening up of the market and on the other hand to factors which had absolutely nothing to do with the introduction of competition in the market (e.g. the oil price). The problem became clear when the results of reforms in the telecoms and gas sectors were examined. The telecoms sector throughout the period 1996-2005 was notable for price reductions, productivity gains and an increase in employment, while the gas sector only experienced positive developments in productivity. Distinguishing between the two factors was unfortunately anything but easy. Moreover, performance varied according to country, sector, volume and the period that had elapsed since the start of the reforms.

A European Central Bank (ECB) study, which did not distinguish between the various factors came to the strange conclusion that the sectors with the highest level of opening-up and integration had the least price convergence. Studies by the ECB and the Commission, which did, however, separate the competition factor from the other factors, came to the conclusion that prices would have been much higher if there had been no competition. The ECB came to the conclusion that current prices for telecoms and energy services in Europe could fall by about 30% if all Member States followed the example set for both sectors by the Member State with the current best practice.

A marked improvement in productivity could be noted in all sectors. According to an analysis by Copenhagen Economics, the opening up of the market played an important role in raising productivity in the telecoms, electricity, rail and aviation sectors.

The effect of competition on employment was the most difficult aspect to analyse. The network industries provided services to nearly every sector of the economy and thereby had an indirect influence on growth and employment in every other sector of the economy. The reforms led to a sharp drop in employment in specific network industries in some countries (e.g. the electricity sector in the United Kingdom), but there was a strong suspicion that the decrease was compensated by an increase in other sectors. In general, however, no clear link could be established between the opening-up of the network industries to competition and employment in the European economy as a whole.

In addition to the influence of competition in the network industries on prices, productivity and employment, an analysis had been made of the influence of those reforms on services of general interest. The problem with analysing services of general interest was to find suitable and comparable data. The Commission's studies examined three aspects in particular: affordability, accessibility and the quality of services.

Changes in the proportion of its budget, which a family spent on network services indicated whether network services were becoming more affordable or not. For comparative purposes, the budgets of a family with an average income and of a family with a low income were taken. The Commission noted in its studies an improvement in affordability for both groups. It pointed out, nevertheless, the importance of social tariffs to promote its affordability for low-income families.

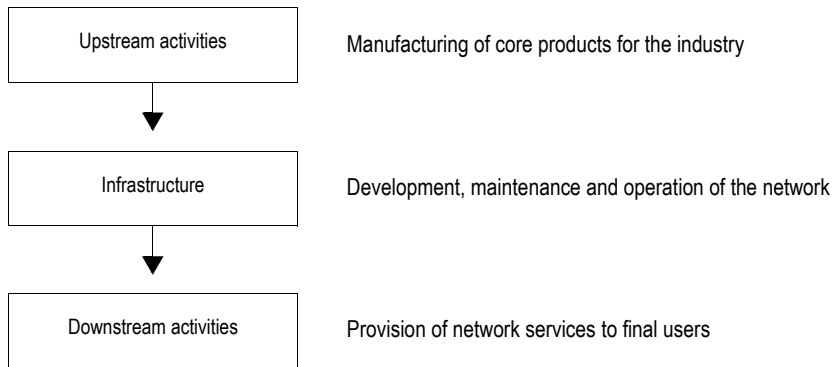
In addition, the Commission's studies made it clear that the accessibility of network services was generally good. However, the accessibility of the postal and railway network was reported to have deteriorated: by the closure of unprofitable railway lines and post offices in thinly populated regions. In general, services were of good quality, but certain aspects of the aviation and electricity sectors still left a lot to be desired. The European air transport sector had a bad reputation as far as punctuality was concerned, whereas the European electricity sector experienced power cuts too frequently and generated too little green energy.

Clearly therefore the Lisbon strategy has provided a major impetus to the opening-up of the network industries to competition. Moreover, most studies seemed to show that a real opening up, with effective competition, also led to lower prices and higher productivity. For true deregulation to take place work had to be done on transposing European directives, while a strong regulator had to be active on the market to ensure effective competition. Of course, reforms would also involve adjustment costs, such as the loss of jobs in certain network industries. The effect on employment throughout the entire economy, however, appeared to be less clear-cut. It was, therefore, also important to study further the effects of the reforms, since many effects were not always clear-cut, such as those on employment, investments, social cohesion, the quality of services, *etc.*

[2.2.2. AN ECONOMIC ANALYSIS OF REFORMS IN NETWORK INDUSTRIES IN BELGIUM: A POLICY ANALYSIS AND SURVEY BY JAN VAN DER LINDEN](#)

The argument of Jan van der Linden (Federal Planning Bureau) should be seen as complementary to Fabienne Ilzkovitz's presentation. In his introduction, Jan van der Linden described how the network industries were organised. The network industries were characterised in their production chains by upstream activities and downstream activities, with the network itself centrally placed (see Figure 1).

Figure 1 - Production chain of network industries



Source: FPB, based on Bergman *et al.* (1998).

Prior to the reforms, the three segments had been in many cases integrated with each other, and the relevant sectors were strictly controlled by the government. An important element of the reforms had been in the past and still was the separation of the upstream and downstream activities from the network activities. In that way, competition in the former activities could be made possible, with the network remaining subject to adapted regulation. Competition could result in increased efficiency, and therefore lower prices but without any reduction in quality. Efficiency was achieved by increased efficiency in allocation, production and distribution (see also above, Ilzkovitz).

The FPB had examined in its studies whether there was in reality a connection between reforms and greater efficiency in the network industries. It had carried out three studies. The connection was first examined on the basis of benchmarking with the experiences of other Member States. Secondly, a study of the literature on the economic consequences of reforms in network industries was carried out. Finally, a cautious attempt was made, on the basis of a few simulation models, to estimate the effects of reforms in Belgium.

The FPB had concentrated in the benchmarking on the electricity, rail and postal sectors and with respect to the United Kingdom, Germany, Sweden, the Netherlands and Spain. That section of their analysis examined whether there was a connection between the reforms and certain economic indicators. Although those indicators were influenced not only by the reforms (see above, Ilzkovitz), the FPB had nevertheless found a certain causal link between reforms and economic effects. The FPB had among other things measured the impact of the reforms on the following indicators: access, efficiency, employment, price level and trend, quality of service and the universal provision of service.

The reforms in the five countries examined had indeed resulted in the appearance of new companies. A positive influence had also been noted in the sphere of efficiency and employment throughout the whole economy. On the price level and trend, it had been established that after the reforms they were more consistent with production costs. However, that did not always involve a price reduction. In most cases a positive evolution had also been noted regarding quality. As far as the universal provision of service was concerned, an improvement had also been achieved. That was not so much a result of the opening up

of the markets, but of the fact that, where necessary, the reforms had been accompanied by the placing of universal service on a legal footing.

Each of the five countries had tackled its reforms in a different way. One country's approach was therefore more successful than another's. The United Kingdom had opted for a fast and far-reaching reform of the rail and electricity sectors. Thus the markets changed within one or two years from completely regulated to completely deregulated markets, with large-scale privatisations. The consequence was that the organisation of the market in some cases led here and there to counter-productive incentives for the market players, which ultimately led to a different result than that intended. That obliged the government to take corrective measures to give the reforms a better and more effective form.

In Germany reforms had so far been carried out only on a limited scale. The German network industries still showed a strong vertical integration. In many cases there was still no regulator or price regulation. The combination of the continuing monopolies and the absence of regulation has therefore actually led in certain regions to a monopolistic price structure instead of a price structure based on actual production costs.

In Sweden, Spain and the Netherlands, the effects had been more favourable. Compared with the United Kingdom, the reforms in those countries had taken place more gradually and were less far-reaching; and compared with Germany, more attention had been paid to the independence of the networks with regard to upstream and downstream segments. The consequence of that in general had been an effective introduction, more cost-related prices, higher efficiency and better quality services.

In the second part of its analysis the FPB summarised the findings of a series of studies on the consequences of market reforms in network industries. The selected studies all analysed the relationship between reform indicators and economic performance indicators. The results were grouped together in a summary table (*cf.* Chapter II.3).

The summary table made a distinction between micro- and macroeconomic studies. The microeconomic studies analysed the effects of reforms within the network industries themselves, while the macroeconomic studies examined the consequences of the reforms for the whole economy. The overwhelming majority of the studies examined indicated that market reforms could lead to higher productivity, greater efficiency, increased innovation and lower prices. The connection between reforms and employment was less clear. In the microeconomic studies both a positive and a negative connection between reforms and employment was to be found. Thus the link in the electricity sector was mainly negative and in the telecoms sector mainly positive. Most macroeconomic studies, however, found positive effects on employment and GDP. In terms of quality and investment, the impetus was positive according to most of the studies.

In the third part of its analysis, the FPB carried out a simulation of the possible economic effects of the reforms in Belgium on the basis of several OECD models. The input for those models was provided by the OECD regulation index for network industries. The index was available for seven network industries and for the period 1975-1998². The index had a score on a scale from 0 to 6, ranging respectively from

2. In addition to electricity, the railways and postal services, these are gas, telecoms, aviation and road transport. Of these, gas and telecoms were included in the simulation. The OECD has produced an update to 2003. This was not yet available when the study was drawn up.

unregulated to very strictly regulated. The FPB had made a provisional estimate for 2004 on the basis of the OECD methodology and in anticipation of an OECD update. The average score on the indicator for Belgium in 1985 amounted to 5.2, which indicated a very strict regulation. By 1997 through limited reforms the score had gradually fallen to 4.2. For both years, though, that was a fairly average score compared with other Member States. Since then the fall had accelerated: the FPB update produced a score of 3.0 in 2004. On the basis of an estimate of the still expected reforms, the FPB finally made two estimates for 2010, one cautious and one rather more speculative, 2.7 and 2.0 respectively.

The simulation for which the scores were used as an input produced fairly optimistic results. The FPB also made a few comments on the quality of the models. The effects predicted by the models had to be seen as long-term and would accordingly not be immediately apparent. Between 1995 and 2003, annual investment in the rail, postal and telecommunications sectors were on average 7.8% of the capital stock of those sectors. After the reforms, according to the OECD models, investment was expected to increase by slightly less than a percentage point to 8.6%. For the gas and electricity sectors, annual investment was expected to increase from 3.1% to 5.1% of the capital stock. The annual growth rate of multifactor productivity in the network industries was expected to rise from 1.2% to 1.4%. The employment rate was expected to rise by a good 1.5% as a result of the reforms.

If these estimates from the OECD models were compared with what actually occurred in the Belgian economy between 1998 and 2004, it was striking that investment in the network industries had actually declined. The employment rate in the period 1998-2000 did indeed rise from 59.7% to 61.2%, but then stagnated. The increase in the employment rate had other causes, however, unrelated to the reforms in the network industries. The growth in multifactor productivity could not be compared with actual data because of the lack of statistics on the subject.

It could be concluded from the academic and benchmarking studies that the positive economic effects that, according to economic theory, should occur with reforms had actually taken place. Account had to be taken, however, of the negative employment effects in certain network industries. It was clear from the benchmarking analysis that the way in which reform was tackled was important. Reforms that were too radical and carried out in too short a time risked having unintended effects and could thereby miss their objective. Insufficiently radical reforms could likewise result in the intended effects not being achieved. A happy medium had therefore to be sought. After the reforms, the government had to continue to monitor whether there was effective competition and, if necessary, take measures to promote competition. From the estimates for Belgium made by the FPB, it was clear that reform of the network industries could have significant positive effects on the economy. There was, however, a need for more in-depth research into reform of the network industries in order to confirm or negate the correctness and plausibility of those studies and assessments.

2.3. THE SOCIAL IMPACT OF MARKET REFORMS IN NETWORK INDUSTRIES

Henri Bogaert (the chairman of the afternoon session) pointed out that the first part of the afternoon session (see above) had concentrated on the macroeconomic consequences of the reforms in the network industries, whilst the second part, which would start with a presentation by Egbert Holthuis of DG Employment, would focus instead on the social consequences of reforms.

2.3.1. INTERVENTION OF EGBERT HOLTHUIS,

Egbert Holthuis (European Commission, DG Employment) said he would speak mainly about the study, which DG Employment was carrying out on the impact of the reforms on employment and social affairs. The results of the study were still unpublished (expected in 2006). In the first part, he would also talk about the 70% employment target of the Lisbon strategy, while in the second part he would discuss the aims of the DG Employment study.

One of the greatest challenges in the Lisbon strategy for the enlarged European Union was to raise the employment rate to 70%. The overall employment figure, however, had remained stuck for several years around 63%. Nevertheless, progress had been made between the launch of the employment strategy in 1997 and the present day. 12 million new jobs had been created between 1997 and 2002, and the labour market was reacting much more flexibly to slower economic growth. It was therefore also important that national governments actively carry out further reform of their labour markets in order to be able to take full advantage of the new employment opportunities, which presented themselves. If the European Union were compared with the USA, it would be seen that the USA had a much higher employment rate in the service sectors. That suggested that with appropriate reforms, there was still a great potential in the European Union for job creation in the service sectors, including the network industries. In addition to reforms of the labour market, work also had to be done on a further improvement of human resources. That could certainly be achieved by an improvement in education and training at all levels. The social partners and the various governments bore joint responsibility for both objectives. That was also why the Commission, and in particular DG Employment, would be cooperating more with the social partners by means of a tripartite dialogue.

The main objective of the DG Employment study was to examine what the business community and national governments in the European Union had done to prepare employees in general (*e.g.* by training courses) for the changing labour market. Among other things, specific attention would be given to what had happened in that context in the network industries. Proper preparation of employees for the labour market was intended to prevent them from being restricted to a single narrow vocational category and in that way increase their mobility between sectors. The results of the study would in the near future provide further input for the dialogue between the Commission and the social partners.

2.3.2. INTERVENTION OF MARIAN KRZAKLEWSKI

The contribution of Egbert Holthuis was followed by a speech by Marian Krzaklewski (EESC), a former Polish member of Parliament and trade union representative, now active at the EESC. He thought that the conference was being held at a very opportune time, given that the colloquium preceded an own-initiative

opinion by the EESC transport and energy section. However, in his speech he wished to discuss in particular the fact that reform of the network industries led to totally different situations in the new Member States compared with the old Member States. At that moment, the new Member States were undergoing fundamental change. A great number of people were losing or had lost their jobs through radical restructuring and modernisation. He wished, therefore, to outline the situation on the basis of what had happened in the Polish rail sector.

At the beginning of the 1990s, Polish Railways were the second largest employer in Europe, with as many as 430 000 employees. Only the Russian Railways were bigger. Following drastic restructuring, there remained (in 2005) only 130 000 employees. The most extensive measures were taken between 1990 and 1996, when 180 000 people were made redundant. During that period, Poland changed rapidly from a command economy to a market economy. New reforms were launched from 1996 with the law on the privatisation of Polish railways. Those reforms were, however, accompanied by a package of social measures that mitigated social tensions to a great extent. The main social measures were classic measures such as redundancy packages, free training schemes, outplacement, *etc.* but a number of innovative measures were also taken such as the sale of buildings by the railways at favourable prices to former employees, the establishment of an investment fund for employees that was funded by 15% of the profits from the privatisation of the railways, *etc.*

Privatisation split the Polish railway sector up into a number of separate companies, of which some were profitable and others not. The largest profit-making subsidiary of Polish railways was long-distance goods transport. Its profitability was derived above all from the transport of coal. But, unfortunately, the demand for Polish coal was in decline and fierce competition with other means of transport led to a drop in transport prices. Domestic passenger transport was also profitable to a certain extent, but that was often not the case with the small regional routes. The result was that many of the small routes were being closed down, with direct consequences for employment, but also for people's mobility.

It was important to recognise that drastic restructuring of the same type had also occurred in other branches of industry in the new Member States. Poland was therefore counting strongly on the positive effects of the Lisbon strategy. In the first place, the railway sector was hoping for extra resources from the Structural Funds in order to support regional transport, to renew the key transport corridors and terminals, and for support in adopting new technologies such as smaller and more efficient trains *etc.* In that way, Poles were hoping that, with a sound railway sector, they would in the future continue to play an important role as a logistic transit country for goods from and to the countries of the former Soviet Union.

The Polish electricity sector too had undergone many reforms; however the consequences were less far-reaching for employment and were also accompanied by social measures. The interesting point was that those social measures had always been formulated by tripartite consultations. With the privatisation of the electricity sector, there had been increased pressure by shareholders to cut back on costs. The consequence of that was that a number of sensitive parts of the network were now undermanned and there were delays in tackling breakdowns. That led to customer dissatisfaction.

The European Union should therefore do its utmost to make the network industries in the ten new Member States motors of growth and not unemployment. A generous European Union budget policy

towards the ten new Member States, by means of the Structural Funds, should offer them the opportunity to successfully implement the Lisbon strategy.

2.4. PANEL DISCUSSION ON THE ECONOMIC AND SOCIAL IMPACTS OF NETWORK INDUSTRY REFORMS BETWEEN REPRESENTATIVES OF CIVIL SOCIETY

The last contribution was followed by a panel discussion between representatives of civil society: Umberto Burani (EESC), Caroline Ven (VBO), Johan Bortier (Unizo), Michel Bovy (ACV), which was chaired by Fernand Sonck of FOD Economie.

The first point to be discussed was whether the network services were now working better or worse because of the reforms. Johan Bortier worked for an SME organisation (Unizo) and wished to look at the question from the point of view of the SMEs. He stated that the SMEs had different interests with regard to the reforms. Apart from the fact that the reforms offered new opportunities to entrepreneurs, the network industries were especially important for most SMEs in their role of supplier of services. It was therefore the role of the telecoms and electricity sectors that he wished to comment on in greater detail.

On the one hand, he could only welcome the price reductions that arose from competition in the telecoms sector, but on the other hand, he regretted the fact that contracts were often not very transparent. Because of that, it was often difficult for the customer to compare offers. Moreover, according to the Belgian consumers' organisation Test Aankoop, certain services such as broadband Internet were up to two to four times more expensive than the cheapest alternative abroad. That indicated the need for a strong regulator, who could properly regulate oligopolistic situations such as broadband Internet.

Despite a reduction in distribution charges, the cost of electricity had not come down over the last few years. The cost of electricity was determined by several factors such as fuel prices, production costs, distribution charges and taxes. Nevertheless, Unizo thought there were two reasons why electricity was so expensive in Belgium. The first reason was that the quasi-monopoly of one producer meant that it could continue to demand high prices, despite a high level of production of cheap electricity from nuclear power stations, which had been virtually amortised. The second reason was an ambivalent attitude on the part of the government, which on the one hand indicated that the reforms would lead to price cuts, but on the other hand was planning to raise new taxes (e.g. the Elia tax) on the use of energy. Furthermore, it was still unclear to the SMEs whether they should approach the producer, the supplier and/or the distributor in the event of losses caused by power cuts.

The chairman then gave the floor to Michel Bovy of the ACV-Transcom trade union to speak on the question of how employees in the network industries were experiencing the consequences of restructuring. He said that in general the trade unions were sceptical towards liberalisation in the network industries. He stated that he himself and the unions had to a great extent reached different conclusions from most speakers who had preceded him at the colloquium. He conceded that in some respects performance had improved, but he thought that performance had declined in the areas that were really important for the unions such as the provision of public services and employment.

Many jobs had been lost in the various network industries since the beginning of the reforms. To cite a few concrete examples: the loss of half a million jobs in the rail sector in the EU-15, the disappearance of

half of the jobs at Belgacom and the planned reduction from 45 000 to 28 000 employees in the Belgian postal services by 2009. The effect on employment for the trade unions was therefore clearly negative, and not positive as the previous speakers had maintained. In certain sectors the loss of jobs had been compensated in part by employment from new operators. It was, nevertheless, a matter of concern that in sectors (such as telecoms) where important new innovations had been carried out, the creation of new jobs had at best resulted in a stabilisation of employment. That did not look very promising therefore for sectors such as the postal service and the railways where important innovations were not expected in the immediate future.

The trade unions were, however, concerned not just about the quantity, but also about the quality of employment. They noted that in the restructuring that accompanied the reforms, it was low-skilled workers in particular who bore the brunt of redundancies. It was therefore sad to note that that occurred in sectors where the government was still active. The government should play a particularly important role in ensuring decent conditions for the low-skilled. Because of the reforms and fiercer competition, conditions for employees of the new market operators were often inferior to those offered by the historic operator. The main competitor for Belgian railways was road transport, a sector that was more difficult to monitor and which consequently was monitored less. The result was normally safety shortcomings and poorer social provisions, and accordingly poorer conditions for employees. In that context, the trade unions were in favour of an overall, intersectoral transport policy, as provided for by the Treaty of Rome. European Union policy was, however, being implemented mainly in a vertical and sub-sectoral way. In the telecoms sector, Belgacom's competitors were members of a separate joint committee (No. 218). The result was less favourable conditions for employees out of line with the technological level of the sector. With the approaching liberalisation of the postal services, the unions feared a generalisation of the working methods used by some of the parcel services, which often worked with 'self-employed' people. It was a status which most of the employees often accepted purely out of necessity.

As a representative of the trade unions, more specifically the ACV, Michel Bovy wished nevertheless to come to a positive conclusion. He said that the trade unions remained critical and sceptical towards liberalisation, but that the unions would not reverse the trend. They wished therefore to fully subscribe to a strategy to promote as much as possible the long-term interests of employees under those changing circumstances. It was therefore also very important for the trade unions that the government should keep an iron in the fire as far as the network industries are concerned. For the trade unions, liberalisation had in any case to go hand-in-hand with the new regulation. New structures had to be created to bring about genuine competition. The unions therefore argued for a joint committee with members drawn from both private and public network operators, in which together they could hammer out a common social basis for all employees within a network industry. Only in that way could the positive competition that was inherent in the Lisbon strategy be prevented from lapsing into negative competition, which would be at the expense of employees' conditions. In the long term, that negative competition would be very unfavourable for the provision of services in the network industries and for the established social model.

The chairman then gave the floor to Umberto Burani on the question of whether the reforms were going too far or not far enough. Umberto Burani said that everybody had his own opinion, and that, when drawing up an opinion, ideology often obscured the facts. Much had been said by the previous speakers about the joys of privatisation, but the fact was overlooked that there were countries which had not privatised but nevertheless had network industries which functioned very well. In addition, there were

countries that had privatised, without seeing the disappearance of price-fixing arrangements. Monopolies were not ideal, but privatisation was also not a universal panacea. There was no ideal one-size-fits-all solution; each country needed its own made-to-measure solution.

The previous speakers had covered just about everything, including the effects of the reforms in the network industries on employers, the SMEs, employees and consumers. However, nobody had spoken about the effects of those reforms on the general public. There was nevertheless a substantial consensus that the public should be placed at the forefront. It was therefore important to examine whether the public was satisfied with the quality of services and whether its rights were well protected in the event of poor quality. There were after all laws to protect individuals as employers, employees or consumers, but there were no laws to protect people as users of services of general interest. Work had to be done on that subject in the future.

Michel Bovy said that the network industries had an important role to play for everyone. For that very reason, therefore, the trade unions thought it very important to defend the interests of the users of network services and in particular services of general interest. In certain sectors such as electricity and gas, services of general interest were already playing a redistributive role. For that very reason it was important to give the social partners, and in particular employees' organisations a greater say in drawing up the rules and preparing reforms in the network industries. Greater involvement gave the social partners the opportunity to implement good and feasible redistribution mechanisms in all network industries. He had in mind, among other things, putting basic mobility into practice, providing each family with a minimum of one item of telecommunications equipment, *etc.* However, for that purpose the democratic structures had to be able to fully play their part. In that context, the government had to lead the discussion together with parliament, the social partners and the general public on which public services they wished to run themselves, or to contract out or privatise. At that time, that discussion was not being held at all in Belgium. Thus, parliament had not been consulted at all about the privatisation of Belgacom. More democratic dialogue and involvement in the reforms led, on the one hand, to better public services and, on the other hand, made it clear to the public that they could have confidence in the future. That trust was important as it formed the basis of public support for the reforms in the network industries.

Caroline Ven of the vBO, the Belgian employers' association, said that the various stakeholders, and in that case the social partners, were already represented with the sectoral regulators in Belgium (BIPT and CREG). That gave them the opportunity to give advice on policy. Moreover, she thought it unnecessary for the social partners to be directly involved in drawing up the regulations. In her view, that remained a matter for the national and preferably the European political authorities.

However, Caroline Ven wished to redirect the debate towards the reason for the Lisbon process. She said that it had originated from the belief at the end of the 1990s that Europe was performing comparatively poorly on the economic, social and other fronts. Over the same period, the United States had enjoyed strong economic growth, a high employment rate and a high level of innovation, for instance through developments within the ICT sector. The Lisbon strategy had grown out of that assessment, with the aim of making the European Union by 2010 the most competitive knowledge-based economy in the world. However, the question was how that ambitious target was to be achieved. However, it first had to be clearly established why Europe's productivity was lagging behind that of the United States. According to

studies (including those undertaken by the Commission), the reasons for that went back to the 1960s and 1970s. In that period, all government resources in Europe had been concentrated to a large extent on certain sectors and on certain companies. In the USA companies had had to rely much more on their own efforts (e.g. via innovation) in order to take on the competition; the government had concentrated its resources mainly on the modernisation of its own apparatus. The strong competition and innovation orientation of US companies was manifesting itself in faster productivity growth. Europe had collectively drawn its conclusion from those facts - hence the Lisbon process.

In order to finally make progress with the Lisbon process, the competition card had to be played. A successful economy was one in which new sectors (companies) were able to develop, but also one in which old sectors (companies) could disappear. That would oblige companies and government to pay attention to innovation and quality. However, it was not possible, as in the past, for certain sectors to be exposed to such change and others not. It was therefore extremely important that the network industries too be exposed to competition, given their important role for the economy. Government interference often led to a lack of competition with the result that the public, employees and companies paid too high a market price for their network services. Excessive prices for network services were not only bad for the competitiveness of companies, but also encouraged companies, where the cost of those services was critical to their operations, to relocate. Caroline Ven therefore believed that, when reforming network services, more consideration should be given in future to the employer's point of view.

The reforms had to concentrate on improving services to customers, more innovation and competitive prices, to enable companies to invest in Europe and Belgium at a reasonable price, to create a sound economic basis for the future of ordinary people and employees.

The panel chairman wondered whether there was an ideal level of regulation of network services. Was it better to regulate services at national or European level, or perhaps at an intermediate level? At what level could a transnational industry with local particularities such as the network industries best be regulated? Umberto Buranio of the EESC thought that a pragmatic approach was best. He therefore suggested that not too many rules should be laid down. He took the example of Northern Italy, which was to a large extent dependent on French power stations for its electricity consumption. In order to reach Italy, the electricity was first sold by the French monopoly EDF to private firms in Switzerland, which in turn sold it to private, public and semi-private companies in Italy. Cooperation between those different types of company worked rather smoothly in the final analysis, without any need for a whole series of rules.

Fernand Sonck then asked Johan Bortier of Unizo whether he thought that Belgium could itself draw up some effective regulations on the basis of the European directives, or whether eventually broader cooperation would be needed on regulation in order to increase Europe's clout abroad. Johan Bortier said that if a competitive European market was to be published, there was a need for basic rules, defined and monitored at a European level. However, that did not mean that a relatively small country such as Belgium could afford not to monitor the rules of free competition. Local supervision was a necessity for free competition in view of the different points of departure of the various countries. Belgium's Competition Council was unfortunately understaffed and furthermore had a much more restricted scope for action than its Dutch counterpart. Thus, for the moment in Belgium there was no strong competition authority. In addition, the division of responsibilities between the Competition Council and the sectoral regulators in Belgium such as the BIPT (postal services and telecommunications), the CREG (electricity

and gas) *etc.* was anything but transparent. It was therefore important that, when bringing the law into line with the new European competition provisions, the respective powers of the competition authority and the sectoral regulators be clearly spelled out. It was important in that context that the Belgian legislative authorities take account of best practices in other countries, in order to ensure fair competition.

Caroline Ven of the VBO wished to add something to the previous reply. She said that the intention was ultimately to create a European market for network industries, which were as a rule sizeable and often active in more than one Member State. She therefore argued for a European regulation with as few national variations as possible, in order to give the internal European market the best possible chance. In addition, specific Belgian implementing provisions would be needed for the new European rules.

Raymond Hencks of the Luxembourg Economic and Social Committee said that, as far as the Commission was concerned, the problem of the level at which to regulate had been settled by the White Paper on network industries. Those who had taken part in the discussion that had preceded the White Paper had come to the conclusion that it was unnecessary to transfer more powers to the European level. The Commission was adhering strictly to those conclusions.

Michel Bovy (ACV-Transcom) acknowledged that there was a communications problem at European level. He thought that the Commission should make more effort to increase participation in discussions (Green Papers) and to communicate the results more clearly. Umberto Burani thought that the finger should not be pointed at the Commission, as the ultimate responsibility and decisions lay with the Council. The Member States and their ministers should not pass the buck for public hostility, particularly as European legislation was only to a very limited extent the cause of that hostility. Henri Bogaert agreed and thought it regrettable that Europe, as had been the case with the referendum in France on the European Convention's draft Constitution, was the scapegoat for local and personal problems in all those discussions. The reform process under way should perhaps be given a chance, since it was, as Caroline Ven had said, still too early to pass a definitive judgement on the reforms in the network industries.

Egbert Holthuis of the DG Employment acknowledged that communication by the Commission had not always been perfect, but he said that it was very difficult to explain certain matters in normal everyday language. Nevertheless, the Commission was attempting to involve the people of Europe in the decision-making process through its Green and White Papers. The Commission had received a great deal of feedback on the Green Paper on network industries from the individuals, civil society organisations, social partners *etc.* The Commission had incidentally noted that over the past few years there had been a sharp increase in reactions to Green Papers on subjects that directly concerned the public such as safety and network industries. The Commission was, however, aware that communication via Green and White Papers only reached a limited section of the population. It was therefore important to continue to further improve the Commission's communication with the public. In that context, it was important for the Commission and other European institutions, among other things, to cooperate closely with the social partners in order to organise initiatives such as this colloquium more regularly, which would be a big help in putting Europe across to a broader public.

3. SPECIFIC ISSUES OF MARKET REFORMS IN NETWORK INDUSTRIES

The morning session of the second day, on specific issues of market reforms in network industries, was chaired by Henri Bogaert. He announced that in that session, three network industries would be examined, respectively electricity, the postal services and the railways. The organisers had sought three speakers for each network industry. The first speaker would in turn provide a general picture of the sector. The second speaker was in each case a representative of the social partners and the third was somebody who worked for a sector regulator. The first topic to be broached was the electricity sector, with the first speaker being Greg Swinand from the consultancy firm London Economics. The firm had written a report on the Belgian electricity market commissioned by the Belgian regulator, CREG; it contained a number of far-reaching proposals for the regulation of the electricity sector.

3.1. THE ISSUE OF MARKET ENTRY WITH APPLICATION TO THE ELECTRICITY SECTOR

3.1.1. THE STRUCTURE AND OPERATION OF THE ELECTRICITY MARKET IN BELGIUM BY GREG SWINAND

Greg Swinand (London Economics) spoke about the structure and operation of the electricity market in Belgium. The London Economics study of the Belgian electricity market concentrated on three markets within the electricity sector; namely the generating, marketing and supply of electricity; and on a number of international aspects. In his presentation he said he would first concentrate on electricity production and the barriers to entering the market. Secondly, he would speak briefly about the international aspects, and finally about the conclusions of the study.

CREG considered that the study had to provide an answer to three important points. Firstly, it had to try to identify the economic and non-economic obstacles to entry to the three markets. Secondly, it would examine what stood in the way of actual competition. Was it the regulations or the structure of the market, *etc*? Finally, the study also had to come up with some concrete recommendations to improve the three markets in order to develop a method of keeping an eye on market changes. The transmission and distribution markets had not been studied, except when they influenced competition in the three markets examined (generation, sale and supply of electricity).

London Economics concluded in its study that the three markets were concentrated. Markets with few players could lead to dominant positions, which gave the players involved the opportunity to increase or to lower prices at will. Those concentrations were as a rule the result of barriers to entry. London Economics therefore made a distinction in its study between economically acceptable and unacceptable barriers. High fixed costs were generally classified as acceptable barriers. Of the three markets studied only the generation of electricity displayed high fixed costs. Nevertheless, companies in the two other Belgian markets studied also showed a much higher remuneration than in markets with a high degree of competition, or a profit that was higher than normal profit given fixed and variable costs.

London Economics also noted a number of less acceptable barriers on the three markets. In the first place it was established that Electrabel's share of electricity generation was so large that it could influence market prices. The capacity to influence prices could be enough to deter potential producers. Secondly, the vertical integration of Electrabel and Electrabel Consumer Services (ECS) also led to problems.

Despite the clear measures that the Competition Council had taken, the cooperation between the biggest generator and the biggest distributor of electricity raised an entry barrier for potential new distributors. The presumed preferential treatment of ECS in the purchase of electricity would indeed deter many potential entrants. Thirdly, there was a high degree of price uncertainty, because of the balancing mechanism that applied on the Belgian electricity market. The balancing mechanism came into force whenever a distributor needed greater capacity than that which he had contractually agreed with the producer. The price for that higher capacity was set by the balancing mechanism. The prices set by the balancing mechanism were nevertheless much higher than the market price and often not transparent. If the distributor did not cooperate directly with a producer, poor planning of the capacity required could lead to a sharp increase in costs for the distributor. Fourthly, the limited interconnection with other national markets (including the French market) resulted in an insufficient supply of sellers and buyers of electricity. Together with the high degree of concentration in the production market, that led to poor liquidity on the electricity market, which deterred potential producers and distributors from entering. Finally, there was a lack of clarity about the independence of the Transmission System Operator (TSO) (in which Electrabel has a considerable capital stake – *editorial note*). In that connection, there was incidentally a court case pending initiated by Source Power. Uncertainty over the independence of the TSO was also discouraging for potential entrants.

Those barriers resulted in almost non-existent entry to the Belgian electricity market. What was worse was the fact that the market itself was far from 'contestable', *i.e.* prices on the Belgian market could not even be forced down by the threat of potential entry. The current price uncertainty, which was the consequence of various obstacles (see above) and the high fixed costs that were inherent in electricity production, made a normal economic return on investment unlikely. It appeared that Electrabel was successfully operating limit pricing, *i.e.* the price that Electrabel was asking was lower than the monopoly price, but still higher than the price on a market with perfect competition. Nevertheless the price asked was still low enough to deter potential entrants given Belgian market circumstances.

The greatest obstacle to the more efficient operation of the market was the dominant position of Electrabel in production. The horizontal concentration of production capacity in Belgium was also, through vertical integration, at the root of the lack of competition in electricity distribution. Experience in the United Kingdom, where vertical integration between producers and distributors was usual, showed that vertical integration did not necessarily lead to a lack of price competition. Horizontal concentration, on the other hand, always appeared to be a problem. Even an improvement in interconnection with neighbouring countries would bring no relief in the medium term. International competition by means of additional interconnection capacity was expensive and was therefore only to a limited extent a potential threat to local producers. It could therefore be concluded that, if nothing was done about concentration in the production sector, there would be little improvement in the other markets studied.

Potential producers who might be able to stimulate competition were probably waiting for the gradual disappearance of a number of problems with regard to entry. London Economics had therefore drawn up a number of recommendations for the General Council of CREG. The three most important ones were as follows. Firstly, work had to be done on improved unbundling. Secondly, Electrabel's production capacity would have to be split up. Finally, the question as to how the balancing mechanism could ensure improved price certainty had to be looked into. Most of the recommendations had been followed up, but the regulator and the government remained opposed to splitting up Electrabel's production capacity. An

alternative way was being sought to tackle the problem of horizontal concentration. However, there would be a need for price regulation until there was true competition on the electricity market. After all, excessive electricity prices directly affected a country's competitiveness.

3.1.2. INTERVENTION OF BERNARDO HERNÁNDEZ BATALLER

After Greg Swinand it was the turn of Bernardo Hernández Bataller of the EESC. In the first part of his talk Bernardo Hernández Bataller gave a clear overview of the liberalisation of the gas and electricity markets in Europe. His talk was based around the European directives relating to these markets. An amendment to Directive 96/92/EC served as an answer to the question of the European Council in Lisbon about how to speed up liberalisation. This amendment had three objectives. Firstly, it gave a clear timetable for when the different categories of electricity consumers would finally be able to choose their supplier freely. Secondly, it had been decided to apply a system of published and regulated tariffs as the only procedure for third party access to electricity networks. And thirdly, the unbundling of transmission activities from other activities in the sector (e.g. production) was made a requirement. These objectives were extended with the draft Directive 2003/54, which said that there should be an independent national control authority with responsibility for tariffs and the procedures for network access, as well as for setting up machinery to prevent the distortion of competition. In addition, network operators were obliged to present a multi-year investment strategy to the national regulator, indicating existing or future capacity shortfalls.

For the EESC it was very important that there should be common rules for the internal electricity market to ensure that there would be sufficient capacity to guarantee a proper level of supplies to services of general interest, such as security of supply and social measures for vulnerable population groups. In addition, the establishment of an internal market could not prevent the achievement of economic and social cohesion objectives for the less fortunate European Union regions and citizens.

In the second part of his talk Bernardo Hernández Bataller mentioned a number of specific barriers to access which had to be worked on if the European Union was to become an operational and competitive internal market. Firstly, Bernardo Hernández Bataller highlighted differences between national laws on services of general interest, consumer protection and environmental protection that disrupted competition. He then called for further European harmonisation of such laws. Secondly, he pointed out that European case law ensured that certain national TSOs could temporarily ask for higher transport prices for electricity from hydroelectric and geothermal power stations. This was to remove their competitive advantage, which was due to the fact that they were not dependent on primary fuels (oil, coal, gas...). This enabled the sector to temporarily charge all contracted consumers a single fixed price that took into account the cost of the primary fuels, even though a high proportion of the electricity sold was not produced from primary fuels. Thirdly, Bernardo Hernández Bataller also saw problems in the fact that, because of the free movement of capital between Member States, certain Member States with a completely liberalised market could not prevent their national network companies being taken over by companies from a Member State whose market was not liberalised. Public-sector companies from non-liberalised markets could use subsidies and the extra resources resulting from their monopoly position to acquire holdings in companies which were active in liberalised markets. During the transitional period this could in fact lead to these monopolies having a competitive advantage. However, it should be pointed out that such practices were restricted by the fact that European and national competition authorities had to

examine whether or not a merger or closer cooperation would lead to market disturbances. It was important for more thought to be given at European level to these and other barriers to access that would damage the spirit and rules of the internal market.

3.1.3. INTERVENTION OF RUDY DE LEEUW

Bernardo Hernández Bataller's talk was followed by a speech from Rudy De Leeuw in his capacity of chairman of the CREG General Council (the Belgian regulator), where he sat on behalf of the trade unions. Rudy De Leeuw first wished to point out that the General Council of the CREG, which consisted of representatives of consumer groups, environmental organisations, the government, the gas and electricity sector and, of course, the social partners, had adopted a unanimous opinion on the functioning of the gas and electricity market and the role of the regulator. This opinion was based, among other things, on the study that had been commissioned from London Economics (see above). As the opinion had been unanimously adopted by all members of the CREG General Council, its views on energy policy and market operations had very wide public support.

Secondly, Rudy De Leeuw wished to point out that the London Economics study had been commissioned by the General Council of the CREG, and not by the executive committee or the government. In view of its composition (see above), the General Council was representative of civil society. The fact that Belgian society, through the General Council, was able to evaluate the liberalisation of the gas and electricity markets was extremely important to ensuring that this process proceeded smoothly. Involving society in energy policy was a tradition in Belgium, which would be continued in view of the positive impact after the start of liberalisation. Rudy De Leeuw stated that the General Council would be happy to share this good Belgian practice and its experience in this area with other European Union Member States.

Thirdly, the CREG General Council had noted that the current national energy market, which was to a large degree regulated on the basis of two European directives, was not large enough to achieve an optimum physical and economic performance. Enlargement was indeed necessary if there was a real desire to work on a controlled and socially responsible liberalisation of the energy markets. The point of departure of the London Economics study, namely the Belgian market, was too limited for entirely correct decisions to be made. What was needed, therefore, was a study of the European market, which took into account the possibilities of interconnection between national markets and sought to define wider regional markets which could be liberalised in a socially responsible way. In view of the CREG's limited national powers, it could only ask London Economics to express views on the Belgian national market and could not expect a wide-ranging response.

Finally, the General Council wanted to make it clear that its unanimous opinion had been based on the conclusions of the London Economics study. Indeed, the Council also noted that there was a high level of horizontal concentration in the Belgian electricity sector. However, this concentration had grown over time, with the aim of rationalisation and achieving economies of scale. The dominant position of Electrabel had grown from this activity. However, the Council felt that the proposal from London Economics to split up Electrabel into four parts was not feasible. It would not produce many economic advantages (such as economies of scale) but it would lead to a large number of technical complications. Of course, newcomers would have to be allowed access to the Belgian electricity market in order to provide an answer to horizontal concentration. However, the shortcomings of the Belgian market should

instead be tackled by a combination of measures, which were set out in detail in the unanimous opinion of the Council.

The six most important recommendations in the opinion were based, among other things, on the London Economics study. One of the first measures that the Council wished to promote was the setting-up of Virtual Power Plants (VPP). The idea was to force Electrabel to sell off parts of its production capacity each year to the highest bidder. The VPPs which acquired parts of this capacity could then resell them as if they themselves produced electricity. A second measure was to sell off to market entrants, for a fair price, production sites which were no longer used by current producers. A third important measure was to improve interconnections with neighbouring countries, especially with France, which until now had had a lot of surplus capacity. Fourthly, the Belgian balancing mechanism had to be reviewed in order to remove the obstacles which the current mechanism presented for potential market entrants. Fifthly, the Council wanted more to be done against the latent vertical integration between production, transmission and distribution activities. Forcing the current market players to reduce their stake in the transmission operator would, among other things, prevent one player or another from making use of a blocking minority. Sixthly, the independence of Transmission and Distribution System Operators (TSOs and DSOs) should be guaranteed in order, among other things, to fulfil the conditions of corporate governance. In order to have good corporate governance it was best to avoid a situation where system operators were active in more than one of the subsectors of the electricity market (production, transmission and/or distribution), and thus avoid any collusion of interests in the minds of operators. If they were active in more than one subsector they would have to clearly act independently in the different subsectors in accordance with the principles of good corporate governance.

These recommendations were a priority for the General Council, as the Council noted that prices on the market were higher than what they could have been, bearing in mind that Belgium had very efficient production machinery, the prices of transmission and distribution over the last few years had gone down and that the government had applied new levies since the start of liberalisation. On the basis of the recommendations in the opinion it should therefore be possible to achieve socially responsible liberalisation, with reduced tariffs for the least well-off and a ban on power cuts in winter. On the other hand, it had to be possible to change the rules if the market on its own could not provide competitive rates for companies. Such competitive rates were necessary if business competitiveness and the level of employment in Belgium were to be kept up to the mark.

3.2. THE ISSUE OF UNIVERSAL SERVICES WITH APPLICATION TO THE POSTAL SECTOR

3.2.1. THE ISSUE OF UNIVERSAL PROVISION OF SERVICES WITH APPLICATION TO THE POSTAL SECTOR BY PETER ANDERSSON

The chairman declared that the meeting should now turn to the second topic of the morning session, namely postal companies. He immediately handed the floor to Peter Andersson (University of Linköping), whose doctoral thesis had been on the liberalisation of the postal sector in Sweden. Peter Anderson said that his presentation would be in three parts. Firstly, he would explain how postal services were organised. Secondly, he would talk about the Swedish experience with regard to liberalisation and finally, he would draw conclusions from this experience.

It was generally accepted that the post was a universal service. The 1997 European directive on postal services stated that the post was a universal service that had to be provided on a permanent (daily) basis for all users throughout the territory of a country, with a certain level of quality and at an affordable price. The service could be provided by a public or private sector firm for a complete Member State or a constituent region thereof.

This directive had been further developed in the different Member States into national postal laws. The Swedish postal law dated from 1994, *i.e.* before the directive. As a result, the latter had had little effect. The law laid down four important requirements for the national provider, Swedish Post. Everyone had to be able to send and receive postal consignments up to 20 kilos in weight, a certain level of quality had to be guaranteed, the price had to be affordable, apply to individual letters and be the same throughout the country. In return for receiving its licence of postal administrator, Swedish Post had to provide all postal services in Sweden without any extra compensation from the government.

In Sweden letters were defined as all consignments up to two kilos inclusive; anything over two kilos was defined as a parcel. There were three categories of letters: individual letters, bulk mail (for more than 500 letters) and targeted advertising. These three categories were divided further into first and second class consignments. First class consignments had to reach their destination within one day, second class letters had to reach their destination within three days. In all European Union countries there had been an increase in the volume of mail up to the year 2000. Since then there had still been an average increase in mail volume in the European Union, but five countries, including Sweden, had shown a fall. For Sweden the fall in volume in the meantime had been approximately 1% per year. The main reasons for this were the increase in e-mail and Internet traffic. Despite this fall, Sweden still had the largest quantity of mail per head in the European Union, more than 50% higher than the European Union average.

In most of the Member States there was full vertical integration in the postal services. In other words, the same firm or institution was responsible for collection, sorting and transport to the delivery address of a letter or parcel. In Sweden individual letters accounted for only 27% of total mail. In addition, most consignments (63%) were second class. It was also worth noting that only 6% of letters were sent by families, although they received 71% of all mail. Over the years the share of government and businesses in mail consignments had constantly increased. However, the volume of mail in Sweden had decreased since 2000 by 1% per year. So, the increased share of the government and businesses in the volume of mail pointed above all to a steeper decline in the volume accounted for by families. Swedish Post currently distributed around 93% of the total volume. Despite the low population density, mail distribution in Sweden was financially self-supporting and therefore highly efficient compared with other European postal enterprises. Among other things, this could be largely attributed to liberalisation, which was already underway in 1993-1994. Strangely enough, because of liberalisation there was a need for a considerable extension to the rules, whereas previously these could be laid down by the postal monopoly itself.

If the impact of this liberalisation was examined, it could be seen, first of all, that the price had not in fact fallen. The price for a consignment of 20 grams was roughly the same as in other European countries with a high per capita income. However, liberalisation had led to a drastic change in price structure. The real price to send a single letter of 20 grams (*e.g.* for a household) had risen by 35%, whereas certain types of bulk mail had become up to 50% cheaper. Before liberalisation there had been uniform prices,

which bore little resemblance to the real costs of each specific consignment. Secondly, it was noticed that 97% of consignments now arrived on time. Compared with other countries this was a top quality performance. Thirdly, productivity had improved just as rapidly as in the economy as a whole. This was a good performance for a postal firm in view of the labour-intensive nature of its activities. Finally, Swedish Post had succeeded in guaranteeing a universal service without government compensation. The postal service in Sweden had shown a small loss for the last five years, but this could only be attributed to the loss incurred in operating post offices. It could therefore be said that the activities related to delivering letters subsidised the activities of the post offices.

As had already been mentioned earlier, there were three reasons for liberalisation, namely to improve internal efficiency, market efficiency and distribution efficiency. Unfortunately, it was not possible to strive for complete internal and market efficiency in the network industries, especially in the postal services. This was because network industries had very significant advantages of scale. This meant that average unit costs continued to fall when volume increased. Theoretically, in the best case scenario, one could then pay a price for the postal service that corresponded to the average unit cost. In such a situation it was impossible to achieve a perfect market where services were provided against marginal costs. In the postal services the intention therefore had to be to bring the prices of postal services as close as possible to the average unit cost. In 1993, even before liberalisation, Swedish Post had achieved a very high level of internal and market efficiency. So, the increase of both these levels through liberalisation was not so spectacular. In order to increase efficiency still further and ultimately get prices down to the level of average unit cost there had to be further good and detailed legislation.

From the Swedish experience it could be concluded that liberalisation and universal service could go hand in hand if mail volume was high enough. High mail volume was necessary so as to take full advantage of economies of scale, while liberalisation for its part ensured higher efficiency and a higher quality of service by providing proper competition. However, proper competition could only come about if it was channelled along the right lines by properly thought-out and detailed legislation. Liberalisation could be a good means of boosting quality and efficiency, but it was by no means a cure-all.

3.2.2. INTERVENTION OF BRENDA KING

After Peter Andersson it was the turn of Brenda King (EESC). Brenda King was a senior consultant with the Royal Mail Group and had also been regularly involved in the activities of the EESC concerning network industries. Brenda King wanted to point out first of all that universal service was not specific to the postal sector, but also occurred in other network industries. However, compared with other network industries the post was very labour-intensive. In addition, unlike the telecom sector for example, it was not yet fully liberalised in the European Union. Normally, postal services in the European Union were only due to be liberalised from 2009 onwards, or possibly even later.

However, the United Kingdom regulator Postcomm had opted for complete liberalisation of the market from 1 January 2006. The regulator took the view that liberalisation would provide a better and wider choice of affordable services and thus a better universal service. Good affordable postal services were essential for the citizen, businesses, the government and the community in general.

Despite competition from electronic means of communication (such as email) there were still 200 000 people working in the United Kingdom postal sector, postal turnover was around £9 billion, 83 million items were delivered each working day to a large proportion of the 27 million addresses in all parts of the country. The British postal services were also recognised as providing a very high quality service. This high quality was achieved, among other things, by keeping 15 000 post offices open throughout the country, which, as in Sweden, were running at a loss.

In the United Kingdom the Postal Services Act 2000 had imposed a number of extra measures on the British postal services on top of those in the European directive (see above). Daily postal collection and delivery had to be provided. Post boxes had to be accessible throughout the United Kingdom. In addition, the post had to transport larger items that could not fit into a post box. For this post offices had to be easily accessible throughout the United Kingdom. The post had to remain affordable irrespective of the delivery distance and at a uniform price. Compensation had to be provided for lost items. There had to be further special provisions for vulnerable users and the infrastructure had to be accessible for all competitors. All this had to ensure that both individual customers and businesses could enjoy a good universal service.

The view in the United Kingdom was that the forthcoming third European directive had to bring about a complete liberalisation of postal services in 2009, so as to guarantee fair competition in the European postal sector. It also had to ensure that all European market participants observed similar standards and rules. Thus there should be no discrimination as regards access to existing networks. New entrants should have a choice between setting up their own network or being allowed access at cost price to the existing network. At the moment this was not the case everywhere. The Dutch and German postal services had access to the United Kingdom network, but at present they did not have to allow the United Kingdom postal service to access their networks in return. This situation was, however, temporary, as both Germany and the Netherlands would be opening up their markets entirely within two years. It was also important to have equal standards and rules so that users would have sufficient trust in the postal services. There should also be a clearer definition of universal service in the third directive, as a single clear definition would lead to a greater harmonisation of standards and rules. This would allow the Commission to combat excessive differences between legislation or non-application of the directive (as was currently the case in some Member States for the second directive). Furthermore, European Union competition rules should preferably continue to apply unchanged to postal services which formed no part of the universal service obligation, such as bulk mail. These were the postal services about which there were most disputes, and which were most likely to attract new operators initially. In this context, compensation schemes which might disturb competition should be avoided as much as possible.

3.2.3. INTERVENTION OF NATHALIE DUMONT

After the presentation of Brenda King, Nathalie Dumont of the Belgian Institute for Postal services and Telecommunications (BIPT) spoke. Nathalie Dumont was a specialist in regulatory issues and universal service in the postal services. She wanted first in her presentation to go into the underlying reasons behind the liberalisation of the postal sector. Secondly, she would take a closer look at the role of the regulator. Finally, she would draw some conclusions.

Under the Lisbon strategy, from March 2000 the emphasis had been placed on speeding up liberalisation of the postal sector. This impetus from the Lisbon strategy had been enshrined in Directive 2002/39. This

directive aimed initially, from the beginning of 2003, to restrict the postal monopoly to letters up to 100 grams or postmarked at a rate up to three times the basic rate for a letter of up to 20 grams. This was a serious reduction compared with the 350 grams and five times the basic rate which was the rule. This first phase was followed as from 1 January 2006 by a second phase which still allowed the monopoly for postal items of less than 50 grams or 2.5 times the basic rate. Complete liberalisation was perhaps expected for 2009, but for that there was first still some work to be done on a third postal services directive. The Commission would first be producing an outlook study which would be presented to the Council and the European Parliament by the end of 2006, together with a proposal for further liberalisation. The Commission proposal would then either confirm the deadline of 2009 or introduce an additional phase.

However, the impetus for the liberalisation of the postal sector came not only from policy but was unavoidable for several reasons. Liberalisation would give the mail operators extra encouragement (see above) which should lead to greater efficiency, lower prices and a higher quality of service, as well as to a range of products that were more in tune with what users wanted. A liberalised postal market would also be better able to adjust to technological innovation and market globalisation.

The regulator's role, like liberalisation, had evolved in phases. At first the postal authorities themselves had handled regulation at national level. In a second phase, in most countries, ministries had taken over regulatory tasks. However, these ministries were often responsible for both regulation and the service policy itself. In 1992, the Green Paper on an internal market in postal services set in motion the movement towards a completely independent regulator. The Commission made it clear in the Green Paper that operational and regulatory tasks needed to be separate. This recommendation was made an obligation by Directive 97/67. However, the directive left it up to the Member States to decide whether regulatory powers should be given to a ministry or an independent organisation. Belgium opted for the second solution. For this the BIPT was given a new statute, as a result of which it became completely independent of the ministries. However, an eye was kept on the BIPT through its six-monthly report to parliament and its annual report, which was public.

The regulator had the task of examining whether postal services' legislation was respected. In most of the Member States this generally covered such important matters as checking the tariffs applied, protecting competition, the power to grant licences, calculating the cost of the universal postal service, settling disputes, and dealing with users' complaints.

In order to flesh out the role of the regulator further, the next European directive should explain more clearly exactly what universal service was now and how it should be financed, how third parties were to access the postal network, how quality and tariffs were to be standardised, and how disputes were to be settled.

The universal postal service could be funded by the sector itself or by means of state aid. Funding by the sector itself was generally done by granting a monopoly to a firm or through a compensation fund. The traditional choice was for a monopoly. However this solution was being seen less and less in view of the pressure throughout Europe for liberalisation. A possible alternative was to set up a compensation fund to which all or certain postal operators contributed. This compensation fund would then be managed by the regulator, who would become responsible, among other things, for laying down which operators

should contribute, how much each operator should contribute and which operators would then receive compensation from the fund for providing a universal service. In order to be able to take such decisions in a fair manner, the regulator had to be able to calculate the price of the universal service correctly. There were many possible ways of calculating the costs of the universal postal service, such as 'full distributed cost' or 'incremental cost'. However, the present directive was very vague about the definition and financing of the universal service. Because of the lack of rules in this area it was very difficult for a national regulator to operate a generally accepted compensation fund. Another solution was to give state aid to firms which provided universal services. However, such state aid was completely subject to the European Union Treaty and therefore the European Union's competition laws. State aid for universal service was still possible if it fulfilled the four conditions of the Altmark judgment.³

In many cases it would be cheaper and more efficient to oblige the historical postal operator to allow third parties to access its network or parts of it (e.g. postal collection) than to oblige entrants to build their own network (e.g. duplication of post boxes and delivery rounds). Unfortunately, here too the directive was anything but clear about network access. The directive did say that access tariffs had to be transparent and non-discriminatory, but the provision of access was not obligatory.

The regulator was obliged by the directive to draw up quality standards, to check quality using these standards and take any corrective measures if standards were not achieved or respected. However, the vague definitions in the directive ensured that there would be different quality systems in the different European Union Member States. The result was a big difference between countries as regards quality standards, the strictness of quality checks and whether any corrective action was taken or not. Nevertheless, there had been some efforts made towards harmonisation. The European Committee for Standardisation (CEN) had received a mandate from the European Commission to draw up technical standards to promote the interoperability of networks. This had led to two important standards: firstly, a standard for measuring the quality of letter post and secondly, a non-binding standard for the handling of complaints.

As regards tariffs, the present directive laid down that they had to be affordable for everyone, they had to reflect costs correctly, they had to be transparent and non-discriminatory, they had to be uniform (if the Member State so wished) and cross subsidies were to be prohibited except for the universal service. Here too, the lack of clarity in the directive led to big differences in implementation and checks in Europe. One therefore had to say that in Europe there was a clear need for more harmonisation in the field of quality and tariffs.

The regulator could first try to settle a dispute amicably. But he could get tough if violations of the directive or postal services act continued. The regulator therefore had to have the possibility of imposing administrative fines and withdrawing licences. It was also important here for the postal regulator to cooperate with the competition authorities, since disputes generally had something to do with the general competition rules (which were wider-reaching than postal legislation) for which the latter had responsibility.

3. According to this ruling, compensation for a public service obligation does not constitute state aid if the beneficiary is given a clearly defined public service mission; if the compensation payments are based on objective and transparent criteria established in advance; if the compensation (including a reasonable profit) does not exceed the cost incurred in the discharge of the public service minus the revenues earned with providing the service; and if the beneficiary is chosen in a public tender or compensation does not exceed the costs of a well-run undertaking that is adequately equipped with the means to provide the public service.

To implement the Lisbon strategy successfully in the postal sector there would be a need for a controlled, gradual and carefully thought-out opening-up of the market. When the next directive came out, a clear definition of universal service had to be worked out. The directive should also pay special attention to financing, access, quality, tariffs and the settlement of disputes in the postal sector. If the directive and national legislation were to be applied correctly, there would also be a need for a strong and independent regulator, who could move the whole process along the right lines. All this should ultimately lead to greater harmonisation between European Union Member States and thus a real European market in postal services.

3.2.4. QUESTION AND ANSWER SESSION ON POSTAL SERVICES

In the question and answer session that followed Nathalie Dumont's presentation, the first question was about the need for liberalisation in the postal sector. Postal delivery was a fixed cost which made up 60% of the sector's total costs. This daily fixed cost was the same irrespective of whether one or ten letters were delivered to an address. Furthermore, the core postal market was showing a downward trend. On the basis of the two previous arguments, a presidential commission in the USA had decided not to liberalise postal deliveries (although upstream postal activities were liberalised), but to maintain the monopoly for the whole country. Was it not possible to decide that it would be better if the European legislator did not go any further with liberalisation of the postal sector? Replying to this question, Peter Andersson answered that if a monopoly was maintained it was far from certain that the monopolist operator was the best market performer. He further suspected that the market would remain highly concentrated after liberalisation (as in Sweden, where the historical operator still had 93% of the market) and that one operator would still handle the bulk of postal deliveries, but that this operator would be forced to optimise its system by the potential threat posed by new entrants. Moreover, postal liberalisation in Sweden was based on a tariff structure that was tied more closely to real costs. Because of this, bulk mail had become cheaper and its volume had greatly increased. Without this change in the price structure, mail volume in Sweden might perhaps have fallen still further.

The second question was on the universal service. Was it possible to maintain a universal service when several postal companies had a major share of the postal delivery market? Peter Andersson agreed that financing a universal service by means of cross subsidies became impossible in such cases. In that case a compensation fund would probably be the best solution. However, he thought there was little chance of this occurring.

In reply to a question on what the effect was on employment and social cohesion, all speakers had to admit that the impact within the sector was negative, but that this was offset by higher efficiency. Moreover, in former times many services had been over-manned and it was in those very services that most of the jobs had disappeared. Nathalie Dumont said that labour costs were by far the highest costs in the postal sector and that if economies had to be made in the postal sector, this would always be at the cost of jobs. She also pointed out that the financial success of the Dutch postal service was largely due to the part-time employment of very cheap workers such as students and housewives, who performed a task for a couple of hours per day. Brenda King said that the number of jobs in the United Kingdom had to fall from 200 000 to 180 000. This reduction would be largely achieved by having only two collections a day from post boxes, instead of five, and only one postal delivery per day instead of two.

However, for the sake of social cohesion it had been decided to keep almost all post offices in remote areas open. To achieve synergies, new services such as banking and insurance services were being offered in post offices. Peter Andersson said that in Sweden there were no longer any post offices as such. Their tasks had been taken over more and more by shops and petrol stations, which in fact generally remained open longer. Peter Andersson also said that the postman indeed had a social function, since he was often the only contact for people who lived alone. But he felt that the job would be better paid using money from taxes, instead of the money of post office customers.

3.3. THE ISSUE OF INVESTMENT WITH APPLICATION TO THE RAILWAY SECTOR

3.3.1. INTERVENTION OF MARCEL VERSLYPE

After the postal sector the third subject of the morning session was tackled, the rail sector. Henri Bogaert said that, in addition to the problem of the reforms, specific attention would be paid to ways of attracting sufficient investment in the railways after the reforms. The first presentation was made by Marcel Verslype, director of the European Railway Agency. Marcel Verslype began with an introduction of the Agency. The European Railway Agency is quite a young organisation and thus not yet well known to the general public. It had been set up by a regulation in January 2002 at the proposal of the Commission, with the task of tackling a variety of problems connected with the liberalisation of the railways (goods and passenger services) in Europe. The board of directors has one representative per Member State, four representatives of the Commission and six representatives of sectoral organisations, without voting rights. In order to ensure transparency and neutrality all documents were published.

The main tasks of the Agency were supervision to ensure a high level of safety and the interoperability of the European rail sector, and making proposals for common rules for the whole European rail sector. The pursuit of common rules had in fact been the main reason for the establishment of the Agency. By proposing common rules the aim was, via harmonisation, to solve the problems arising from the plethora of different national rules. In specific terms, the Agency made proposals to the Commission, having consulted the Member States, the social partners and users. The proposals were generally aimed at improving safety and interoperability.

The Agency aimed to improve the level of safety through the certification of the rolling stock and rail infrastructure of organisations (rail operators, network operators), which since the Second Rail Package had been obliged to register with the Agency. Secondly, the Agency checked whether safety requirements in the rail sector were the same as in other transport sectors. Thirdly, the Agency encouraged improved cooperation between national safety authorities. To that end technical specifications were drawn up, determining how future infrastructure works throughout Europe were to be approached.

Those technical specifications aimed to improve not only safety but also the interoperability of networks. It was the intention that those specifications should ensure that in the future national networks would mesh seamlessly. Signalling systems in the Member States still differed, as did gauges. One of the projects aimed at tackling those problems was the implementation by twelve countries of ERTMS signalling technology. It used to be generally assumed that the project would eventually be profitable in the various

countries, but it had now been generally acknowledged that overall the project would cost money. Such projects could unfortunately only be profitable if there was one single European standard, which in the long-term would substantially increase the ability to deploy rolling stock and staff.

The major differences in infrastructure and rules made it very difficult at that time to attract private capital for investment in the rail sector. Thus, the Brenner Tunnel project was only 10% privately financed. And yet many rail infrastructure projects were planned in Europe and in many countries rolling stock needed replacement and refurbishment. The need for capital investment was thus enormous. And the fact that a modern railway sector was important to Europe's competitiveness made that investment all the more important. The Agency, through its standardisation proposals for safety and interoperability, thus had an important role to play in facilitating rail sector operators' access to the capital market.

3.3.2. INTERVENTION BY STAFFAN NILSSON

After Marcel Verslype it was the turn of Staffan Nilsson of the EESC. As a member of the Committee he had been involved in the opinion on the Rail Package. Staffan Nilsson said, however, that he would mainly be expressing his personal opinion of rail liberalisation in Sweden, which he strongly supported. He considered that there had been considerable improvements. Fifteen years previously passengers have been given the impression that they were a nuisance. Now Swedish railways had finally come round to the view that the customer occupied a central place, and that was partly the result of liberalisation. The main purpose of a transport undertaking was after all the transport of passengers and not, however important that might be, to create jobs. Employment and unemployment were of course the absolute priority of Europe and the Member States, but not those of a transport enterprise, not even a public-sector one. That had been overlooked too often in the past. As a result of liberalisation the surplus of workers that had been built up in the past was now being reduced. The people affected by that naturally had to be given all possible support and that was the job of government, which had often brought about those situations.

The former Swedish railways had now been split up into three organisations. One state-run company was now responsible for the whole rail infrastructure. Over a twelve-year period it had invested some EUR 40 billion. The second company, which was also still 100% government owned, was responsible for transport. In some of its activities it had to face competition from other companies on unprofitable routes. Those routes were put out to tender by the regulator. Private operators could participate in such tenders. Ultimately it was the operator able to operate the route with the lowest level of government support that got the licence. Thus, at present, all railway transport to the North of Sweden is handled by a French company (Connex). Regional government was still responsible for regional transport. And there too the tender system was usually used. One advantage of the tender system was that travellers did not actually need to know who the operator was. Ticket sales and other support services were still provided at the same ticket windows. The second advantage was that the tender system ensured very competitive prices. And finally the system ensured that unprofitable passenger routes continue to be operated with a minimum of government subsidy, whilst before liberalisation the former public-sector operator had closed many of the routes because they were too expensive. Goods transport was in principle also fully liberalised. At the present time there was only one company operating in Sweden, Green Cargo. It was hoped that liberalisation in other Member States would act as a stimulus to other new market entrants

which, like Green Cargo, aimed to become European players in goods transport. More competition after all ultimately led to keener prices.

3.3.3. QUESTION AND ANSWER SESSION ON THE RAILWAY SECTOR

In answer to the question as to whether liberalisation led to disinvestment in infrastructure, the answer was yes ... and no. Certain Member States had indeed reduced their investment just before liberalisation, and other countries had invested more and thus partially subsidised future prices in the liberalised market. Marcel Verslype thought that one thing was clear: that a lack of investment in infrastructure could create problems. It could in the short term mean the speed of trains being reduced. In the long term lack of investment had to be made good, unfortunately often at a higher cost. Nevertheless, the infrastructure manager had to charge fair prices for the use of the railway network. Excessive charges meant that the high prices would be passed on to customers and might perhaps even lead to the failure of existing railway enterprises. High charges would also deter potential market entrants. There was thus a need for proper regulation, which should ideally be harmonised at European level (see above). The aim was to develop the liberalised railway sector into a viable alternative to road transport.

4. THE ECONOMIC AND SOCIAL IMPACT OF MARKET REFORMS IN VARIOUS NETWORK INDUSTRIES

4.1. PANEL DISCUSSION BETWEEN REPRESENTATIVES OF CIVIL SOCIETY

The afternoon session of the second day was chaired by Roger Briesch, Vice-President of the EESC. The chairman then gave the floor to Michel Bovy of the ACV-Transcom trade union, who said that he would be speaking mainly about the implementation of universal service provision in the postal sector and also a little about goods transport by rail. He felt that, when talking about reforms in the postal sector, too much emphasis was placed on the example of reforms in the telecoms sector. Originally the two sectors had been connected and managed by the same ministries. But the sectors were now completely different. In Belgium, for example, the postal sector was, in contrast to the telecoms sector, experiencing a contracting market. The telecoms sectors had been liberalised, while the postal sector was scheduled for liberalisation in 2009 at the earliest. The trade unions were afraid that job losses in the postal sector would be even more severe than in telecoms. That was certainly likely, when one considered that the number of postmen was scheduled to fall from 45,000 a few years ago to 28,000 in 2009, which was only the period preceding liberalisation. Secondly, Belgium's geographical position meant that the country was surrounded by three major operators (France, Germany and the Netherlands), which would not be slow to snap up the more profitable tasks of the historical operator. Thirdly, the potential for productivity gains in the postal sector was limited. Rationalisation therefore meant eliminating less profitable services. All those factors meant that liberalisation might have a very negative impact on employment in the sector.

Apart from the employment effect, liberalisation would also have a number of major social effects. The elimination of unprofitable postal services could have major social consequences. In addition to their economic role, postal services also played a very important social role. Previous speakers, in their analyses, had concentrated on the economic aspects of the post (see above) and had paid very little

attention to the social role. And yet Brenda King and Nathalie Dumont were right that the definition of universal service provision in the directive was very vague. The trade unions thought that a broader definition was needed, which would also take account of the wishes and needs of people and society. That was all the more important, given that, in the run-up to liberalisation, the provision of services had by no means improved. That was clear from the reports of the ombudsman.

But the adequate financing of broad universal service provision was an absolute priority. Depending on of the degree of competition on the postal market, the price of socially important but unprofitable services needed to be topped up by government or by a compensation system financed by the sector. That financing was of crucial importance in order to ensure fair competition in the sector.

Michel Bovy also wanted to say something about the rail sector. He wanted to point out that the railways transported not only passengers but also goods. It might well be that passenger transport in Sweden had improved after liberalisation (see Staffan Nilsson above), but in Belgium goods transport had declined further since liberalisation. Given the perceived effects of liberalisation in Belgium, Michel Bovy was absolutely convinced that liberalisation of the post or the railways brought no improvement for society in general or for individuals.

Michel Bovy was followed by Astrid De Lathauwer, the human resources manager of Belgacom, the Belgian historical telecom operator, who said that she first wanted to look at the ideal shareholding structure for a telecoms business, before speaking about the role of the social partners and civil society in the establishment of sector rules.

Astrid De Lathauwer first wanted to make it clear that the telecoms sector was experiencing very rapid technological change, combined with very strong pressure for further globalisation of the telecoms market. It was therefore not particularly important whether the shareholders were public or private. It was, however, important that there be stable shareholders which would invest long term in the business. In the case of Belgacom the shareholder was still the Belgian state.

Public-sector businesses needed a certain amount of time to prepare for a competitive market. A public-sector enterprise with a monopoly had a different task from a business in a liberalised market. In the case of Belgacom the Belgian government had, as early as 1995, sought a strategic partner that would be able to prepare the company for a competitive market. The stockmarket flotation of Belgacom was a natural consequence of the successful adaptation of the company to a commercial environment. It was crucially important to provide for a reasonable transitional period for the liberalisation of a state-owned business.

Astrid De Lathauwer also considered it essential that the social partners and representatives of civil society be involved in the drawing-up of rules. Otherwise there was a danger that the sector regulator would, with the best of intentions, consider only the interests of the customer. By involving the social partners, the regulator would be obliged to consider the social consequences of reforms as well. In that way the efficiency increases which were the aim of the reform could be prevented from resulting in deteriorating social conditions.

Astrid De Lathauwer's statement was followed by a statement by Eva Belabed of the EESC on the economic and social impact of the reforms. Eva Belabed said that she first wanted to sketch the development of the political and social framework in Western Europe since the Second World War. It was

necessary to do that in order to gain a better understanding of the reason why a start had been made on the liberalisation of the network industries at the very end of the 20th Century. Postwar Europe had been characterised by a model based on public consensus and social dialogue. The result had been a society that strove, above all, for social cohesion. The direct consequence of that was the development of the welfare state and good universal service provision in the network industries. The European model had been very successful up to the 1970s and it had brought the Western European countries a very high level of welfare.

Since the 1970s, however, there had been a new ideological current. It was less based on social cohesion and solidarity, but more on individual responsibility. That second current had gained in strength over the years. Competition had been introduced in more and more sectors in order to increase individual responsibility and the efficiency of the production of goods and services. Ultimately it had been decided at European level to introduce competition in less obvious sectors, such as the network industries, in order to complete the internal market.

Eva Belabed wondered whether those reforms would deliver results. If she looked at the results of the reforms, she came to a number of interesting conclusions. There were major differences between Member States. Except for mobile telephony, most prices were rising at more than the inflation rate. Where they remained constant, as in the case of the Swedish postal sector, they had still risen for small consumers, although they had fallen for larger consumers. The productivity results were mixed. Consumer satisfaction remained broadly unchanged. And yet for the first time there were frequent power cuts in the electricity sector. It was also noticeable that users were accustomed to their providers and were not particularly inclined to accept the offers of new operators. Not a great deal was known about the social consequences of the reforms. The DG Employment was carrying out a study of the social consequences of the reforms (see above). Eva Belabed strongly urged that the results of the study be closely examined, as she believed that they would not be positive. That belief was supported by the loss of some 600 000 jobs in the network industries between 1991 and 2003, the disappearance of many opportunities for training and the emergence of an environment in the network industries which was increasingly unfavourable for women. Eva Belabed noted that there was a considerable difference between the arguments used in favour of the reforms and the actual results. She wondered whether it had been worth carrying out the reforms.

Eva Belabed's statement was followed by an intervention by Francesco Petringa of the EESC. Francesco Petringa represented an Italian SME organisation. He said that in Italy reforms were more advanced in some sectors than in others. The energy sector was the most advanced, but there was no sign of improvement. Individual consumers and SMEs were confronted with an oligopoly. The result was that only large companies were strong enough to negotiate price reductions, while smaller companies and individual consumers had to accept price increases. The postal sector had benefited from the reforms. Its image had improved, new services were offered and the staff had become more consumer-friendly. The rail sector was still completely unliberalised. Rail sector prices were low in Italy but the services were inefficient. Rail services were thus no alternative to road transport for small companies. In general SMEs were in favour of greater efficiency and investment in the network industries, in order to ensure higher quality and lower prices.

Francesco Petringa was followed by Walter Aertsens of the TSO (ELIA). Walter Aertsens first wished to talk about the economic and social impact of the reforms. He said that one of the key aims of the Lisbon strategy was to improve productivity. In that respect the strategy had been a success in the electricity and gas sectors. Productivity in those sectors, as well as the water sector, had risen in the European Union in recent years by 5%, while no real increase had been observed in the USA. As a result of new regulations, productivity increases had also been registered in the transmission and distribution sector (sectors where a natural monopoly existed). Those sectors had recently begun to be supervised by a national regulator in terms of cost control, e.g. by use of benchmarking and comparisons with other national network managers. In Belgium, however, the approach to raising efficiency in those sectors was suboptimal in comparison with the system used in the Netherlands and the United Kingdom. In those countries there was a price cap system for network operators. That system, unlike the one in Belgium, did not guarantee the income of shareholders in the network operator, but rather a fixed price per unit for a specified period. The return received by the shareholders would depend on the efforts made by the network operator to increase efficiency.

With growth of between 1% and 1.5% per annum, electricity could not at the present time be said to be a growth sector. Nor would it be in the future, as the government was doing everything possible to promote energy efficiency and thus to reduce energy consumption. The strong productivity increases in the sector (see above) were, therefore, bound to have a negative impact on employment. Moreover, it could be assumed that the real impact on employment was actually much greater than suggested by the figures. As a result of liberalisation electricity enterprises were changing from technically to economically orientated businesses. That resulted in a shift in the structure of employment towards more economically orientated jobs. The technical jobs which had disappeared, to be replaced by more sales-orientated jobs, were not reflected in the statistics, hence the underestimation of the real impact.

Liberalisation had to a certain extent had a positive impact on prices. If the prices of different wholesale markets were compared, it could be seen that a uniform European price had developed in virtually all Member States. The problem remained, however, that prices for private consumers still differed sharply. The price for those consumers was unfortunately determined not only by the energy product itself, but also by a whole range of supplements that varied from country to country. Those included, for example, supplements for public service provision, environmental damage, local authority levies, increased network tariffs *etc.* On the production side too there were government measures that affected the price, such as the use of renewable energy (windmills) in Belgium or the subsidising of hard coal-fired power stations in Germany. Moreover, the quality of services and security of supply also had a price, which could however achieve a rapid payback by the prevention of power cuts. According to the estimates of the FPB, a power cut in Belgium would cost between EUR 60 and 128 million. Walter Aertsens hoped that supplements could be made comparable in the various countries, which would make the market more transparent for consumers.

Secondly, Walter Aertsens wished to speak about the best level at which to organise competition and policy. He felt that the level depended above all on the relevant market, which in its turn depended on the technical aspects of the sector. The relevant market differed for each activity within the electricity sector, and it was therefore important that policy and competition be organised at that level. The provision of electricity was above all organised at local level and could therefore best be managed at that level. Production continued to be nationally orientated but was developing quickly towards a form of

organisation in which a larger number of countries were involved. Transmission continued to be organised in a number of European blocks. A number of technical cooperation arrangements existed between national network managers, such as NORDEL for the northern European countries and UCPTÉ for continental Europe. Not all countries that were members of those cooperation networks were also European Union members. Thus, for example, Norway was a member of NORDEL and Switzerland a member of UCPTÉ. Switzerland was a key member of UCPTÉ for two reasons. First, it had a large amount of capacity for producing hydroelectric power, and secondly it played a very important role in the transmission of energy between, *inter alia*, France and Italy. Policy on electricity transmission thus had to take greater account of the specific situations of countries and regions, and thus also of countries which were not members of the European Union.

And yet policy on production and transmission had to have a greater European dimension. That was particularly true of everything connected with security of supply, support for specific production technologies, such as renewable energy, and bans on the use of particular technologies, such as nuclear energy. At present every Member State was responsible for security of supply on its own territory. But as a result of the requirement for the free import and export of electricity in Europe, the risk of power cuts could, however, only be properly dealt with at European level. Moreover, uncontrolled growth of production capacity on the basis of renewable energy also carried with it risks for security of supply, given the lack of flexibility of some of those energy sources. The heavy concentration of wind parks in the north of Germany now had a major impact on electricity flows throughout the European network and, through their lack of flexibility (they only worked when there was sufficient wind), significantly increased the risk of power cuts. Moreover, abandoning nuclear energy in Belgium would make little sense, if it was then decided to improve the connection with other countries and import nuclear energy. In those areas there was a need for European streamlining of policy.

After Walter Aertsens' contribution Gérard Gelmini of the CGSP-cheminots trade union said that he wanted to clear up a misunderstanding. He said that there was a political difference between the terms services of general interest, services of general economic interest, public services and universal service provision. Services of general interest concerned market or non-market services which were of overriding importance for society. Services of general economic interest, on the other hand, were only market services. Those services could be produced either in the public or the private sector. Public-sector services were services organised by government, while universal service provision concerned the minimum level, quality, accessibility and affordability *etc.* of services of general interest. The European Constitution spoke almost exclusively of services of general economic interest. Unfortunately public services were mentioned only sporadically. Gérard Gelmini felt that that was a pity, as public services were a useful instrument for providing services of general interest that were not profitable for the private sector. That was in particular true of non-market services of general interest. Moreover, in accordance with the subsidiarity principle, every Member State should be free to choose whether their services of general interest were provided by a public enterprise or by contracting them out to the private sector.

The entry of new competitors to the market unavoidably led to downsizing of the historic operator. In some countries downsizing had been accelerated by breaking up the historic operator. In Belgium, since January 2005, the Belgian National Railway Company (NMBS/SNCB) had been split up into three companies, a holding company with two subsidiaries, of which one was responsible for infrastructure and the other for transport. Future market entrants would be interested only in the profitable routes and would

thus attempt to 'cherry pick' them from the historic operator. As a result, the historic operator would no longer be able, without subsidy, to operate unprofitable but socially useful routes serving remote areas.

Competition on the railways would not only cause social distortions but would very probably also lead to unfair competition. Most historic railway companies were saddled with heavy legacy debts. In order to be able to compete on equal terms, the railways' debt had to be paid off by government. In Belgium the government had paid off only part of that debt, €7.2 billion out of a total of €9.4 billion. Trade unions also noted that workers' conditions and training were generally better in publicly owned enterprises. In private companies, which in Germany were already allowed to compete on the goods transport market, certain drivers were receiving only 1.5 months training on a simulator before beginning work on the railways, whilst in Belgium three years practical experience were required. In private companies workers were at best employed on temporary contracts and at worst on an agency basis. Employing workers in such a way was much cheaper than the civil servant status, the norm in public-sector enterprises and much more advantageous for the employee. The historic rail operator was competing not only with other railway companies but also with road transport. In Europe road transport generally had a systematic advantage, as many of the costs of that form of transport were not included in its price. That was, for example, true for the cost of accidents, noise, pollution, traffic congestion *etc.* Gérard Gelmini concluded that liberalisation could mean deteriorating rail services. It was also essential that liberalisation of the rail sector not be left to the laws of the market, but be flanked by new rules which would underpin the sector's provision of public services in the social and environmental areas.

Tony Vandeputte of the EESC was the penultimate speaker of the panel. He first wished to speak about the place and viability of Belgian network operators on the European market. He concluded that, with the exception of the telecoms operator, Belgian operators were in a difficult situation. The first reason for that was a natural handicap. An operator with a monopoly on the Belgian market remained a small enterprise by comparison with an operator in any of Belgium's neighbouring countries. Secondly, as a result of pressure from the trade unions and certain political parties, the liberalisation process in Belgium had been slowed down. Thus Belgium had not been able to get ahead of its neighbours, as the Dutch had managed to do in the postal sector. The result was that the liberalisation of the rail sector was a complete disaster. Liberalisation of the postal services was behind schedule despite strenuous efforts. The electricity sector was very complex and European measures did not always take account of specific Belgian circumstances. The result was that the Belgian consumer was not happy with the situation in that sector.

Secondly, Tony Vandeputte argued that the way in which liberalisation was carried out was very important. Many Member States were reluctant to adopt the necessary measures, whilst the European authorities set rather short deadlines without making it clear what was to be done at national or European level. The result was that some Member States hastily adopted radical changes just before the deadline. Finally, the regulator had to be both independent and capable. The limited success of liberalisation so far in Belgium could also be ascribed to the fact that initially the regulator had to learn his job, and to constant government meddling. By eliminating those problems it would be possible to liberalise the network industries more successfully, as in the United Kingdom.

To round off the panel discussion, Astrid De Lathauwer was asked to explain how a company like Belgacom had approached the problem of cushioning the social impact of the reforms. Astrid De Lathauwer said that there was no avoiding the fact that liberalisation would have a major social impact

on the historic operator. In 1997 there were still 25 000 employees working for Belgacom in the landline department, and in 2005 10 000 fewer. A 40% cut in jobs left clear traces in a company, but Belgacom had succeeded in doing things in the most socially acceptable manner possible. In the first phase, between 1997 and 1999, 6 000 employees had left the company early. 6 600 employees had been retrained and reassigned to other duties or had found jobs with other companies. Under another project a further 4 000 employees had left the company and 2 000 had been retrained. New retraining programmes were being started all the time at Belgacom. In-house the programmes were known as the Belgacom University. In addition to retraining, it was also necessary to attract knowledge and recruit young people. That was necessary in order to ensure the continuity and competitiveness of the company in the future.

4.2. CONCLUDING COMMENT BY CAROLE COEN

After the panel discussion it was finally the turn of Carole Coen, private officer of Johan Vande Lanotte, Minister for Public-Sector Enterprises, to close the conference. Carole Coen first wished to talk about the Lisbon strategy, which aimed to make the European Union the most competitive and dynamic knowledge-based economy in the world by 2010. That ambitious strategy aimed, via benchmarking and open coordination, to produce upward convergence and synergy between the Member States. The strategy was in all respects unique in that, together with the objectives of growth and employment, it also strove for social cohesion and the achievement of environmental goals. That was greatly welcomed by Minister Vande Lanotte, as in that way it could be ensured that Lisbon would also benefit ordinary people and the environment.

Following the disappointing results of the first five years of the Lisbon process, a reform simplifying the strategy had been approved at the European Council of March 2005. Nevertheless, partly as a result of Belgian intervention, the equal status of all components of the strategy had been confirmed. The idea was to aim for a competitive but also a sustainable and social economy.

Network industries have three important characteristics. First, they are by nature a cross-border business and thus occupy a prominent place on the European agenda. Secondly, they are generally also labour and capital-intensive. They are therefore very visible and to a certain extent a measure of the health of a national economy. And finally, they have the task of providing services of general interest. Liberalisation that, via transparent and efficient management of the network industries, strives for competitive prices should therefore be welcomed, as long as it also works for the general interest. For Belgium there are three major objectives for the network industries. They are: access for all, high-quality provision of service and an affordable price.

On the basis of the Commission Communication on its strategy for security of energy supply, the European Commission was asked, in the federal government policy statement of 12 October 2004, to draw up a comprehensive strategic energy plan. In that context, greater attention needed to be paid at both national and European level to the interconnectivity and interoperability of networks. The aim was to transfer the spillover effects of network industries to other sectors as efficiently as possible. Thus, reform of the electricity market should lead to cheaper and greener energy, which would, *inter alia* through its effects on rail transport, benefit social cohesion and the environment.

The coordination of the Lisbon strategy and the network industries was extremely important. The Lisbon strategy brought together economic, social, innovation, environmental and employment objectives, with the sustainability of the system being the overriding goal. The Lisbon strategy was therefore not only, as the title of the conference made clear, a driving force between market reforms in network industries, but also a guarantee of social and environmental reforms in those sectors. And yet continual vigilance would be needed in the future to ensure that the objectives of social cohesion and the environment were not pushed into the background. Only in that way could the sustainable development of the economy be maintained in the future.

CHAPTER 3

EVALUATION OF MARKET PERFORMANCE IN NETWORK INDUSTRIES: A EUROPEAN PERSPECTIVE

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Abstract:

European network industries are being progressively opened to competition. This process is contributing to the objectives of growth and employment set in the Lisbon strategy. However, some fear that the liberalisation process will have adverse consequences for jobs and the quality of the services provided. In order to partly allay these fears, the European Union has developed and carried out an annual horizontal evaluation as part of a multi-faceted monitoring process. The evaluation provides some interesting economic facts and figures, and can also lay the groundwork for an objective debate on the effects of liberalisation.

Keywords:

Liberalisation, regulation, network industries.

JEL Classification:

L43, L90.

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INTRODUCTION

In the 1990s, the European Union started a programme of regulatory reforms in network industries aimed at opening them up to competition while preserving the provision of high-quality services. These reforms were expected to deliver benefits in terms of higher efficiency, better quality and lower prices for consumers. However, the electricity blackouts that have hit several countries (the USA, Canada, the United Kingdom, Italy, Sweden and Denmark) in the past few years have raised concerns about possible adverse consequences of the liberalisation process, as have certain weaknesses in the liberalised railway services in the United Kingdom. It is therefore particularly important to monitor the performance of these industries and assess the consequences of opening them up to competition.

In June 2002, the European Commission consequently adopted a methodology for an annual horizontal evaluation of the performance of network industries providing services of general economic interest. Using this methodology, the European Commission has started to produce reports covering developments in telecommunications, energy, transport and postal services in its Member States. This paper describes the purpose of the evaluation and explains how an objective assessment of the impact of the regulatory reforms in network industries can contribute to an open and transparent debate on this issue. The paper will also discuss the main results of the evaluation. It describes how the market performance of network industries has evolved and presents the results of some empirical analysis of the economic impact of the regulatory reforms in these industries.

The paper has three main parts. It starts by discussing how the regulatory reforms in network industries can contribute to the Lisbon strategy objectives of growth and competitiveness and how the strategy has in turn given a political impulse to these regulatory reforms. It then describes the approach chosen at European level for the regular horizontal evaluation of the performance of network industries. Finally, it appraises different aspects of the performance of these industries, including changes in market structure, prices, productivity and employment.

1. MARKET OPENING IN NETWORK INDUSTRIES AND THE LISBON STRATEGY

To what extent are regulatory reforms in network industries integrated into the Lisbon strategy? We address both the economic and political dimensions of this question below. First, we investigate the economic channels through which the market opening of network industries can contribute to the Lisbon objectives of growth, competitiveness and employment, and second, we discuss whether the Lisbon strategy has given a positive impulse to these regulatory reforms. Finally, we describe the changes in the legislative framework and give an overview of the debate on the future of services of general interest that has taken place since the launch of the Lisbon strategy.

1.1. ECONOMIC PERSPECTIVE

The performance of network industries has a significant impact on the competitiveness of the European economy.

Network industries, which include telecommunications, energy, transport and postal services, account for a sizeable part of the economy. They represent around 8% of EU-25 value added and 5% of EU-25 employment. These shares are very similar to those observed in the United States. But as these sectors provide inputs to a large number of other economic activities, reforms aimed at increasing their efficiency have implications for the competitiveness of the European economy as a whole.

Regulatory reforms that aim to open up network industries to competition are expected to increase efficiency in these sectors...

Regulatory reforms in network industries are an important element of the reform agenda in the European Union. They include measures to open up markets that were previously sheltered from competition from newcomers – whatever their origin – because of stringent regulations on entry. Although many service markets in the European Union remain highly regulated, since the second half of the 1990s important steps have been taken to liberalise network industries such as telecommunications and energy.

Theoretically, these reforms can increase productivity and growth in the European economy through three different channels²:

- increased allocative efficiency. In a given market, increased competition reduces monopoly rents, which translates into lower prices. As prices move closer to marginal costs, distortions in the structure of production are corrected and total output is raised towards levels closer to the social optimum;
- increased productive efficiency. Competition has a corrective effect on the behaviour of managers and workers, leading to greater efficiency in the organisation of work;
- enhanced dynamic efficiency. Stronger competition also provides a greater incentive for producers to invest in product and process innovations and move towards the technology frontier.

Opening up markets to competition in network industries should induce a restructuring process in these industries, characterised by entries, mergers and acquisitions, and exits. This should lead to changes in employment and productivity. Productivity gains can potentially translate into price reductions, which would ultimately benefit users. Increased competitive pressure can also induce companies to be more innovative, which brings additional productivity gains and improves the quality of services. Finally, price reduction and technological progress can stimulate demand, offsetting the initial job losses due to the restructuring process. It is difficult to predict which of these opposite effects will dominate in the sectors concerned. However, as the benefits of market opening of network industries spill over into the rest of the economy, it should increase employment in the medium term.

2. See Nicodème & Sauner-Leroy (2004) for a general review.

These reforms can therefore theoretically contribute to the Lisbon objectives of growth, employment and productivity³. However, the main difficulty in ascertaining whether these benefits do in fact materialise in practice is that of distinguishing the effects of the changes in the regulatory environment on the economic performance of these industries from the changes in other variables such as technology, cost of capital, etc. This can be done by using econometric models which can isolate the effects of regulatory reforms in network industries.

... and should thereby contribute to the Lisbon objectives of growth, productivity and employment.

The European Commission (2002) simulated the economy-wide effects of liberalisation of network industries using the Commission's QUEST II model. It estimated the GDP and employment effects at the European Union level due to liberalisation in electricity and telecommunication at 0.4% and 0.6% respectively after four years. In addition, European Union GDP would have increased by a total of 0.6% after ten years. These findings – pointing to substantial gains of liberalisation in network industries – are consistent with those of the OECD (2000). This latter study specially targets network industries (including electricity, telecommunications and railways) and finds strong evidence that liberalisation raises efficiency and consumer welfare.

Recently, Copenhagen Economics (2004) has attempted to evaluate the cumulated impact of market opening in services of general economic interest over the period 1990-2003⁴. This study shows that the changes in the regulatory environment have led to price cuts ranging from 8% (electricity) to more than 20% (telecommunications, rail freight transport). At the macroeconomic level, these price reductions resulted in an increase in value added by 2% and in employment by 0.3% (or 500 000 jobs) after nine years over the period 1990-2001. The telecommunications and electricity sectors were the major source of the gains as they account for most of the output in the network industries covered. Those Member States that initiated market opening early and that have opened their markets the most have also benefited the most from these positive effects.

1.2. POLITICAL PERSPECTIVE

The Lisbon strategy has given a positive impulse to the regulatory reforms in network industries.

The network industries have only very gradually been opened up to competition in Europe as there are countervailing forces acting for and against the liberalisation process. In the 1990s, the driving forces behind liberalisation were the efforts to complete the European internal market and technological progress which, by allowing a decline in fixed costs, has reduced the rationale for monopolies. The main forces of resistance, meanwhile, were lobbying by incumbents who feared that they might lose their privileged position, and resistance by trade unions and employees, who feared job losses, and pressure groups which believed that the increase in competition would bring with it a reduction in the quality and safety of public services. In addition, some adverse events that have occurred since liberalisation in the electricity and rail sectors have made headline news. They have contributed to growing doubts in the

3. Section 3 of this paper will examine the extent to which these positive effects have started to materialise.

4. The study covered the old (EU-15) Member States, seven network sectors (electricity, natural gas, telecommunications, rail transport, urban transport, air transport, and postal services), over the period from 1990 to 2003. It can be downloaded from the following website: http://europa.eu.int/comm/internal_market/en/update/economicreform/index.htm#services.

public and political spheres as whether the process is actually delivering positive effects in terms of prices, employment, reliability of supply of essential services, and safety.

Although reforms in some network industries, such as telecommunications and electricity, started before the launch of the Lisbon strategy, the strategy has given them a political impulse to these reforms. The Lisbon European Council of March 2000 called for liberalisation to be speeded up in sectors such as gas, electricity, postal services and transport, and urged the full integration of the telecommunications markets. Similarly, at the Barcelona Council of March 2002, the Heads of State and Government agreed to fully open the electricity and gas markets to competition by mid-2007 at the latest.

In addition, the new Lisbon action plan approved by Heads of State and Government in spring 2005 made it a priority to ensure that Europe retains its attractiveness as an investment location. This depends partly on the size and openness of its markets, its regulatory environment and the quality of its infrastructure. But the opening up of network industries can also make Europe a more attractive place to invest by reducing the costs of essential services that these industries provide to companies. In the 2005-2008 Integrated Guidelines, which define the actions that should be implemented as a matter of priority in order to achieve the Lisbon objectives of growth and employment, Member States are requested to “fully implement the agreed measures to open up the network industries to competition in order to ensure effective competition in European wide integrated markets, allowing at the same time to guarantee the satisfactory delivery of high quality services of general economic interest” (Integrated Guideline No. 8).

1.3. MAIN CHANGES IN THE LEGISLATIVE FRAMEWORK SINCE 2000

There have been a number of important developments in the legislative framework of these industries since 2000....

The legislative and regulatory framework designed to allow network industries to operate efficiently has improved significantly since the launch of the Lisbon strategy. A number of key directives have been adopted to further open electricity, gas, railways and postal services to competition, as have several regulations and directives to improve safety and statistical reporting about the quality of services. Overall, the process of reforms is well advanced in telecommunications, energy and air transport, but less so in rail transport and postal services.

In the air transport and telecommunications sectors, markets were already opened up to competition several years ago, from 1st January 1997 and 1998 respectively. A new regulatory framework for *telecommunications*, including six directives and a decision⁵, was adopted in 2002. This new regulatory framework, better adapted to the technological developments in this sector, builds on the principles of European Union competition law and aims to reinforce the role of national regulatory authorities (for

5. The new regulatory framework consists of six directives and an important decision: the Framework Directive (which outlines the general principles, objectives and procedures), the Authorisation Directive (which replaces individual licences by general authorisations to provide telecommunications services); the Access and Interconnection Directive (which sets out rules for a multi-carrier marketplace, ensuring access to networks & services, interoperability, and so on); the Universal Service Directive (which guarantees basic rights for consumers and minimum levels of availability and affordability); the e-Privacy or Data Protection Directive (covers protection of privacy and personal data communicated over public networks); the Directive on Competition (consolidates previous liberalisation directives) and the Radio Spectrum Decision (sets out the principles and coordination procedures essential for the development of a coherent European Union radio spectrum policy).

example regarding non-discriminatory access to the network). The EU-15 Member States were required to transpose this regulatory framework for telecommunications by July 2003, and the ten new Member States by May 2004. By July 2005, 24 Member States had transposed the regulatory framework. However, problems remain in a number of countries regarding non-conformity and incomplete transposition.

The new *electricity and gas* directives (2003/54/EC and 2003/55/EC) require market opening to all non-household customers by 1 July 2004 and to all customers by 1 July 2007. The new electricity directive was due to be transposed by Member States by July 2004 but as of September 2005 five Member States had still not done so. Several Member States are reported to have already achieved 100% market opening in electricity and gas⁶. However, there are obstacles remaining to effective competition in these sectors, such as the concentration of upstream players in the gas markets, insufficient access to transmission and distribution networks and lack of interconnection capacity between the different networks. Therefore, in 2005, the European Commission launched an enquiry into the electricity and gas sectors in order to identify any possible distortions of competition in these sectors. The enquiry will focus on the functioning of the wholesale markets and cross-border interconnections; it will analyse how prices are formed and how national markets are integrating, and examine barriers to entry. The results will be available in 2006.

Further efforts have also been made to liberalise *rail transport*. The market for the international transport of goods by rail has been opened up since March 2003 on most international lines, and full opening up of national and international freight transport should be a reality from 1st January 2007. Passenger transport could be liberalised in 2009. However, the emergence of competing operators in rail is limited because there are still obstacles to the creation of a European railway area, such as weaknesses in the interoperability between networks, diversity of rail traffic rules and lack of physical interconnections. Finally, in July 2005, the Commission adopted a regulation on public transport services by rail and by road (COM (2005) 319 final). It introduces clear and simple rules for calculating the financial compensation to be granted to public transport operators (which favour limited duration contracts with operators) and sets transparent and competitive tendering processes.

For *postal services*, the 2002 directive set out a step-by-step process of opening up⁷. 16% of the market should be opened up to competition by 2006 and the feasibility of full opening up by 2009 is currently being investigated. The transposition of the current Community framework is now largely complete. However, it may be necessary to monitor the authorisation procedures in Member States to ensure that they are not used to restrict competition unduly. These procedures may act as a possible barrier to market entry if they are difficult to comply with and therefore restrict the ability of new entrants to compete effectively with the universal service provider. They may also explain in part the limited development of competition in the European Union's letter market. Postal services are characterised by

6. See Table 14 in European Commission (2005).

7. According to the 2002 directive, from 1 January 2003 Member States were able to exempt from competition items of correspondence weighing less than 100g and costing less than three times the basic tariff (*i.e.* a 9% market opening to competition) and, from 1 January 2006, those weighing less than 50g and costing less than two-and-a-half times the basic tariff (*i.e.* an additional 7% market opening to competition). Furthermore, all outgoing cross-border mail was to be opened to competition from 1 January 2003 (*i.e.* an additional 3% market opening to competition), although exceptions were to be possible where these are necessary to maintain the universal service – for example if revenue from cross-border mail is necessary to finance the domestic universal service – or where the national postal service in a given Member State has particular characteristics. Finally, the new directive sets 1 January 2009 as a possible date for the full accomplishment of the internal market for postal services.

significant economies of scale and scope that are especially important when operators are required to provide minimum levels of service.

However there are delays in the transposition of new directives in some Member States and in the effective opening up of these markets to competition.

To sum up, there have been a number of important developments in the evolution of the regulatory frameworks in network industries. At the same time, there are delays in the transposition of new directives in some Member States and a number of obstacles continue to hinder effective competition and integration of European markets. These delays in the transposition postpone the impact of the regulatory changes and, in particular, the possible efficiency gains which could result from the new regulatory environment.

1.4. THE DEBATE ON THE FUTURE OF SERVICES OF GENERAL INTEREST SINCE 2000

The opening up of markets to competition has been accompanied by a debate on the future of services of general interest.

In May 2003, a Green Paper on services of general interest (European Commission (2003a)) was published in order to stimulate debate on the provision of high-quality public services in the European Union and, more specifically, to launch a broad public consultation on the role of the Union in defining the general-interest objectives pursued by those services and the way they are organised, financed and evaluated. The possibility of adopting a framework directive in this area was also raised.

Box 1 - Definition of concepts

Services of general interest:

This term covers market and non-market services which the public authorities class as being of general interest and subject to specific public service obligations.

Services of general economic interest:

This is the term used in Article 90 of the Treaty and refers to market services which the Member States subject to specific public service obligations by virtue of a general interest criterion. This would tend to cover such things as transport networks, energy and communications.

Public service:

This is an ambiguous term since it may refer either to the actual body providing the service or to the general interest role assigned to the body concerned. It is with a view to promoting or facilitating the performance of the general interest role that specific public service obligations may be imposed by the public authorities on the body rendering the service, for instance in the matter of inland, air or rail transport and energy. These obligations can be applied at national or regional level. There is often confusion between the term "public service", which relates to the task of rendering a service to the public ("what service is to be provided?"), and the term "public sector" (including the civil service), which relates to the legal status of those providing the service ("who owns the service?").

Universal service:

This concept, developed by the Community institutions, refers to a set of general interest requirements which should be satisfied by operators of telecommunications and postal services, for example, throughout the Community. The object of the resulting obligations is to make sure that everyone has access to certain essential services of high quality at prices they can afford.

Source: *Official Journal of the European Communities*, Services of General Interest in Europe, (96/C 281/03), 26.09.96.

The Green Paper met with considerable interest and the debate was welcomed by many stakeholders. The main results of the consultation have been published (European Commission (2004a)) and the conclusions were presented in the 2004 Commission's White Paper (European Commission (2004b)). The White Paper concluded that the Union and the Member States share the responsibility for providing high-quality services of general interest. It also defined a number of principles that should guide Commission policies in the area of services of general interest, such as: maintaining high levels of quality, security and safety; ensuring consumer and user rights; ensuring cohesion and universal access; transparent and systematic evaluation of performances; and ensuring transparency and legal certainty. It also stressed that open and competitive markets are compatible with high quality, accessible and affordable services.

One of the key questions raised for public debate concerned the need for a framework directive on services of general interest. The views expressed on the subject in the public consultation remained divided. The European Economic and Social Committee and the Committee of the Regions which adopted their opinions on the White Paper in February 2005 both called for a horizontal legal framework for services of general interest at European level. The European Parliament has not yet given its views on the White Paper. However, the role of services of general interest has been an important issue in the debate on the proposed directive on services in the internal market in the European Parliament and in other forums. The decision regarding the need for a framework directive on services of general interest is thus still open and is likely to be debated in the course of 2006.

2. THE COMMISSION'S HORIZONTAL EVALUATION OF THE PERFORMANCE OF NETWORK INDUSTRIES

This section presents the approach chosen by the European Commission to assess the performance of network industries at the European level. It also explains why it is important to better communicate the effects of regulatory reforms to a wider audience.

2.1. HISTORY AND METHODOLOGY CHOSEN FOR THE HORIZONTAL EVALUATION

The Nice European Council requested a regular evaluation of the performances of industries providing services of general economic interest...

In 2000, the Nice European Council requested a regular evaluation of the performances of industries providing services of general economic interest: "The contribution made by services of general economic interest to economic growth and social well-being fully warrants regular assessment, in compliance with the principle of subsidiarity, of the way in which their tasks are being performed, particularly in terms of quality of service, accessibility, safety and fair and transparent pricing. Such assessment could be conducted on the basis of exchanges of good practice or peer review, contributions from Member States and reports by the Commission, at the appropriate level, for example under the Cardiff process. Citizens and consumers could also be consulted, *inter alia*, via a forum such as that on "The internal market in the service of citizens and SMEs" (declaration on services of general interest attached to the Nice European Council conclusions, 7-9 December 2000).

...and, in response to this request, the Commission proposed, inter alia, to conduct annual horizontal evaluations of the performance of these industries.

In its report to the Laeken European Council of October 2001, the Commission set out a strategy for the efficient evaluation of how services of general interest are performing, based on:

- more extensive sectoral reporting,
- an annual horizontal evaluation of these services, and
- benchmarking the effectiveness of measures taken in the Member States, in order to ensure an adequate performance by services of general interest in areas not covered by sectoral reporting or the annual horizontal evaluation.

The horizontal evaluation is not a substitute for the sectoral monitoring of markets or network industries, but is intended rather to enrich and supplement it. The horizontal evaluations cover developments in telecommunications, energy (electricity and gas), transport and postal services in the Member States of the European Union.

In December 2001, the Commission presented the first horizontal evaluation, "Market performance of network industries providing services of general interest: a first horizontal assessment", annexed to the "Report on the functioning of product and capital markets". This was a first response to the request made by the European Council in the declaration on services of general interest attached to the Nice European Council conclusions. It provided a baseline for the future horizontal monitoring and evaluation of these services. There have been three other horizontal evaluations: in 2002, 2004 and 2005. The 2005 report was the first to present an assessment of the situation in the new Member States.

The methodology was adopted by the Commission in 2002.

The Laeken European Council, the Barcelona European Council and the European Parliament, all called on the Commission to present a methodology for the evaluation of services of general interest and to carry out regular evaluations. The methodology was adopted in 2002 (European Commission (2002b)) and was used in the 2004 and 2005 horizontal evaluations.

The evaluations are based on factual information on the evolution of those industries and feedback from citizens, consumers and other stakeholders. They monitor and report on the performance of network industries providing services of general interest as the structural reforms and the process of opening up to competition take effect.

The evaluations focus on the three following questions:

- How has competition evolved in these industries and, in particular, how much has the process of market opening influenced these changes?

The first objective of the evaluation is to determine to what extent the opening up to competition has led to changes in the market structure of both supply (such as changes in the number of competitors, the

extent of concentration or barriers to entry) and demand (for example, whether more freedom of choice has led to users switching suppliers).

- Have these changes had an impact on market performance?

The second objective is to assess whether the changes in the competitive environment have had a positive impact on the performance of the network industries, both in terms of productivity, innovation, or employment and in terms of the equally important aspects of affordability, quality and accessibility of services of general interest.

- How have these changes been perceived by users?

The third objective is to assess whether this changing performance is transparent to and valued by users. The Commission has already carried out consumer satisfaction surveys to this end, but this process needs to be extended to take the perception of all stakeholders into account. Any discrepancy between users' perception and actual market performances by these industries will indicate the need for more transparency, better communication, and better dialogue with users about their performance.

In order to fulfil these three objectives, the horizontal evaluations generally include four parts:

- first, a review of any updates to the legislative framework;
- second, an analysis of market performance (market structure, productivity, employment, prices, etc.);
- third, an analysis of performance measured in terms of public service obligations (affordability, accessibility and quality of services);
- and fourth, a description of consumers' opinions on market performance and the fulfilment of public service obligations.

The methodology is based on four main principles.

The four principles underlying the methodology are the following. First, it must be adapted to the *evolutionary nature* of services of general interest. This implies that the sectoral scope of the evaluation must evolve with the services themselves and with data availability.

Second, it must be *comprehensive*, taking into account the *economic, environmental and social dimensions* of the market performance of network industries providing services of general interest, insofar as data availability permits. The environmental dimension of the analysis was introduced in the 2005 report – but it appears that gaps in current data availability made it difficult to measure the qualitative dimensions of market performance.

Third, it must fully respect the subsidiarity principle. It therefore focuses on the *Community dimensions of the performance of services of general interest*, in particular the achievement of the public policy objectives for these services defined in the regulatory framework established at Community level.

Finally, it must be *transparent and pluralistic*, given the clear social dimension of these services. A mechanism to monitor users' opinion and its evolution has been established for this purpose. Parliament

has also proposed to organise the debate within the various existing forums (Economic and Social Committee, Committee of the Regions, consultative bodies, associations involved in services of general interest initiatives and consumer associations). The results of this debate could be taken into account in and provide guidance for the annual horizontal evaluation, and the evaluation should itself be the subject of debate. The first steps in this direction have been taken but new ideas are currently being investigated. In 2006, a more comprehensive assessment of whether the approach meets the objectives will be carried out with a view to a possible review.

The question of whether it is appropriate to create an independent observatory responsible for annual evaluations has been considered. There is no consensus as whether such a body is needed, who would sit on its board, how it would be financed, or to whom it would report. Some stakeholders have criticised the current institutional set-up because there is a risk of bias in the European Commission evaluating its own policies. This risk does exist in theory. However, it was the Council that requested that the Commission carry out the annual evaluation; furthermore, it is not just in network industries that it evaluates the impact of its own policies. This is good practice that one can also see in the Lisbon strategy for example. More importantly, the European Commission has the knowledge and the resources to carry out the evaluation. Data collection is crucial for this exercise and is difficult enough even for the Commission. Thanks to its relationship with Member States and the existence of Eurostat, the European Commission is able to collect and harmonise data for the 25 Member States. Entrusting an independent body with the task of conducting the evaluation might actually decrease the pressure to provide these data. What is more important is to ensure that the Commission's evaluation is an open and transparent process, and that the Commission does not have any monopoly on the exercise. By allowing free access to raw data, the European Commission encourages third parties to carry out their own evaluation.

2.2. REASONS FOR THE EVALUATION

Evaluation helps determine whether market opening is compatible with social and public policy objectives.

It is necessary to evaluate network industries providing services of general interest because these sectors are undergoing important structural reforms owing to regulatory, technological, social and economic changes. These structural changes must not prevent the social and public policy objectives of these services from being attained. Rigorous and regular assessments of performance are necessary to guide policy making, especially in the context of the process of market opening and reform, and help determine whether market outcomes are compatible with the social and economic objectives of the European Union.

Evaluation helps rectify misperceptions about the consequences of market opening.

The effects of regulatory reforms need to be presented more effectively to a wider audience in order to rectify misperceptions about the consequences of liberalisation. The liberalisation process is generally not very widely accepted because its benefits are not clearly perceived, while the short-term costs (job losses; the risk of a reduction in the quality and security of public services) are. In addition, the cost of reforms tends to be borne by influential interest groups, while the benefits are often spread more widely.

For example, an increase in competition in the electricity market will have negative consequences for the incumbent, which will face a decline in its monopoly power, while all electricity consumers will benefit from the liberalisation. These interest groups are generally successful in influencing the decision-making process either directly, by lobbying politicians, or indirectly, by skewing public opinion in their favour. The misperception therefore persists that the consequences of reform are generally negative. This is compounded by the *status quo* bias generated by uncertainty as to the distribution of costs and benefits.

Evaluation can contribute to an open and transparent debate based on objective facts.

The results of the evaluation should be the subject of an open and transparent debate with all interested stakeholders. Public participation in this debate could be expanded by organising regular meetings with interested parties. Increasing public participation could help users' needs be taken more thoroughly into account and this in turn could make reform more acceptable to the public.

3. EVOLUTION OF MARKET PERFORMANCE IN NETWORK INDUSTRIES

This section looks at one aspect of the evaluation of the performance of the network industries discussed above, namely the analysis of market performance. First, it examines to what extent the opening up to competition has led to changes in market structure. Two parallel developments can be observed in network industries over the last decade: the splitting of what was previously considered one single market into different markets (e.g. production versus distribution), and increasing competition in some of these markets (the eligible ones). It then goes on to discuss the consequences of these changes in market structure on prices, productivity and employment.

The effects of liberalisation are very different depending on the sector and country. Some of the differences can be explained by the number of years since the start of the liberalisation, while other sector- and country-specific factors – such as technological changes, increasing oil prices and quality of regulation – also have an impact on performance.

3.1. MARKET STRUCTURE

Describing market structure in network industries is tricky, mostly because data is lacking and also because traditional structures, regulatory environments, and ownership features all change at the same time. Network industries do not operate like traditional markets. First, they are often subject to *network externalities* – i.e. the value of the service depends on the number of joint services offered and/or on the number of people using the service. Second, they are often characterised by the presence of an *essential facility*. This is an input controlled by a dominant firm and which it is essential for a competitor to have access to in order to reach a related downstream market in which there is no competition or clearly insufficient competition, and for which there is no valid economic reason to refuse access to competitors. One example is the high-voltage electricity grid. Access to such a facility is essential for the competitor because there is no alternative method of serving the downstream market, and because there are technical, legal, or economic obstacles making it impossible or unreasonably difficult for the requesting party to establish alone, or in cooperation with others, its own facility. As the dominant firm

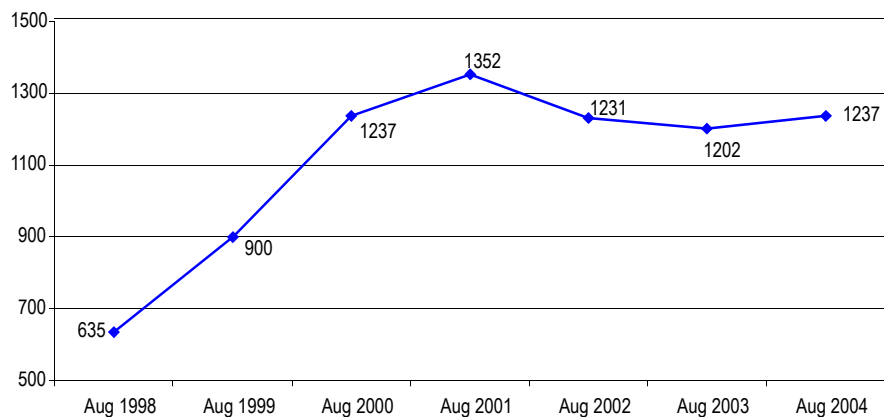
controls this non-replicable part of the network, it can easily refuse access in order to spread its market power to complementary markets. Regulatory and competition authorities should pay additional attention to these characteristics when considering these markets because they make perfect competition difficult to achieve. Higher concentration than in traditional markets is to be expected.

The first stage of liberalisation is characterised by massive market entry...

The first stage of liberalisation in network industries is usually characterised by massive market entry as newly created and foreign competitors receive a licence to provide services. At the same time, competitive pressures will force companies to rationalise and possibly to restructure. One way to restructure could be through mergers and acquisitions. In a second stage, when market entry returns to normal levels, the number of competitors should stabilise and then decrease as competition forces the least efficient firms to exit the market.

This is exactly what has been observed in the telecommunications sector. Figure 1 shows that between 1998 and 2001, the number of operators authorised to offer public fixed telecommunications services in the EU-15 increased by an impressive 113%. The number of authorised fixed operators in the European Union peaked at 1 352 in 2001 and slightly decreased afterwards⁸. However, in 2004, the number picked up again to 1 237 players (1 608 in the EU-25). Despite the large number of players, the number of major competitors remains low in most countries and the market shares of incumbents are still high.

Figure 1 - Number of authorised fixed telecommunication operators in the EU-15 (public voice telephony)



Source: European Commission, Information Society Directorate General.

For energy and water supply, the scant available data suggest that the number of companies active in those markets grew between 1998 and 2000. Interestingly, these sectors display a high one-year

8. It should, however, be noted that among the 1 202 operators legally authorised to provide voice telephony services in 2003, only about half have started operations, and most of them operate only in local areas or for business users. Market opening is certainly one reason for the large number of players, but other factors such as market size and the economic cycle, in particular the dotcom bubble, undoubtedly also have an influence on the number of players.

survival rate (about 80%) and a low death rate (mostly 2-3%, except for the United Kingdom, where the figure stands at over 10%). Merger and Acquisition (M&A) activities have mainly involved companies active in the same domestic market and the majority of the deals in energy have concerned the electricity market, which has encountered two waves of M&A – in 1994-1995 and in 1998-2001. In the gas sector, M&A activities have been more limited, but occurred within the same two periods⁹. The fact that the vast majority of deals have been domestic and within the respective sectors could suggest that economies of scale are potentially high in the energy sectors or that more sector-specific knowledge is required in order to be able to operate.

... but the market structures evolve very gradually, with market shares of incumbents remaining high.

Despite mass market entry, most markets are still dominated by incumbents, indicating that new entrants have been so far unsuccessful in challenging them. This is not surprising, as the presence of an essential facility and of network effects often makes the entry of new firms in these sectors more difficult than in traditional markets, with the result that higher concentration can be expected in these sectors. This situation is observed in telecommunications, which has high market shares for incumbents in most countries and segments.

The more liberalised the market, the lower the market share of the incumbent.

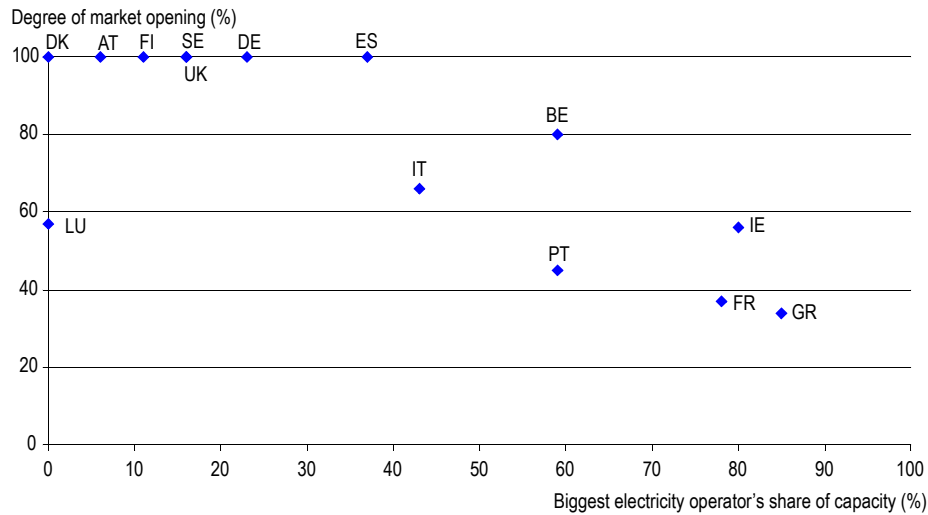
As can be expected, the more liberalised the market, the lower the market share of the incumbent. Thus, incumbents enjoy around 70% of retail revenues in the local calls segment¹⁰ while their market shares in mobile communications are lower, at about 50% of subscriptions. In terms of evolution, the market share of the incumbent shows appreciable yearly changes, sometimes dropping by between five and ten percentage points in local and national call segments. The market share of the incumbent also seems to be more stable in mobile and international call segments, which may prove to be more mature markets. The situation is comparable in the electricity generation market, although cross-country comparisons are more complex because of possible local monopolies in production.¹¹ Nevertheless, as can be seen in Figure 2, there is a clear negative relationship between the degree of market opening and the market share of the largest electricity generator. In gas, the market share of the largest supplier remains even higher than in electricity, reflecting a lower degree of market opening.

9. Interestingly, data for air transport show that most of the M&A activities in that sector also happened within the two periods mentioned above, indicating that they may represent general rather than sector-specific timing.

10. The unbundling of the local loop remains problematic: about 95% of unbundled lines are concentrated in six countries (mostly Germany, then Italy, Denmark, Finland, the Netherlands, and Sweden).

11. Local monopolies may not appear significant when translated in terms of national market share but they still constitute a barrier to competition.

Figure 2 - Biggest electricity generator's share of capacity and degree of market opening (in %, 2003)



Source: European Commission, 3rd Benchmarking report on the implementation of the electricity and gas market.

The integration of energy markets is still hindered by legal, physical and technical barriers.

Market integration obviously also depends on the degree of openness to foreign competition. Congestion problems in cross-border capacity, be they due to either a lack or inefficient allocation of infrastructure, can create substantial hurdles for foreign competitors and keep prices at artificially high levels. Congestion is frequent in electricity markets. The Second benchmarking report¹² on electricity and gas markets indicated that 12 interconnections out of the existing 24 were constantly or frequently congested, and stressed the lack of market-based methods to solve congestion¹³, the weak information available on available capacities, and the poor reliability of the allocated capacity. As we see, the gap between legal and effective opening up to competition is still large in several countries and sectors, as effective competition is still hindered by several legal, physical and technical barriers.

Large pan-European players dominate the market, especially in telecommunications and energy.

This lack of market integration and the pattern of consolidation and entry have resulted in the presence of large pan-European players, especially in energy and telecommunications. This emerging pattern carries a risk of dominant positions and calls for increased scrutiny from regulatory and competition authorities to ensure that there is effective competition. Other obstacles to competition in energy include inadequate regulation, insufficient unbundling, access to the network and a lack of integration to other networks.

Market structure is one indicator of competition. However, a high concentration ratio does not in itself mean that effective competition is non-existent, as the presence of small competitors with potential to

12. European Commission (2003b), page 74.

13. E.g. auction procedures.

grow or the threat of entry may be sufficient. High concentration ratios are also found in other industries and even a duopoly can theoretically deliver prices that are close to marginal costs. However, network industries have characteristics – namely network externalities and the existence of an essential facility – that can potentially thwart effective competition. Another indicator of the emergence of effective competition and the benefits of market opening is prices. To investigate the performance of these network industries in more depth, we now turn to the analysis of their price performance.

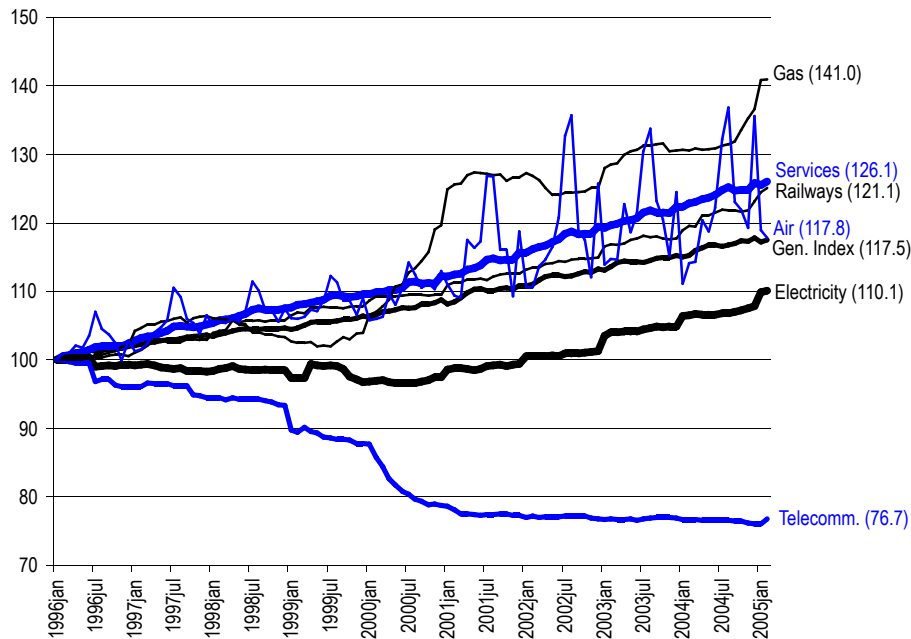
3.2. PRICE

Opening up markets to competition should offer a number of benefits, including changes in prices to better reflect marginal costs. In the medium to long term, the expected effect of opening markets up to competition is a downward convergence in prices, assuming other factors remain constant. However, the degree of competition is not the only determinant of the evolution of prices and technological developments. The evolution of the regulatory framework, the use of prices as a policy instrument, and the speed of market liberalisation across segments and countries will also influence price levels. Therefore, the convergence effect may be overshadowed in the short term by these elements. An evaluation of the performance of network industries should therefore scrutinise the evolution and possible convergence of prices across countries. It should also try to disentangle the effect of market opening on prices from the influence of external elements. Finally, although opening up markets to competition has been accompanied by palpable benefits in terms of price cuts in some segments such as international telecommunications, some stakeholders have raised concerns about a possible uneven distribution of those benefits across types of users. This section investigates these various issues in more depth, making use of both factual data and appropriate econometric techniques.

The price of telecommunications and electricity increased by less than the consumer price index over the period 1996-2005.

The evolution of the Harmonised Consumer Price Index (HICP) in network industries, as shown in Figure 3, is interesting. Since 1996, prices in telecommunications in the EU-15 have decreased dramatically – by an average of 2.9% per year. Prices of telecommunications are 23.7% lower than in 1996. When compared with the general evolution of prices in the economy, the change is even more impressive as relative prices (*i.e.* corrected for the evolution of the general index) in telecommunications are about 35% lower than nine years ago. However, the decrease in prices seems to have come to an end: whereas the average yearly decrease was about 3.2% between 1996 and 2000, speeding up to about 6.3% between 2000 and 2002, prices have been relatively flat ever since. And although relative prices have actually continued to decrease even in this context of stable prices, it is still unclear whether the full potential for price cuts has been achieved or whether further steps such as cuts in fixed price of subscription or technological developments could bring further price decreases.

Figure 3 - Evolution of prices in EU-15 network industries
(Harmonised Index of Consumer Prices, January 1996=100)



Source: Eurostat.

Electricity prices have been rising since 2000, and gas prices rose by 41% over the period 1996-2005.

The situation in electricity is somewhat comparable. Between 1996 and 2000, prices decreased by an average of 0.8% a year. Ever since then, prices have increased (notably with every new year), by a yearly average of 1.9% between 2000 and 2002 and 3.1% between 2002 and 2005. However, relative electricity prices are still 6.3% lower than in 1996. Prices in the gas sector have followed a different pattern, probably because they are based on long-term agreements indexed to the price of oil. Dramatic increases in 2000-2001 and over the most recent period have pushed gas prices up to 41% above their 1996 level. Finally, notwithstanding large seasonal effects in air transport, prices in the transport sectors have generally closely followed general inflation.

Price reductions can be attributed to market opening in telecommunications, energy and rail transport.

It is difficult to establish a link between market opening and the evolution of prices; appropriate statistical techniques are needed to disentangle the effects of technical progress, the type of regulation, and simply the influence of the general economic environment. A study by Copenhagen Economics (2004) developed static and dynamic panel data models to estimate the statistical relationship between a quantitative indicator of market opening and the price performance of the sector. The study reveals that in most cases market opening is a statistically and economically significant determinant of price reductions. In the electricity and rail transport sectors, prices are estimated to be 10-20% lower than

they would have been without liberalisation. The price reduction is even bigger for gas (35%) and for telecommunications (40-60%). However, the impact has been insignificant for urban transport, air and postal services. Overall, these results indicate that in most network industries, when controlling for external parameters, market opening leads to lower prices. It also suggests that, in most sectors, additional potential prices cuts could be achieved by further market opening.

Some price convergence can be observed, especially for international and local telephone calls and to a lesser extent for national calls, electricity and transport.

Economic integration of network industries in Europe should bring some price convergence. However, price convergence is a long-term goal that might not be achieved in the short term for a number of reasons. First, markets have been opened up to competition at a varying pace in the different countries and this may lead to differences in the rate at which prices adjust in segments where prices did not previously reflect costs, either because they were regulated or because they were the outcome of monopoly positions. Furthermore, price and cost developments across Member States may persist even after these adjustments are made, as a result of other factors including differences in how the sectors are regulated, differences in input costs and technologies, and insufficiently connected infrastructure leading to incomplete markets.

To investigate the degree of price convergence across countries and over time we have used a number of statistical and econometric techniques. The econometric analysis¹⁴ presented in Table 1 shows strong mean convergence in telecommunications, especially for international and local calls. For these two segments, prices are converging at a rate of 20% each year. The half-life (*i.e.* the average time needed to halve the difference with the average prices) is 3–3.5 years. Convergence in national calls is also found, although at a slightly slower pace. The econometric analysis also reveals a slight convergence in prices of transport (which includes road and air) and electricity for households but no evidence of convergence in gas for households¹⁵.

14. Convergence can be assessed formally by looking at the following model: $Y_{i,t} - \bar{Y}_t = \phi(Y_{i,t-1} - Y_{t-1})$

where:

$Y_{i,t}$ is country i 's log of price level at time t .

\bar{Y}_t is the non-weighted average of the log of price level for the sample at time t .

Then, $(1 - \phi)$ represents the rate of convergence of country i 's price level to the sample's average price level. Furthermore, the half-life x (*i.e.* the time needed to halve the difference to the mean) is the ratio of $\log(1/2)$ to $\log \phi$. After transformation, we estimate the following model:

$$\Delta Z_{i,t} = -\theta Z_{i,t-1} + \varepsilon_t$$

with

$$Z_{i,t} = Y_{i,t} - \bar{Y}_t$$

$$\Delta Z_{i,t} = Z_{i,t} - Z_{i,t-1}$$

$$\text{and } \theta = (1 - \phi)$$

θ gives us the rate of convergence in prices across countries.

15. A recent ECB working paper finds downward trends in average prices in network industries for the EU-15 with convergence (as measured by the coefficient of variation) in local and national calls, gas for small household users but divergence in international and mobile calls as well as in electricity for large industrial users. See Martin *et al.* (2005).

Table 1 - Price convergence in the EU-25

EU-25	Rate of convergence θ	t-stat $H_0: \theta = 0$	Half-life	Countries	Number of observations	Adjusted R ²	F (prob)
Local calls	0.204	6.56***	3.038	25	100 (2000-2004)	0.296	0.00***
Nat. calls	0.098	2.75***	6.720	25	100 (2000-2004)	0.062	0.007***
Calls to US	0.171	3.70***	3.491	25	100 (2000-2004)	0.117	0.000***
Transport	0.038	2.44**	17.892	25	100 (2000-2004)	0.047	0.017**
Electricity	0.050	1.95*	13.513	20 (exc. EE, LV, LT, PL, SK)	100 (1999-2004)	0.028	0.054*
Gas	0.042	1.13	16.154	15 (exc. CY, EE, EL, FI, LT, LV, MT, PL, PT, SK)	60 (2000-2004)	0.005	0.264

Source: based on Eurostat data. *, ** and *** indicate significant at 10, 5 and 1% levels respectively. Due to the estimation procedure, one lag is necessary. Therefore a 6-year period will bring 100 observations.

The benefits of liberalisation in terms of lower prices do not seem to come at the expense of low-income users in telecommunications and electricity.

The evidence that market opening has led to price reductions immediately raises the question of how these gains are distributed across types of users. Some stakeholders fear that liberalisation brings benefits to large users at the expense of low-income households. Others argue that liberalisation is beneficial to urban users while rural users suffer from higher prices or a lower quality of services. The lack of data makes it difficult to confirm or refute these arguments, but raw data on price developments can provide some interesting indications on the distribution of gains across users with different consumption levels. In telecommunications, there has been a trend towards tariff rebalancing in several Member States, ending previous practices of cross-subsidisation between local and international calls. More expensive local calls can be potentially detrimental to low-income users who are more likely to use this segment.

The computation of affordability indices in various horizontal evaluations undertaken by the European Commission shows an increase in affordability of telecommunication services for all categories of users and no significant difference in the distribution of benefits between the least favoured citizens and citizens around median income levels. For the energy sector, raw price data indicate sharper price cuts in percentage for small users than for large ones. Affordability indices – which control for quantity consumed – show no substantial differences between low-income and average-income users, and furthermore show that indices are improving for both categories. Finally, for gas, the developments have been mixed across countries and categories of users. Higher gas prices have indeed made gas less affordable in some Member States.

3.3. PRODUCTIVITY

Network industries in the EU-15 were marked by high productivity growth throughout the 1990s. Table 2 shows that, of the 56 sectors reviewed, four network industries are in the top ten of change in labour productivity per hour worked. Of the network industries, only inland transport – a mixed sector including road freight, passenger transport and local transport – performed worse than the average productivity growth for the total economy, and then only slightly.

Table 2 - % Change in Labour productivity per hour worked in the EU-15: 1990-2002
(in chained (1995) euros for some selected sectors)

1. Electronic valves and tubes	23,044%
2. Office machinery	5,854%
3. Telecommunication equipment	217%
4. Communications	147%
5. Mining and quarrying	125%
6. Water transport	122%
7. Electricity, gas and water supply	90%
8. Chemicals	88%
9. Radio and television receivers	78%
10. Air transport	77%
24. Financial intermediation, except insurance and pension funding	35%
TOTAL ALL INDUSTRIES	27%
34. Inland transport	25%
40. Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	20%
47. Construction	8%
56. Hotels & catering	-8%

Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, <http://www.ggdc.net>.

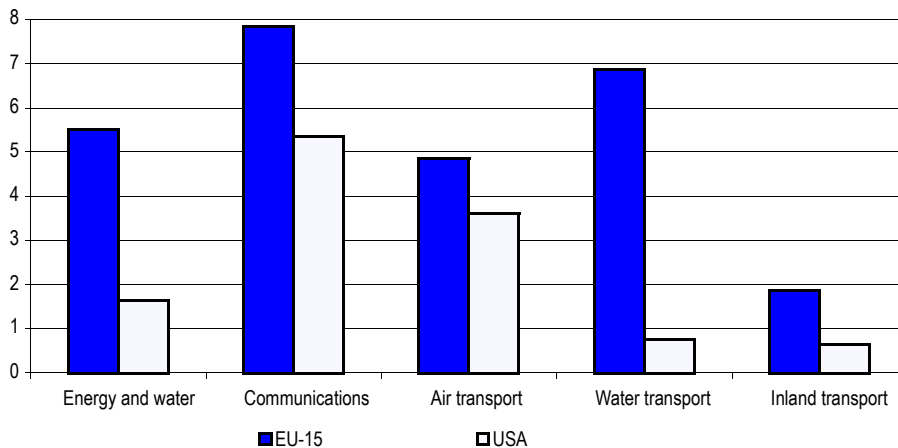
Average productivity growth in EU-15 network industries has been higher than in their United States counterparts and a sizeable part of productivity growth can be directly attributed to market opening.

In addition, average productivity growth for 1990-2002 was consistently higher in EU-15 network industries than in their United States counterparts. Although some of the difference in growth rates may be explained by catch-up effects, it might also be the result of market opening in these sectors.

To establish whether this is in fact the case, the Copenhagen Economics study produces a detailed analysis of the impact of market opening on productivity. The study finds a significant, large impact for the fixed telecommunications sector, for which productivity is 80% higher than it would be in the absence of market opening. A positive effect is also found for mobile telecommunications, rail freight, air transport and electricity (with the productivity impact varying between 7 and 30%). In contrast, the study does not find any significant effect for urban transport, gas and postal services. It appears however that productivity gains may appear only with some lags and that in the short run productivity gains in some sectors such as electricity mainly reflect labour shedding. Nevertheless, several sectors such as air

transport, communications and inland transport showed increases in both employment and productivity, indicating that there is not necessarily a trade-off in the long-term.

Figure 4 - Productivity growth in US and EU-15 network industries
(average annual growth rate of labour productivity per hour 1990-2002, in % per year)



Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, <http://www.ggdc.net>.

3.4. EMPLOYMENT

A number of caveats should be mentioned when assessing the evolution of employment in network industries. First, the change in employment due to liberalisation is difficult to disentangle from other effects such as the growth of the sector due to the emergence of new services or technological change. Moreover, employment change in former protected segments may also occur simply because of substitution effects – for example, consumers who switch from fixed-line technology to mobile telecommunications. Second, other effects may play a role at the macroeconomic level. The reduction in employment in the sector concerned can be counter-balanced by job creation in the rest of the economy thanks to the decrease in the prices of the services offered and a subsequent increase in competitiveness of industries using these services. Assessing this evolution at the macroeconomic level is a difficult exercise which goes beyond the objectives of this report. However, more can be said about employment at sectoral level and in incumbents.

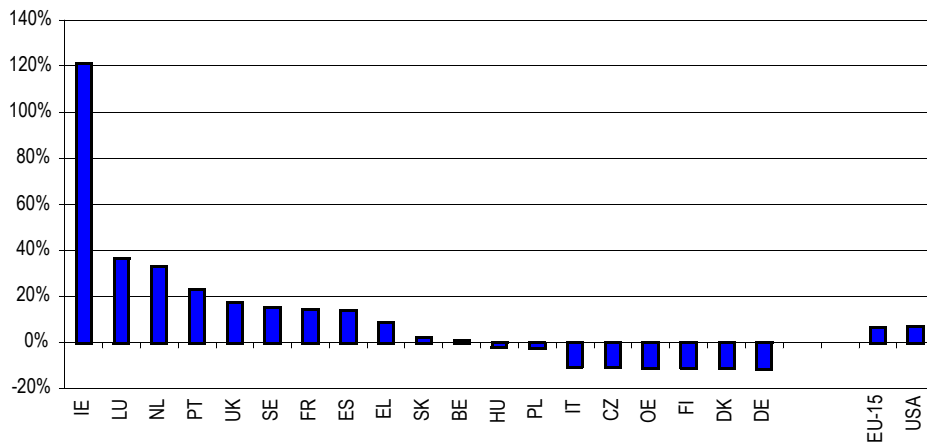
There are obvious concerns that liberalisation, by increasing competition, may decrease employment. This is indeed likely for incumbents because, by opening up markets to competition, liberalisation will automatically decrease their market share. However, it also offers possibilities for job creation. First, the emergence of new competitors means that new jobs are created. Second, increased competition can foster the growth of the market, increasing the volume of sales for all competitors, incumbents included. Alternatively, incumbents may retain their labour force until they really face competition. The question is whether, on balance, liberalisation has been beneficial or detrimental to employment. The final effect on employment will depend on the relative influence of three interrelated elements: a decrease in the

number of workers employed by incumbents, the new positions created by competitors, and sectoral growth, which has a positive impact on employment.

The fears of massive job losses associated with liberalisation are not borne out by the data.

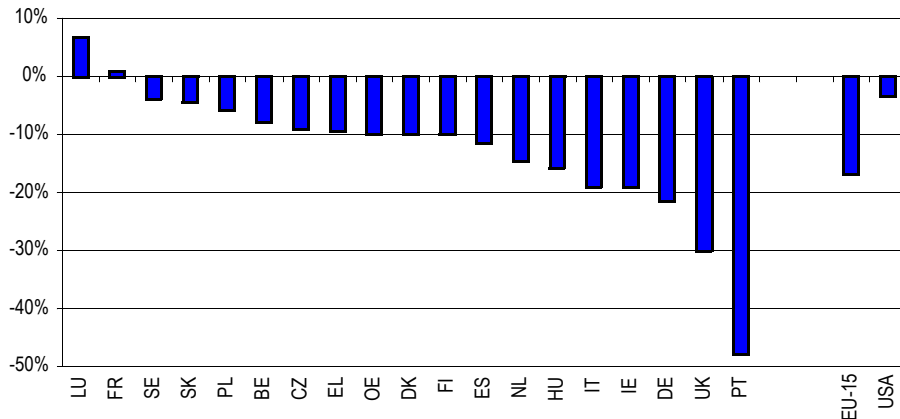
In 2002, 8.7 million people were employed in EU-15 network industries. This is a decrease of about 50 000 compared to 2001 but is close to the level of employment in 1980. Employment fell by 16.8% in electricity, gas and water between 1996 and 2002 (see Figure 6). In transport, however, employment increased by 5% in inland transport, and 19% in air transport, but fell by 9% in water transport (see Figure 7). In communications, employment increased by 6.6% overall, though there were differences in the evolution of employment in different Member States (see Figure 5).

Figure 5 - Evolution of employment in communication services (% change 1996-2002)



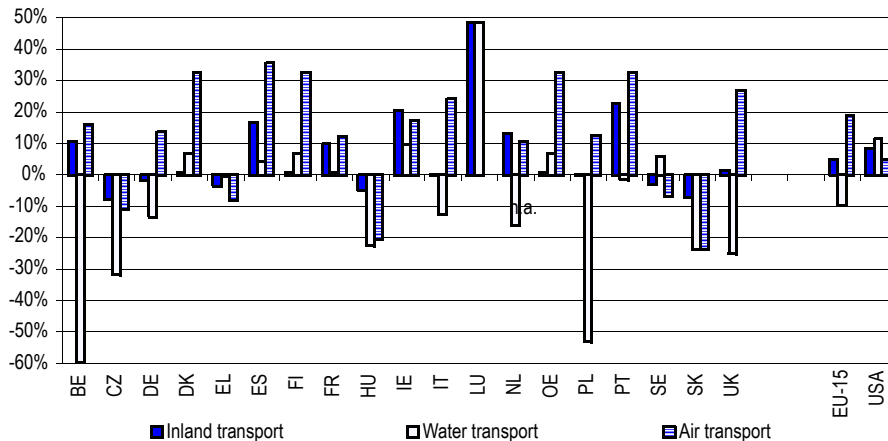
Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, <http://www.ggdc.net>.

Figure 6 - Evolution of employment in electricity, gas and water (% change 1996-2002)



Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, <http://www.ggdc.net>.

Figure 7 - Evolution of employment in transport (% change 1996-2002)



Source: Groningen Growth and Development Centre, 60-Industry Database, February 2005, <http://www.ggdc.net>.

It is very difficult to establish a clear link between market opening and changes in employment from these data. Understanding changes in employment at sectoral level requires a better knowledge of sectoral specificities. The telecommunications sector can offer interesting insights because it is in a more advanced stage of liberalisation than other sectors. In 2001, the European Commission found that total employment in telecommunications increased in all countries except Belgium and Sweden between 1996 and 2000. This was mainly because job creation associated with the emergence of new competitors more than outweighed job losses in countries where the incumbent cut its workforce. The report also found two interesting findings. First, the traditional segment (wirelines) suffered job losses in

most countries, and incumbents bore the brunt of these job losses. Second, the development of new technologies, mainly mobile communications, has been the major source of job creation in the sector as a whole. Although these results should be treated with caution, as the period may represent a bubble in the sector, they highlight the interesting substitutions that take place between segments and competitors.

In addition, as mentioned above, Copenhagen Economics' (2004) global equilibrium model has demonstrated that market opening in the network industries has contributed significantly to the economic performance of the European Union economy with an estimated net addition of approximately 500 000 new jobs across the EU-15 (0.3% of employment), both inside and outside the network industries.

CONCLUSION

Although the process of opening up network industries to competition started before the launch of the Lisbon strategy, this strategy has given a positive impulse to these reforms. Since 2000, there have been a number of important developments in the legislative framework designed to further open these sectors up to competition. These reforms in the network industries can contribute to the Lisbon objectives of growth, productivity and employment because the benefits of market opening are not limited only to the markets open to competition, but spill over into the rest of the economy. Several studies show that the market opening of network industries can increase efficiency and lower prices, and thereby increase GDP and employment in the medium term. The evolution of market performance in these industries since the second half of the 1990s also shows that opening up to competition has brought productivity improvements and lower prices in a number of sectors.

However, there are delays in the transposition of new directives in some Member States and a number of obstacles continue to hinder effective competition in these sectors. This reduces the possible efficiency gains which could result from the new regulatory environment, and requires that the national regulators and competition authorities intervene to ensure that users have a genuine choice of supplier, that competition between suppliers is effective and that the benefits of liberalisation are passed on to users. Otherwise, there is a risk that pan-European players with a dominant position will exclude new entrants in the future.

While opening up to competition has clear benefits, it can also entail short-term adjustment costs in the form of job losses in the sectors liberalised. This is not necessarily always the case, however, as shown by the growth of employment in the telecommunications sector, which has grown with the emergence of new technologies. Nevertheless, reforms in network industries remain a politically sensitive issue.

An objective evaluation of the performance of these industries is therefore essential in order to determine whether market opening is compatible with the social and public policy objectives for these services. It can help correct misperceptions about the consequences of the liberalisation and it can provide the basis for open and transparent debate with all stakeholders. That is why, since 2001, the Commission has carried out annual horizontal evaluations of the performances of network industries providing services of general interest. However, while these evaluations provide interesting results,

better data would allow more accurate analysis, for example of the distribution of the benefits across users, the effects of competition on long-term infrastructure investments, or the monitoring of the quality of the services.

Finally, more needs to be done to open up the debate on the results of these evaluations to all interested stakeholders. This could increase the acceptability of these reforms among the public.

REFERENCES

- COPENHAGEN ECONOMICS, *Market Opening in Network Industries*, Study made for the European Commission, December, 2004.
- EUROPEAN COMMISSION, *Market performance of network industries providing services of general interest: a first horizontal assessment*, in "Report on the functioning of product and capital markets", 2001. (http://europa.eu.int/comm/economy_finance/publications/structural_policies/structuralpolicies_networkindustries_en.htm)
- EUROPEAN COMMISSION, *A Methodological Note for the Horizontal Evaluation of Services of General Economic Interest*, Communication from the Commission, COM(2002) 331 final, 2002a. (http://europa.eu.int/eur-lex/en/com/cnc/2002/com2002_0331en01.pdf)
- EUROPEAN COMMISSION, *Structural reforms in labour and product markets and macroeconomic performance in the EU*, Chapter 2 in "The EU Economy: 2002 Review", 2002b.
- EUROPEAN COMMISSION, *Green Paper on Services of general Interest*, COM(2003) 270 final, 2003a. (http://europa.eu.int/eur-lex/en/com/gpr/2003/com2003_0270en01.pdf)
- EUROPEAN COMMISSION, *Third Benchmarking report on the implementation of the electricity and gas market*, 2003b. (http://europa.eu.int/comm/energy/electricity/benchmarking/index_en.htm)
- EUROPEAN COMMISSION, *Report on the public consultation on the Green Paper on Services of General Interest*, Commission Staff Working Paper, SEC(2004) 326, 2004a. (http://europa.eu.int/comm/secretariat_general/services_general_interest/docs/comm_2004_0326_en01.pdf)
- EUROPEAN COMMISSION, *White Paper on services of general interest*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2004) 374 final, 2004b. (http://europa.eu.int/eur-lex/en/com/wpr/2004/com2004_0374en01.pdf)
- EUROPEAN COMMISSION, *Evaluation of the Performance of Network Industries Providing Services of General Economic Interest*, 2005 Report, SEC(2005) 1781, 2005. (http://europa.eu.int/comm/economy_finance/publications/structural_policies/structuralpolicies_networkindustries_en.htm)
- ILZKOVITZ, F., R. MEIKLEJOHN & U. MOGENSEN, *Liberalisation of network industries: Economic implications and main policy issues*, European Economy n°4, 1999.
- ILZKOVITZ, F. and G. NICODÈME, *Liberalisation of European Network Industries: How to avoid a fatigue?*, INFER annual conference proceedings, Bonn, August 2002.
- MARTIN, R., M. ROMA & I. VANSTEENKISTE, *Regulatory reforms in selected network industries*, ECB Occasional Paper, No. 28, 2005.
- NICODÈME, G. & J-B SAUNER-LEROY, *Product Market Reforms and Productivity: a review of the theoretical and empirical literature on the transmission channels*, Economic Paper No. 218, European Commission, 2004.
- OECD, *The implementation and the effect of regulatory reform: Past experience and current issues*, ECO/WKP(2000)24, 2000.

CHAPTER 4

ECONOMIC IMPACT OF NETWORK INDUSTRY REFORM: DRAWING LESSONS FOR BELGIUM

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Abstract:

Market reform of network industries, where vertically integrated legal monopolies are turned into duly regulated competitive markets, is expected to achieve a positive economic outcome. Based on the experience other countries have had with reform, the paper tries to draw lessons for Belgium. The most important conclusion is that reform can indeed have a positive economic impact, but that its success very much depends on the way the reform is carried out. The paper starts by setting out a theoretical account, followed by an analysis of reform, and an evaluation of the Belgian case. The analysis is approached from three different angles. Firstly, the results of a survey of academic studies are examined, most of which confirm the expected favourable impact. Secondly, international benchmarking is applied, which shows that the method of reform adopted and its speed are crucial factors. Thirdly, a careful analysis of reform and its economic impact in Belgium is carried out. The analysis indicates that the impact can be substantial. Judging by the evaluation of the Belgian case it seems that, depending on the method of reform adopted and the quality of the regulation, some risks are involved which could reduce the effectiveness of the reforms.

Keywords:

Welfare, network industries, liberalisation, regulation.

JEL Classification:

D61, L43, L51, L90.

INTRODUCTION

For the past two or three decades, network industries around the world have been in a stage of reform. Before reform, network industries were in many cases organised as reserved national or regional monopolies, mostly operated by public companies. There was, however, a growing conviction that such a situation was resulting in economic performance that was not efficient enough. This conviction led to a sequence of reform initiatives: first in the United States, the United Kingdom and the Commonwealth countries; later in Northern European countries such as the Netherlands and Scandinavian countries. In the first half of the 1990s the European Union started to impose reforms, partly driven by the objective to create an internal market. The reforms basically consist of allowing competition in those segments where there is no 'natural' hindrance to competition, and regulating in an efficient, pro-competitive way the segments of the industry that should remain a monopoly. In many cases, public companies are partly or wholly privatised. The reformed structure of the industry should give rise to market conduct that would improve economic performance. In other words, it is expected that reform will result in higher efficiency of cost and prices, increased competitiveness and increased economic activity.

Together with most Southern European countries, Belgium is relatively late in implementing market reforms. In most cases Belgium strictly follows the calendar set out by European Union legislation. In some cases Belgium lies ahead of the European Union calendar (e.g. where the Flanders energy sector is concerned). Of major concern are the 'costs' of the reform and the issue of whether the expected positive effects will accrue in practice. The costs of the reform basically consist of loss of employment in the industries concerned and a probable loss of control over the provision and quality of services of general interest. Furthermore, there may be doubt as to whether reform actually does have a positive impact on cost and prices and stimulates productivity and economic growth.

In this paper, an analysis of that relationship is made in order to draw lessons for the situation in Belgium. It is based on existing experience from other countries and international organisations. From the analysis it follows that market reform of network industries may indeed have a favourable economic impact, but that it depends greatly on the quality of the reform. The present state of reform and regulation in Belgium involves some risks that might jeopardise the effectiveness of the reforms.

The analysis of this paper builds on the work of Huveneers (2005), Mistiaen (2005) and Van der Linden (2005abc). It commences with a brief, theoretical account of the relationship between reform and its economic effects (§1). There are three strands to the actual analysis of the relationship: a survey of academic studies that analyse the relationship in quantitative terms or simulate the impact upon the economy (§2.1); an international benchmarking exercise focusing on the impact of the quality of reform (§2.2); and a cautious forecast for reform and its economic impact in Belgium (§2.3). Lastly, mainly on the basis of the results of the benchmarking exercise, the present state of reform and regulation in Belgium will be evaluated (§3).

1. THEORETICAL FRAMEWORK

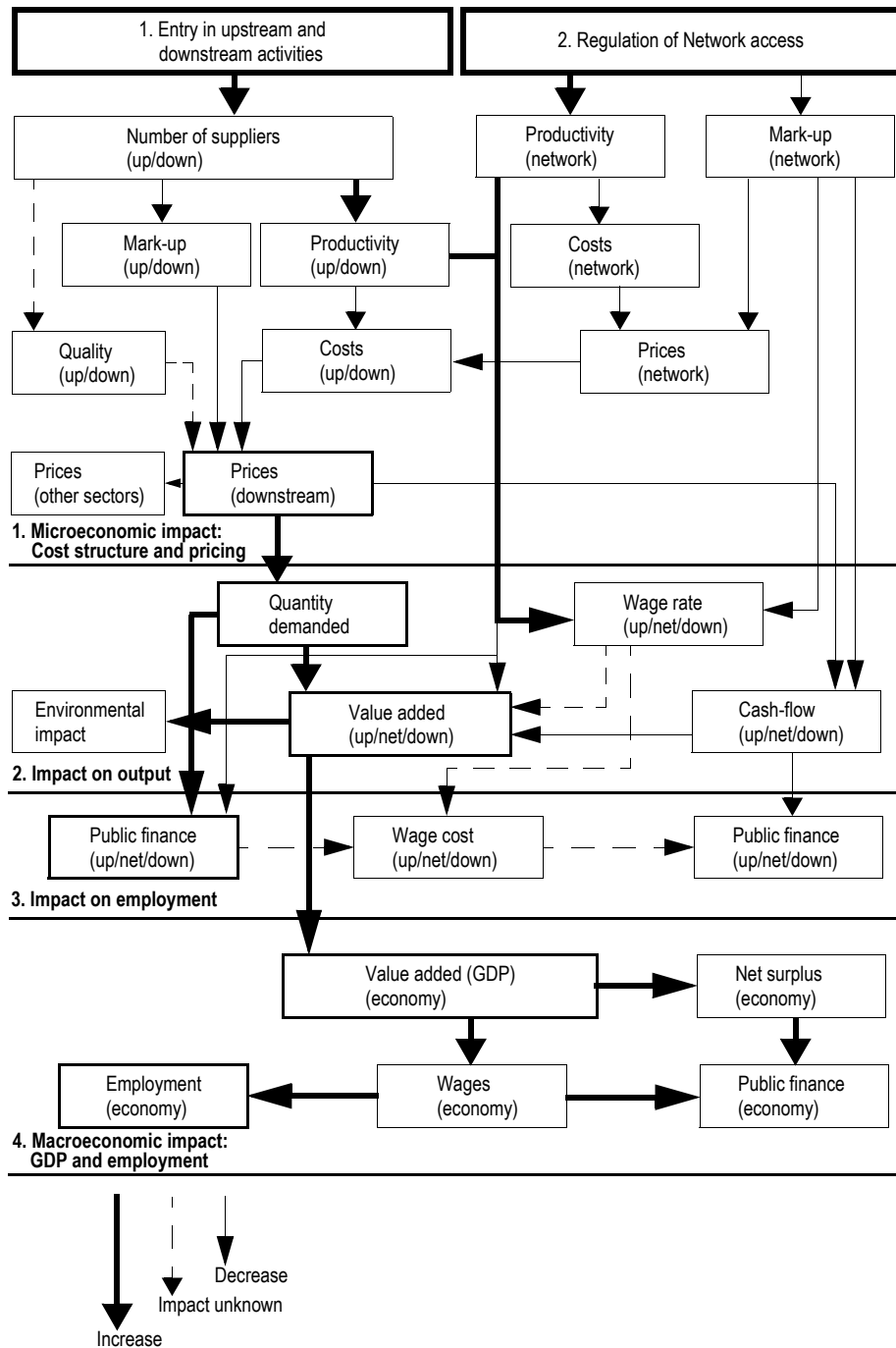
Before reform, many network industries were monopolies. When compared to a competitive market, a monopoly may give inefficient performance. If the conduct of the producer is profit-maximising it will set a price that is higher and sell less than would be sold in a competitive market. This results in allocative inefficiency: there is a loss of social welfare. Moreover, if consumer welfare is valued above producer welfare (the latter being the maximised profit), there is distributive inefficiency: part of consumer welfare is transferred to the producer as a monopoly rent. A third type of inefficiency is productive inefficiency. This inefficiency is not derived from the profit-maximising conduct of the monopolist. It stems from the fact that there are no competitors to give the monopolist an incentive to adopt the most efficient production technology.

These outcomes basically hold for a private monopoly without economies of scale. In network industries, however, there often are economies of scale and the company is in public hands. This does not, however, particularly change the incidence of inefficiencies. When there are *economies of scale*, which typically is the case in the infrastructure segments of network industries, profit-maximising conduct results in the three inefficiencies in the same way as it does in the 'standard' case. When the monopolist is a *public company*, goals other than profit maximisation may be pursued. These goals may nevertheless lead to allocative inefficiency if the price is set higher or lower than it would be on a competitive market. There may also be productive inefficiency as there is no incentive to adopt the most efficient technology. There may, however, be no distributive inefficiency, as any rent may become part of the government budget.

The aim of reform is to alleviate these inefficiencies by opening up markets and ensuring adequate regulation. Markets may be opened up in the segments where there is no natural monopoly. Competitive forces may lead to the entry of new suppliers and push prices to the level that optimises allocative efficiency and eliminates distributive efficiency. Even more gains may be achieved when cost competition leads to an increase in productive efficiency. In the segments with a natural monopoly, market opening would be inefficient. Instead, adequate regulation would give the monopolist, be it a private or a public company, incentives to achieve allocative, productive and distributive efficiency. This is one of the central issues in the analysis of network industries. Notable contributions to this issue are given by Armstrong *et al.* (1994), Bergman *et al.* (1998), Ilzkovitz *et al.* (1999), IDEI (1999), Newbery (1999) and Laffont & Tirole (2000). A price cap seems to be one of the most suitable ways of regulation. Where possible, yardstick competition and licence auctions may also be effective. Setting a limit on the profit margin has proved less effective in practice.

Other conditions for effective market reform are vertical separation and privatisation. Although market reform may be effective without these measures, they help to create a level playing field. A stepwise reform may be useful too. It gives the various parties an opportunity to prepare for the new situation. There must be a mechanism ensuring the production of services of general interest when they cannot be produced profitably enough by the market. Finally, some labour market reform may also be needed and it is often useful to establish an independent sectoral regulator for all sector-specific regulatory tasks.

Figure 1 - Economic impact of network industry reform: Theoretical framework



Source: FPB.

The economic impact of the reform is summarised in Figure 1. Both the opening-up of some segments for competition and the pro-competitive regulation of others should lead to a fall of profit margins, costs and prices. Consequently, on the domestic markets people would be able to afford more of the offered services. On the international markets competitiveness would increase. In both cases output may increase. The impact on employment depends on two forces. On the one hand, the increase in productive efficiency may lead to a fall in employment. On the other hand, the increased output may boost labour demand. The net effect depends on the given circumstances.

Besides the impact upon the sector itself there may be macroeconomic effects. Although this impact is probably small with respect to the whole economy it must not be overlooked. One objective of market reform is to achieve an increase in welfare. Via sales channels, the network industries' lower prices may influence the prices of other sectors and increase output and competitiveness. Via its purchases, the network industries' increased output may influence the output of other sectors and increase employment and tax revenues.

2. EMPIRICAL ANALYSIS OF NETWORK INDUSTRY REFORM

In order to draw some conclusions which can be applied to the economic impact of network industry reform in Belgium, the theoretical relationship discussed in the previous section has been analysed in three ways. The first is a survey of academic studies. The second is an international benchmarking exercise focusing on the shape of the reform. The third is a cautious forecast for reform and its economic impact in Belgium.

2.1. SURVEY OF THE LITERATURE

During the past two decades many studies on the economic impact of market reform have been carried out. In general, these studies confirm the impact that has been described above. This section is based on 17 studies, one of which (Gönenç *et al.*, 2001) is a survey itself. The studies can be grouped into three categories. The first category consists of descriptive studies. These studies simply follow the development of key economic performance indicators such as market structure, prices, productivity and employment (ECB, 2001; FE, 2002; CEC, 2004). The second category consists of estimation of statistical relationships. In these studies, economic performance indicators are regressed on reform or regulation indicators and a number of control variables that also influence the performance indicators. A central element of such studies is the development of a sensible regulation indicator. In such an indicator, qualitative information on regulation must be transformed into a quantitative score. The qualitative information involves several elements of regulation, such as vertical separation, opening-up of markets, privatisation and market structure. The studies are made at both micro- and a macroeconomic levels. It is the largest category in terms of number of studies. Some references are given in Table 1, to be discussed below. The third category consists of macroeconomic model simulations. In these simulations the outcomes of microeconomic analyses are introduced into a macroeconomic model as an exogenous shock or a parameter change. The model then estimates the impact on macroeconomic performance of, for example, prices, employment and GDP. Notable studies have been made by OECD (1997) and CEC (2002), and very recently by CE (2005), whereas Gönenç *et al.* (2001) discuss some older analyses.

A summary of the survey is given in Table 1. It shows whether the relationships found between regulation indicators and performance indicators are positive (+), negative (-), or insignificant or nonexistent (0). The studies adopted and developed many different regulation and performance indicators. For convenience they are grouped into a certain number of categories: four for the regulation indicators, six for the performance indicators. They are represented in the columns and rows of Table 1 respectively.

The categories of regulatory indicators are:

- *Liberalisation*: measures that allow entry and competition;
- *Market organisation*: modifications of the structure and regulation of the industry, such as vertical separation and price regulation;
- *Privatisation*: sale of government shares or differences in public ownership between countries and/or industries;
- *Aggregated/not determined*: measures that are either compiled from several dimensions of regulation, or that are not or insufficiently defined by the author(s).

The categories of performance indicators are:

- *Productivity/efficiency/innovation*: a wide category consisting of several measures that indicate the improvement of production techniques and the fall of average costs;
- *Prices*: self-evident, but note that a negative sign indicates a price decrease, which is a positive effect of market reform;
- *Employment/labour market*: an interesting study in this field is Nicoletti *et al.* (2001) which pays attention to the impact on labour conditions, job security and equality;
- *Quality*: examples from the studies discussed are failed connections, telephone disruptions and letters not delivered the day after being mailed;
- *Investments and GDP*: self-evident.

Table 1 - Relationship between market reform and economic indicators, based on a survey of empirical analyses

Impact on:	Impact of: Liberalisation	Market organisation (Microeconomic)	Privatisation	Aggregated/Not determined	Aggregated/Not determined (Macroeconomic)
Productivity / Efficiency / Innovation	+++0 +++++	+++	+++++- +++++++	+0 +++	+0 ++
Prices	-----+ -----0	--0 --	--+ --0	---	
Employment / Labour market	++- ++0-	00		+0 -	++++0 +++++0
Quality	++0 ++0	++	0		
Investments	+		0	+	+
GDP					++++ +++++

Sources: OECD (1997), Boylaud & Nicoletti (2001), ECB (2001), Gönenç *et al.* (2001), Steiner (2001), Nicoletti *et al.* (2001), CEC (2002), FE (2002), Scarpetta & Tresselt (2002), Alesina *et al.* (2003), Nicoletti & Scarpetta (2003), Griffith & Harrison (2004) and CE (2004, 2005).

Many of the plus and minus signs in Table 1 come from the studies discussed in Gönenç *et al.* (2001). It is clear that most of the authors observed a positive impact. In only seven cases was a negative impact observed, whereas in 16 cases the relationship was not significant or absent. Note that for employment the negative relationship was mostly observed in the electricity sector, and the positive in the telecommunications sector.

2.2. INTERNATIONAL BENCHMARKING EXERCISE

The studies discussed in the previous section are mostly based on a large number of observations. The estimations are typically made on time series for a relatively large population of countries. Hence, they should give sound outcomes. The studies, however, cannot differentiate by quality of regulation. This kind of differentiation may be useful when considering the policy implications of network industry reform. The international benchmarking exercise described in this section takes account of this differentiation. It does so for a selection of three network industries in five countries. When compared to the empirical studies of the survey the number of observations is lower, but the analysis opens up opportunities for evaluation of the quality of regulation.

The benchmarking exercise relates to a number of European Union Member States that have already gained experience in network industry reform. Eight cases have been studied: the electricity industry in Great Britain, Germany and Spain; the railways in Great Britain, Germany and Sweden; the postal sector in the Netherlands and Sweden.¹ For each of the three sectors a comparison was made with the situation

in Belgium. The reforms are partly based on European legislation and partly on national initiatives. In the discussion below no distinction is made between these two sources.²

2.2.1. REFORM OF ELECTRICITY, RAILWAY AND POSTAL SECTORS

Before the reform of the electricity sectors there was typically strong vertical integration between generation and long-distance transmission networks and between the local distribution networks and delivery. All segments were monopolies, albeit at local level. In most cases, reform consisted of a vertical separation of the networks from the other activities and opening up the markets in generation and delivery. The vertical separation may either be a legal or an ownership separation. In case of a legal separation the separated segments still have the same mother company. In Spain there is a complete ownership separation; in the other countries there is a mixture of legal and ownership separation. Markets have been opened up in all three countries, although in Germany there are still (quasi-)monopolies at the local level. In Great Britain and Spain the industry has been privatised; in Germany large parts were already in private hands before reform. Belgium has legal separation and a mixture of private and public ownership. The market has been opened up fully in the Flanders region and only for non-household customers in the other two regions.³

Before the reform of the railway sectors the network management and train operations were integrated in a publicly owned national railway company. Reform consisted of a vertical separation of network management and a certain degree of opening-up of the market in train operations. Typically, there is open access for freight traffic, whereas for passengers (parts of) the services have become subject to procurement procedures. Reform has gone furthest in Great Britain. There have been complete privatisation and ownership separation, there is free entry for freight traffic, and the passenger network has been divided into 25 regional and long-distance franchises. In Sweden there is ownership separation, with network management under state control. For freight traffic there is free entry. Long-distance passenger traffic is served by the national railway company. Calls for tender for other passenger traffic are taking place under the responsibility of regional authorities. In Germany the situation is basically the same as in Sweden, except that there is legal instead of ownership separation between network and train operations. Both activities are carried out by divisions of a state-owned holding company. In Belgium there is also legal separation under a holding structure. No entry or procurement procedures are allowed yet, however, except in those segments that will have to be opened up after European Union legislation is adopted (e.g. international freight traffic).

For the postal sector, vertical separation is not an issue. For the fulfilment of public service obligations it is more appropriate for the production chain to remain integrated. Reform consists, rather, of allowing free entry in all or part of the services. In Sweden free entry is allowed in all services but the national postal operator has by far the largest market share. In the Netherlands free entry is allowed for all items over 50 grams and specific categories such as express mail, printed matter and advertising. The national postal operator, which also has by far the largest market share, is privatised. About two-thirds of its equity

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1. Information from more cases was included in the analysis as well, for example electricity in the Netherlands and postal services in Finland and Great Britain.
 2. The relevant European Union Directives are 96/92 and 2003/54 (electricity); 91/440, 95/18-19, 2001/12-14 and 2004/49-51 (railways); 97/67 and 2002/39 (postal services).
 3. More detail on the case of Belgium is given in Section 3.3.1 below.

has been sold and floated on the stock market. In Belgium entry is permitted only in the segments that have to be opened up according to European Union legislation (all items over 50 grams or 2½x the basic tariff).

As in the survey of literature, the theoretical relationships between reform and economic performance were confirmed in the benchmarking exercise. In only a few cases was the observed relationship unconvincing or counterintuitive. Note, however, that the performance indicators may very well be related to factors other than market reform. Contrary to the survey of literature, the relationships are based on only a few observations: two to five per indicator (§2.2.2.). Within the countries analysed, common elements of reform across industries were observed. Thus, each of the countries seems to have a typical approach to reform that is applied to various industries. It seems that the effectiveness of reform depends on the quality of the approach (§2.2.3.).

2.2.2. IMPACT ON ECONOMIC PERFORMANCE

The observed relationships are summarised in Figure 2. Seven indicators are considered: entry, efficiency, employment, prices, quality, universal services and output. Efficiency and employment are taken together because of their close relationship. For prices, a distinction between price levels and price changes is made.

Figure 2 - Relationship between market reform and economic indicators, based on international benchmarking

Entry	Relationship: almost self-evident
Efficiency / Employment	Relationship: in almost all cases
Prices: level	More related to costs and quality
Prices: evolution	No relationship observed
Quality	Relationship: in some cases negative
Universal services	Relationship: based on legal obligations

Source: FBP.

The relationship with *entry* is evident. If a market is opened up to competition, competition will show up to at least a certain degree. This happens almost by definition if procurement procedures are used to open up markets, which is often the case for passenger train services. It did, however, not happen in the Finnish postal sector, where there appeared to be high entry barriers. In some cases and after some time, entry was reversed by market concentration, either because of the failure of small and unprofitable entrants or because of mergers and acquisitions.

There is also a clear relationship with *productive efficiency*. Only a few studies give counterintuitive results, for example low and decreasing efficiency in the German railway industry (Cantos *et al.*, 2001), but the positive trend is not distorted by that one observation. Increasing efficiency, however, had a negative impact on *employment* in the industries concerned, which may even amount to some tens of percents. Besides market reform, innovation plays a role in increasing efficiency. This is, however, not an independent factor as it is often related to entry, and thus to market reform. Besides market reform, output clearly contributes to the impact on employment. This is, again, not an independent factor as output is determined by demand and supply, which is also influenced by market reform.

A clear relationship with *price levels* was found. This does not mean that prices decrease after market reform. Rather, market reform gives rise to prices that are more cost-related than before. With *price changes*, however, no relationship was found. Price changes are determined by several supply and demand factors such as input prices, production capacity and price regulation. As regards input prices, changes in oil and gas prices have a significant impact upon electricity price changes. To keep prices stable and relatively low, there must be sufficient production capacity. When production capacity is not sufficient, there is a danger of substantial price increases when demand increases. Hence, prices must be high enough to generate sufficient cash-flow to finance investments in production capacity. Price regulation is an institutional factor behind price changes and often part of market reform. It is used to gain productive efficiency or avoid monopolistic pricing. The private or public property of infrastructure seems to play no role. The impact on the price is determined by the regulation of the network, not by its property.

The relationship with *quality* is less clear. In countries where electricity market reform has already gone a long way, power cuts do not last very long. The duration of power cuts, however, rather seems to be determined by geographic factors. The shortest power cuts are observed in centrally located countries such as France, Belgium and Germany, irrespective of the degree of reform. As regards railways, market reform has induced both positive and negative effects on quality. As regards postal services, the countries with the highest degree of reform, the Netherlands and Sweden, have the highest percentage of letters delivered the day after being mailed.

No relationship with *universal service* was found. The degree of accessibility to electricity for low-income groups also seems to be determined by geographic factors: better in the more prosperous centrally located countries than in the peripheral Member States. In the postal sector, universal service is required under European Union directives. Hence, it is institutionally determined, but still an important condition of market reform.

As regards the relationship with *output* there were only two observations in the benchmarking analysis, but they do confirm the hypothesis derived from the theoretical analysis. The growth of rail passenger traffic has been much stronger in Great Britain than in Germany. In the latter country reform has been less far-reaching than in the former.

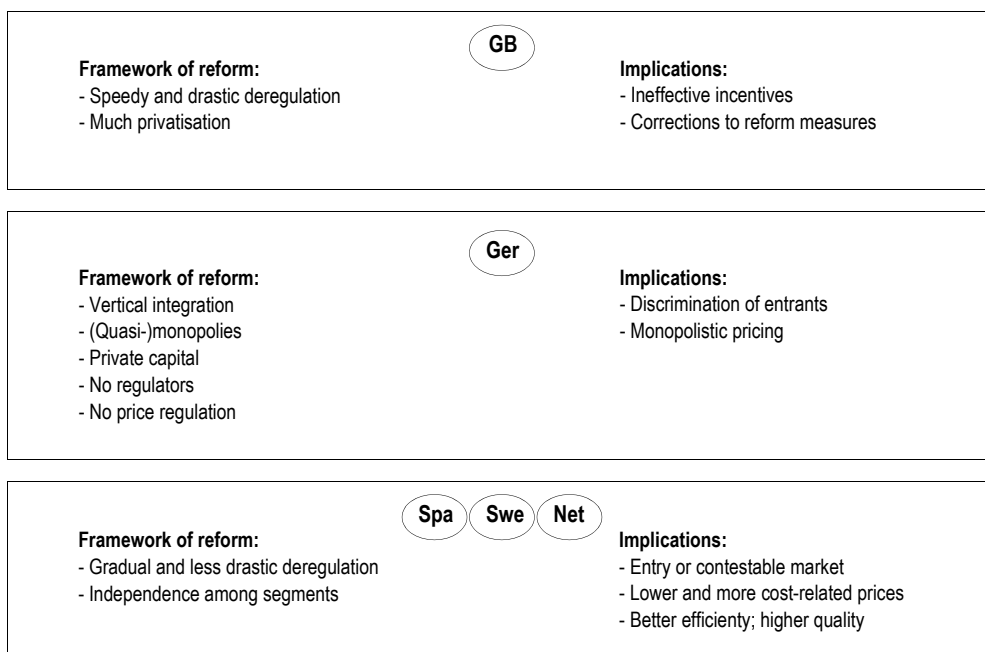
2.2.3. LESSONS PER COUNTRY ANALYSED

As already mentioned, a striking observation was that there are common elements of reform across industries within a country. Therefore, each of the countries seems to have its own approach, applied in a number of industries. It seems that the effectiveness of reform depends on the quality of the approach.

From these various approaches lessons can thus be drawn for the reform of Belgian network industries. The approaches and their implications are summarised in Figure 3.

In *Great-Britain* (electricity, railways), deregulation and privatisation were drastic and were mostly implemented over a very short period. This has led to effective vertical separation. It has also led to less favourable effects because insufficient account might have been taken of specific features of the industry, such as the number of producers and the natural monopoly. These situations have given rise to a need for review of the reform. In the electricity industry there appeared to be too large a risk of collusion in the deregulated wholesale pool. In 2001 this system was replaced by a power exchange that allowed for significantly lower prices. In the railway industry it appeared hard for the privatised network manager to both keep up maintenance and investments and secure a sufficient return on equity. A specific circumstance in this case, however, was the low level of maintenance at the time of privatisation. In 2002 control of network management was renationalised.

Figure 3 - Country-by-country approaches to market reform, and their implications



Source: FPB.

In *Germany* (electricity, railways), reforms have been implemented such as legal separation, admittance to the networks and free choice of supplier. However, there is a combination of factors that involve risks for the functioning of the market: a strong vertical integration; (quasi-)monopolies in many market segments; much private capital; absence of regulators; absence of price regulation. In themselves these factors may not have a negative impact on the functioning of the market. In combination there is a large risk of discrimination against entrants and of monopolistic pricing. Both are, indeed, observed in

Germany, in the electricity industry to a stronger extent than in the railway industry. These phenomena should, however, be combated rather than caused by market reform.

The *other three countries*, the Netherlands (postal services), Sweden (railways, postal services) and Spain (electricity), have in common the fact that the reform was spread over a relatively long period of time. As early as the second half of the 1980s, initial steps were established for legal separation of network management and corporatisation of public monopolies. The reforms in these countries have been less drastic than in Great Britain and more independence between segments is guaranteed than in Germany. The experience has generally been positive: entry or effective contestability; lower or more cost-related prices; increasing efficiency; high quality of services.

2.3. SIMULATION OF REFORM AND ECONOMIC IMPACT

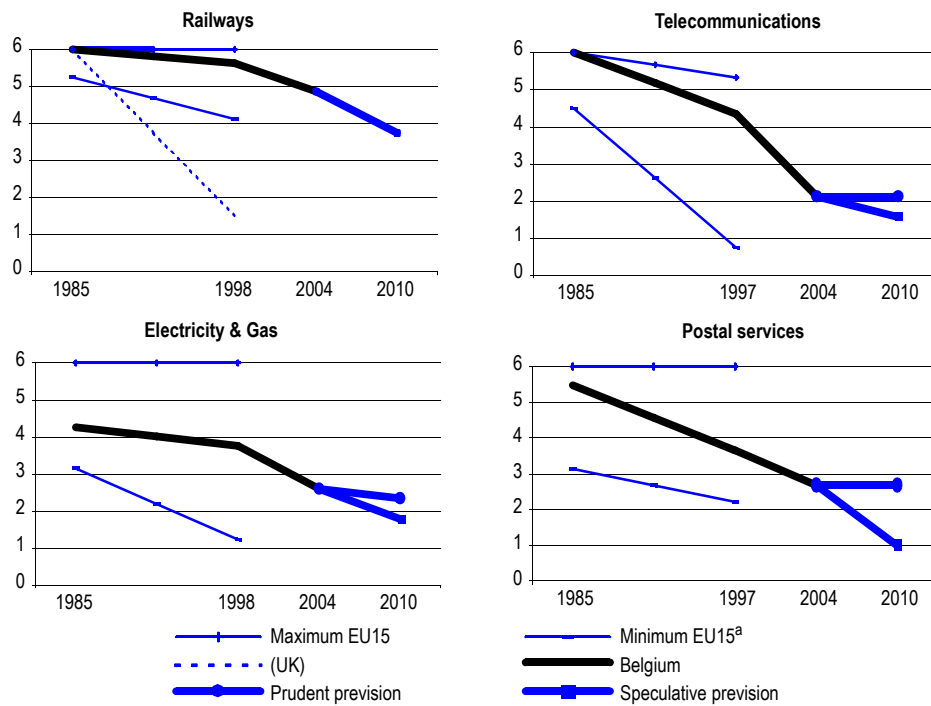
The previous two sections drew conclusions on the impact of market reform on the basis of retrospective literature. This section goes one step further and makes a cautious forecast for Belgium. It builds on work carried out by the OECD (Nicoletti *et al.*, 2001; Alesina *et al.*, 2003; Nicoletti & Scarpetta, 2003) as discussed in §2.1 above. Firstly, it makes a projection of reform and regulation for the coming five years by simulating the development of the OECD sector-level indicator for regulation (§2.3.1). Secondly, it cautiously estimates the impact of the simulated progress of reform on some economic indicators (§2.3.2).

2.3.1. SIMULATION OF REFORM UP TO ABOUT 2010

As mentioned in §2.1 above, a central element in the analysis of regulatory reform is the development of a sensible indicator for regulation. The OECD is one institution that has developed such indicators. Its industry-level indicators integrate information on vertical separation, market liberalisation, public ownership and market structure into one index with a scale of 0, for the absence of regulation, to 6, for complete regulation. It has built up a database covering the period from 1975 to 1998 and comprising seven network industries: railways, electricity, gas, telecommunications, postal services, air transport and road transport. An update for 1999-2003 has recently been made (Conway *et al.*, 2005), but was not yet finished when the Van der Linden (2005c) exercise was carried out.

By applying this quantification method, a 2004 update for the first five of the seven above-mentioned sectors in Belgium and two forecasts for the near future (± 2010) were produced. One forecast is based on fairly cautious assumptions about further reforms while the other is more speculative. The results are summarised in Figure 4.

Figure 4 - Regulation of network industries in Belgium, 1985-1998, and outlook to 2010
(industry-level index of regulation for non-manufacturing industries, scale 0 to 6)



Source: FPB, based on OECD data.

a Railways: except United Kingdom.

The Belgian *railway* sector is expected to remain the most regulated network industry, and to continue to apply the European Union directives on railway reform strictly. In 2004 there was free entry on the Belgian sections of the Trans-European Rail Freight Network (TERFN), but only one entrant was active. In early 2005 a holding structure was created for the incumbent, NMBS/SNCB. In this holding company there is a legal separation of infrastructure management and train services.

In 2006 and 2007, opening-up of the market in freight traffic will be completed. It is assumed that a few more operators will enter the market at that time. The index may then fall to 3.8, which is still as high as the index of the least-regulated Member State in 1998 (after the United Kingdom, see Figure 4). The speculative forecast is the same as the cautious forecast. There is no clear sign of any reforms beyond the opening-up of the freight market.

The *electricity and gas* sectors follow a more or less similar pattern. In both sectors there is legal separation between the infrastructure networks and the other activities. Access prices are regulated as prescribed by European Union directives: proposed by the network manager but to be approved and published by the regulator. In Flanders there is free choice of supplier. The market share of the incumbent

suppliers, Electrabel and Distrigas, is still around 90% for electricity production and gas imports, respectively.

In 2006 a power exchange will be started up for the electricity sector. In 2007, opening-up of the markets in Wallonia and Brussels will be completed for both sectors. It is expected that the market shares of the incumbents will remain high. In the cautious forecast they are assumed to remain at their present levels. In the speculative forecast they may fall significantly, but will remain above 50%. The indices could fall to 2.4 and 1.8, respectively. This is still higher than the United Kingdom and Swedish indices for 1998 and similar to the German index for 1998.

For *telecommunications*, the reference year is 1997, because opening-up of the market was completed in 1998. The regulation index has more than halved since then. The incumbent, Belgacom, however, still holds large market shares (about 60-65%). It is 50% state-owned and under price control by the regulator.

In the cautious forecast it is assumed that there will be no further change. As the reform took place seven years ago, the market may now be stable. In the speculative forecast it is assumed that the market is still developing. The incumbent's market share may fall below 50%, price controls may be relaxed and the government may sell its majority stake. The index may fall to 1.6. In 1997, Denmark and the United Kingdom already had a lower index. In 1998, the first year of opening up of markets, the indices for Spain and Italy also fell below 2.0, whereas many other countries had indices between 2 and 3.

The regulation index for the Belgian *postal sector* has a relatively low score. This is caused by the fact that the OECD includes courier services, which had free entry and genuine competition from the start. For normal postal deliveries, in accordance with European Union legislation, there was free entry for items weighing at least 100 grams in 2004. Since this still covers a small part of the market, there has been virtually no entry.

Recently, free entry has been extended to include items weighing at least 50 grams. In the cautious forecast it is assumed that there will be more entries, but the market share of the incumbent De Post/La Poste will remain above 95%. In the speculative forecast it is assumed that the European Union will decide on complete market opening in 2009. The market share of the incumbent may fall somewhat further but remain above 90%. The incumbent may make use of the opportunity to attract private capital but Van der Linden (2005c) expected that the government share would remain at around 90%.⁴ The index may fall to 1.0. This is significantly below the indices for the two least-regulated countries in 1998, the Netherlands and Sweden.

Despite the inherent logic of a low score for weak regulation and high score for strong regulation, this indicator has a number of shortcomings, which should be borne in mind. By giving a quantitative value to qualitative information and combining it to create a summary index it is inevitable that there will be some degree of arbitrariness. More importantly, there may be differences in interpretation between the respondents who provide the necessary qualitative information. This may give rise to different scores for the same situation. Finally, the indices themselves may give rise to a dangerous interpretation: a score of 0 may be seen as 'best' and a score of 6 as 'worst' for the economy. In many real world cases, however, the functioning of the market may benefit from the presence of at least some regulation.

4. Note that in the mean time the Danish postal incumbent took a 50%-1 share stake in De Post/La Poste.

Nevertheless, the reform of network industries does seem to have a beneficial impact on the economy. This is shown by many studies that analyse the correlation between regulation and economic performance indicators (§2.1 above). Experience of reforms in several countries, however, also shows that government should create the right conditions for the market to function well and for network industries to meet the needs of society (§2.2 above). Below, a cautious attempt has been made to estimate the impact of the progress of reform on some economic performance indicators.

2.3.2. SIMULATION OF THE IMPACT ON INVESTMENTS, PRODUCTIVITY AND EMPLOYMENT

The simulation of economic impact has been carried out by applying the models of Alesina *et al.* (2003), Nicoletti & Scarpetta (2003) and Nicoletti *et al.* (2001), which were also in the survey in §2.1 above. These models build on regressions of investment, productivity and employment on the industry-level indicators of regulation. The simulation was made by multiplying the previous section's changes in the industry-level indicators by the concerned regression coefficients. These coefficients are based on observed relationships in a number of countries and years. In the applied studies the number of countries ranges between 8 and 20 and the time series between 15 and 22 years. The total number of observations per study roughly amounts to 250-350. From the regressions it follows, for example, that there is a high employment rate when there is little regulation and a low employment rate when there is substantial regulation.⁵

When the coefficients concerned are applied to the observed regulatory changes in Belgium (Figure 4), the impact on the performance indicators is surprisingly high, see Table 2. The investment rate would increase considerably. In transport & communications (railways, postal services and telecommunications), it would rise from 7.8% to 8-9%. In public utilities (gas and electricity) it would rise from 3.1% to 4.5-5.5%. Productivity in other industries, a macroeconomic effect, would increase by more than 2%. If this increase took place over a time span of twelve years, productivity growth would accelerate from 1.2% to almost 1.4% per year. The employment rate would increase by 1-2% point. This would imply no less than 65 000 to 130 000 jobs.

5. More detail on the models and simulations is given in Van der Linden (2005c).

Table 2 - Estimated domestic impact of Belgian market reforms between 1998 and 2010 approximately

	Investment rate ^a		Productivity growth ^b	Employment rate ^c
	Transport & communications	Public utilities		
Level before reform	7.8%	3.1%	1.2%	59.7%
Impact of reform (in %-point of the level):				
- present (2004)	0.4 to 0.6%	1.4 to 1.8%	±0.15%	0.8 to 1.2%
- cautious (2010)	+ 0.1%	+ 0.2%	+ 0.03%	+ 0.2%
- speculative (2010)	+ 0.4%	+ 0.4%	+ 0.02%	+ 0.5%
Total impact	0.5 to 1.1%	1.6 to 2.4%	±0.2%	1.0 to 1.9%
Level after reform	8.3 to 8.9%	4.7 to 5.5%	±1.4%	60.7 to 61.6%

Source: FPB.

- Gross investments as a percentage of gross capital stock. The level before reform is the average of 1995-2003 (Source: Belgostat).
- Growth of multifactor productivity. The level before reform is the average of 1990-1997 (Source: OECD).
- Total number of working people, cross-border workers included, as a percentage of population of working age. The level before reform refers to 1998 (Source: FPB).

Before concluding that network industry reform has indeed such a strong impact on the economy, however, further research on these results is necessary. Intuitively, one would expect the impact to be positive, but not that strong. The five industries analysed constitute only a small part of the Belgian economy. In 2003 they produced 5.5% of GDP and employed 139 000 people (4.0% of Belgian employment). In view of this it does not seem probable that reform would have such a strong impact. Moreover, since 1998, no significant changes have been observed in the performance indicators. The employment rate stabilised around 62%; the investment rate has even fallen.

There are, however, also arguments supporting these results. Although the five network industries constitute a small part of the economy, they play a central role. Virtually all production and consumption depends on the network industries' services. Hence, the removal of institutional bottlenecks may indeed have a strong impact upon the economy. As for the applied models, they build on observed relationships. Moreover, the estimated effects (Table 2) are long-term effects. Nevertheless, the greatest caution should be exercised, and further research on these results is necessary.

3. POLICY ANALYSIS FOR BELGIUM

In the previous two sections it has been shown that market reform of network industries may go hand in hand with a favourable economic performance. In the benchmarking analysis, however, it was also shown that the quality of the reform is a condition for achieving this performance. In short, the reform should create a framework for effective competition and safeguard public interests served by the network industries. In this section the present state of regulation of network industries in Belgium is briefly evaluated.⁶ In a number of cases, regulation is useful in Belgium because it gives incentives for a well-

6. More detail is given in Van der Linden (2005c).

functioning market. In other cases, regulation in Belgium involves risks. Such risks prevail when reform may lead to market conduct that does not necessarily result in efficient performance.

3.1. CRITERIA FOR EFFECTIVE REGULATION

One of governments' basic tasks is to create conditions for a well-functioning market. To this end, the present or intended regulation should be tested against a number of criteria:

- *network management* should be independent from other segments of the industry, and access to the network should be possible for all interested parties;
- *dominant market positions* should be monitored;
- there should be equal market conditions for *public and private companies*;
- the *economic incentives* that market players obtain should be such that prices are low enough to be beneficial for customers and competitiveness, but high enough to generate sufficient cash-flow for future investments;
- in addition to *barriers to entry* involved in the previous criteria, barriers to entry of any other kind should be avoided;
- when *subsidies* are granted for the fulfilment of public service obligations, the mode of subsidisation should create incentives for efficiency.

Another of governments' tasks is to safeguard the public interests served by network industries. Insofar as they are not yet involved in creating the right market conditions (see above), the following criteria apply:

- there should be pro-competitive *regulation of natural monopolies* to avoid the creation of monopoly rents and other inefficiencies;
- when the industry produces *public and/or universal services*, this production should be safeguarded;
- there should be specific *focus on people* hit by mass dismissals;
- when applicable, for example in the electricity industry, there should be *technical co-ordination* among the segments of the industry.

The quality of any present or intended measure should be tested against these criteria. The specific shape of the measure may be less important: privatisation or not, putting public services out to tender or not, *etc.* The most important thing is that regulation is such that the criteria are optimally fulfilled and the objective of the reform is being achieved.

3.2. EFFECTIVE REGULATION IN BELGIUM

When the state of reform in Belgium is tested against the above criteria it is found that regulation is useful and effective in a number of cases. In other cases, however, the regulation in Belgium involves risks. These concern the following phenomena, which are mostly observed in more than one network industry:

- there is legal separation of segments;
- there are public companies;
- public and universal service provision is subsidised;
- there are significant market positions;
- there are price controls.

In industries where vertical separation is an issue (electricity, gas and railways) there is legal separation. For electricity and gas, the Suez-group has significant stakes in all segments and municipalities own shares in all segments but generation. For railways, a holding structure has been created in which network management and train operations are separate divisions. A danger of legal separation is that it may give rise to lack of independence between the segments and a certain degree of discrimination against entrants. So, if there is legal separation, it must be coupled with measures that guarantee independence. In the Belgian energy industry this seems to be achieved, for example by applying the principles of corporate governance. In the railway incumbent, however, there seems to be no guarantee of independence.

The railway, postal and telecommunications incumbents are public companies. In postal services and telecommunications it involves a majority stake. The electricity and gas incumbents are private companies. Public (municipal) shares are held in network operations, whereas one supplier has a significant public stake (Luminus). A danger of public ownership in an industry is that there is no level playing field. Public companies may have certain privileges with respect to private companies, which may disturb competition and deter entry. Public companies may, for example, have state support and easier access to capital. Public ownership, however, may also be advantageous. It may be used to achieve social (rather than private) objectives, regulation may be easier and there may be no distributive inefficiency. Hence, when the investment of public capital in a network industry's incumbent is preferred, a level playing field for all parties must be ensured. This is also a requirement of European Union legislation with respect to state aid, where the objective is to avoid any inequalities between market players induced by government support.

Public services carried out by the railway and postal incumbents are subsidised.⁷ Both receive some hundreds of million euros per year from the government. In themselves, such subsidies are justified. When the government wants some services to be produced for social reasons but the market sector cannot produce them at a profit, the government may allocate public resources to these activities. This is a political rather than an economic issue. A danger of subsidisation, however, is that there may be no incentive for productive efficiency. Hence, when subsidisation of certain activities is preferred, the mode of subsidisation should be such that the contractor has incentives to produce efficiently. A suitable mode,

7. The same applies to local public transport.

applied in the railway sector of certain European Union countries, is calls for tenders. The public service is then contracted out to the bidder who produces a given service level for the lowest subsidy.

There are significant market positions in the liberalised segments of all five analysed network industries. In the few liberalised segments of the railway and postal markets, the incumbents, NMBS/SNCB and De Post/La Poste, respectively, hardly face any competition yet. In the liberalised segments of the electricity and gas markets, the incumbents, Electrabel and Distrigas, respectively, still have market shares of about 90%. In fixed and mobile telephony, the incumbents, Belgacom and Proximus, respectively, but also the biggest private mobile operator, Mobistar, have significant market positions. A danger of significant market positions is that it may give rise to monopolistic or price leadership behaviour. Moreover, there may be no level playing field as, for example, large companies have easier access to capital than small companies. Hence, as long as there are significant market positions, they should be monitored. For telecommunications this is, in practice, carried out by the regulator's price controls. Note that monitoring of significant market positions is also a competence of the competition authorities. In Belgium, there have, indeed, been some competition cases brought against the electricity incumbent in recent years.

There are price controls in major segments of the Belgian network industries. Tariffs for domestic passenger train services and universal postal services are more or less determined by the government. For access to the electricity and gas networks there is price regulation as prescribed by European Union legislation. In telecommunications there is price control for companies with a market share greater than 25%. A danger of price control is that, in order to obtain a low price, it becomes too stringent. Prices may then be high enough to cover variable operating costs, but not to generate sufficient cash flow for future investment. This may lead to substantial instability in the long term. It is not clear whether the present price controls in Belgium are too stringent or too relaxed. In postal and railway services, major investments are anyhow financed by public means.

To conclude, the government should be aware of the risks involved in the present state of reform. The major task of reducing these risks should then be undertaken. The effectiveness of the measures taken is more important than the precise mode of reform. Any measure should therefore be tested against a number of criteria for effectiveness.

CONCLUSION

From the analyses in this paper some lessons can be learned about the economic impact of network industry reform in Belgium. In the survey of literature and the benchmarking analysis it was shown that network industry reform may have a favourable impact on economic performance indicators, as predicted by economic theory. The greatest cost, however, is borne primarily by employees in the actual industries concerned. Therefore, clearly, when reforming a network industry, governments must pay due attention to the labour market.

The benchmarking and policy analyses revealed that essential conditions are the mode and speed of reform. A gradual reform process, in some real world cases even as long as 20 years, seems to produce better performance than full deregulation 'all at once'. As regards the mode of reform, governments should create a framework for effective competition, but also safeguard public interests.

Economic impact of network industry reform: drawing lessons for Belgium

In the cautious forecast for Belgium it was estimated that the economic impact of reform may indeed be significant: a clear acceleration of investments and productivity growth, and maybe some tens of thousands of new jobs. To confirm these findings, however, further research and estimations are required.

REFERENCES

- ALESINA, A., S. ARDAGNA, G. NICOLETTI & F. SCHIANTARELLI, *Regulation and Investment*, Economics Department, Working Papers No.352, OECD, Paris, 2003.
- ARMSTRONG, M., S. COWAN & J. VICKERS, *Regulatory Reform: Economic Analysis and British Experience*, MIT Press, Cambridge, 1994.
- BERGMAN, L., C. DOYLE, J. GUAL, L. HULTKRANTZ, D. NEVEN, L.-H. RÖLLER & L. WATERMAN, *Europe's Network Industries: Conflicting Priorities*, Centre for Economic Policy Research, London, and Center for Business and Policy Studies, Stockholm, 1998.
- BOYLAUD, O., & G. NICOLETTI, *Regulation, Market Structure and Performance in Telecommunications*, OECD Economic Studies, Vol.32, pp.99-142, 2001.
- CANTOS, P.S., M. PASTOR & L. SERRANO, *Efficiency and Commercial Policy in Railway Transport in Europe: A Non-parametric Analysis*, Mimeo, 2003.
- COMMISSION OF THE EUROPEAN COMMUNITIES (CEC), *Structural Reforms in Labour and Product Markets and Macroeconomic Performance in the EU*, in European Commission, *European Economy* No.6/2002, pp.81-136, 2002.
- COMMISSION OF THE EUROPEAN COMMUNITIES (CEC), *Horizontal Evaluation of the Performance of Network Industries Providing Services of General Economic Interest: 2004 Report*, Brussels, 2004a.
- CONWAY, P., V. JANOD & G. NICOLETTI, *Product market regulation in OECD countries: 1998 to 2003*, Economics Department, Working Paper No.419. OECD, Paris, 2005.
- COPENHAGEN ECONOMICS (CE), *Market Opening in Network Industries – Stage 1*, Mimeo, study made for the European Commission, Copenhagen, 2004.
- COPENHAGEN ECONOMICS (CE), *Market Opening in Network Industries – Stage 2*, Mimeo, study made for the European Commission, Copenhagen, 2005.
- EUROPEAN CENTRAL BANK (ECB), *Price Effects of Regulatory Reform in Selected Network Industries*, Frankfurt am Main, 2001.
- FRONTIER ECONOMICS (FE), *The Impact of Liberalisation on Efficiency: A Survey*, London, 2002.
- GÖNENÇ, R., M. MAHER & G. NICOLETTI, *The Implementation and Effects of Regulatory Reform: Past Experience and Current Issues*, Economics Department, Working Papers No.251, OECD, Paris, 2000.
- GRIFFITH, R., & R. HARRISON, *The link between product market reform and macroeconomic performance*, *European Economy* No.209, 2004.
- HUVENEERS, C., *Réforme du Marché de l'Electricité en Belgique: Leçons de l'Espagne, de l'Allemagne et de la Grande-Bretagne*, Working Paper Nr.9-05, Bureau fédéral du Plan, Bruxelles, 2005.
- ILZKOVITZ, F., R. MEIKLEJOHN & U. MOGENSEN, *Liberalisation of Network Industries: Economic Implications and Main Policy Issues*, *European Economy* No.4, 1999.
- INSTITUT D'ÉCONOMIE INDUSTRIELLE - UNIVERSITÉ DES SCIENCES SOCIALES DE TOULOUSE (IDEI), *Network Industries and Public Services*, *European Economy* No.4, 1999.
- LAFFONT, J.-J., & J. TIROLE, *Competition in Telecommunications*, MIT Press, Cambridge, 2000.
- MISTIAEN, P., *Hervorming van de Spoorwegsector in België: Lessen uit Groot-Brittannië, Duitsland en Zweden*, Working Paper Nr.10-05, Federaal Planbureau, Brussel, 2005.

- NEWBERY, D., 1999, *Privatization, Restructuring, and Regulation of Network Industries*, MIT Press, Cambridge, 1999.
- NICOLETTI, G., A. BASSANINI, E. ERNST, S. JEAN, P. SANTIAGO & P. SWAIM, *Product and Labour Markets Interactions in OECD Countries*, Economics Department, Working Papers No.312, OECD, Paris, 2001.
- NICOLETTI, G., & S. SCARPETTA, *Regulation, Productivity and Growth: OECD Evidence*, Economics Department, Working Papers No.347, OECD, Paris, 2003.
- ORGANISATION OF ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD), *The OECD Report on Regulatory Reform*, Paris, 1997.
- SCARPETTA, S., & T. TRESSEL, *Productivity and Convergence in a Panel of OECD Countries: Do Regulations and Institutions Matter?* Economics Department, Working Papers No.342. OECD, Paris, 2002.
- STEINER, F., *Regulation, Industry Structure and Performance in the Electricity Supply Industry*, OECD Economic Studies, Vol.32, pp.143-182, 2001.
- VAN DER LINDEN, J., *Hervorming van Netwerkindustrieën: Theoretisch Kader*, Working Paper Nr.8-05, Federaal Planbureau, Brussel, 2005a.
- VAN DER LINDEN, J., *Hervorming van de Posterijen in België: Lessen uit Zweden en Nederland*, Working Paper Nr.11-05, Federaal Planbureau, Brussel, 2005b.
- VAN DER LINDEN, J., *Markthervorming in Netwerkindustrieën in België/Réforme de Marché dans les Industries de Réseau en Belgique*, Planning Paper Nr.98, Federaal Planbureau / Bureau fédéral du Plan, Brussel / Bruxelles, 2005c.

CHAPTER 5

BARRIERS TO ENTRY IN BELGIUM'S ELECTRICITY GENERATION MARKET

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Abstract:

This paper discusses barriers to entry in liberalising electricity markets. The case of Belgium is analysed specifically. The size and nature of entry barriers are an important determinant of whether markets will achieve social objectives. First, a taxonomy of barriers is given, and then a short review of the economics of investment, entry and industrial organisation is undertaken. The paper then presents a model of investment under uncertainty applied to the case of CCGT power station entry into Belgium. The model shows how uncertainty over price alone can raise the optimal entry trigger price above what standard economics would suggest, and that this effect is likely to be significant in Belgium. The paper draws conclusions about which barriers, in addition to price uncertainty, are likely to be significant in the Belgian case.

Keywords:

Barriers to entry, electricity markets, investment.

JEL Classification:

L10, L94, G31

1. The authors are respectively Divisional Director, Managing Partner, and Senior Consultant, with LE. The authors wish to thank colleagues at LE and the editors of this volume. Any opinions, errors, or omissions are purely our own.

INTRODUCTION

The Lisbon strategy aims to make the European Union the most competitive and dynamic knowledge-based economy in the world. An important element of the strategy is to foster greater competition in sectors traditionally viewed as natural monopolies such as electricity. Greater competition in the power sector will in itself benefit consumers. But, perhaps even more importantly, it will support the hi-tech, innovation, and knowledge-based industries, which are viewed as the key drivers of future growth. Therefore, part of the Lisbon strategy focuses on the continuing effort to create a truly competitive internal European Union market for electricity.

While European Union directives specify the minimum amount by which Member States must act in order to achieve the internal market for energy, Member States themselves must often go further to achieve truly competitive markets. In addition, the relevant electricity markets for competition purposes may often, at least for the time being, be most properly defined on a national basis. Therefore, Member States have been actively studying and implementing policies to further improve competition in their own national markets for electricity and other network industries.

The foundations of competition economics include the Structure-Conduct-Performance (S-C-P) paradigm, which states that market structure will imply possible market conduct by players, and conduct will determine market performance. If a market is concentrated, competition is likely to be poor and prices higher than they otherwise might be.

However, such an outcome does not necessarily materialise in a concentrated market. It all depends on whether barriers to entry exist that block or slow potential competitors from entering the market, and bringing about more competition in such concentrated markets. What matters in this context is the height and durability of barriers to entry.

The efficiency of the perfectly competitive model generally depends on the assumption that it is possible for new firms to enter and exit the market freely. With free entry and exit, new firms will enter the market and start producing whenever the market price is high enough to allow incumbent firms to make profits that exceed the risk-adjusted return on similar investments. Indeed, even if the market is concentrated, if barriers to entry are low, then one would expect excess profits, or high price-cost margins, to attract entrants. In this case, entry would eventually lower the profit margins². Therefore, if barriers to entry are low, the need for structural remedies may be limited, even if the market is concentrated and performing poorly at present.

For these reasons, the energy regulator in Belgium, the *Commission de Régulation de l'Électricité et du Gaz*, (CREG), commissioned London Economics (LE) to study the state of competition and the extent and importance of barriers to entry in Belgium's electricity generation³ sector.

A number of definitions of barriers to entry⁴ have been offered and we rely on the definition proposed by Bain (1956). Bain defined as a barrier to entry anything that allows incumbent firms to earn supernormal

2. Alternatively, the incumbents could keep prices low.

3. The study included all three potentially competitive sectors, generation, supply and trading, but we focus on generation here.

profits without the threat of entry. As noted earlier, other definitions exist as well⁵.

Determining and quantifying entry barriers and their impact on market performance requires a market performance benchmark since no absolute standard exists in terms of market performance. Economists typically look towards the ideal of the perfectly competitive market for this benchmark.

1. SOURCES OF BARRIERS

There are many potential sources of barriers to entry in any market. We briefly review them conceptually here and then narrow our focus to the barriers that are important for electricity generation in Belgium. There has been much theoretical and empirical economic research on the subject and we provide a brief review of the literature in the next section. For now, however, our discussion will remain conceptual.

Barriers to entry in most markets can perhaps be categorised into four main types: structural/technological barriers, resource barriers, behavioural barriers and legal/public administrative barriers.

The first type of barrier depends on the structure of the market (size of demand and number of firms) and the technology employed. Very often, the technology needed will have some Minimum Efficient Scale (MES). In the case of electricity generation, this is often accepted as 400MW. This is the size of the most thermally efficient combined cycle gas turbines available today. If demand is not large relative to MES, then there is a chance that an entry barrier exists, as entrants will not be assured of attracting sufficient demand to attain MES. The nature of the technology employed can also give rise to other barriers. For example, some plants are very inflexible; they cannot ramp their output up or down quickly. Alternatively, the technology may be inimitable or difficult to replicate. Finally, structural barriers can depend on the nature of costs. If costs are 'sunk', *i.e.*, they cannot be recovered upon exit, then this can create a barrier, as firms cannot engage in 'hit-and-run'⁶ entry profitably.

Resource-generated barriers exist when resources are needed for production but not available to all potential entrants on a competitive basis. In the power sector, these barriers could include natural gas supplies, connections to the grid, or skilled labour supply, among others. Other aspects of market structure, such as vertical integration, can exacerbate resource barriers. This is because a potential competitor may have to purchase inputs upstream from a downstream rival.

Behavioural barriers are barriers that are created by market participants and incumbents. Incumbents can engage in behaviour that makes it more difficult for a potential entrant to gain entry. Examples of such behaviour could be brand-image advertising, or limit pricing⁷.

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4. It is important to note that we use the term 'barrier' throughout this article in the most general sense. Therefore, there is no semantic distinction between, for example, a barrier or an impediment to entry. We use Bain's (1956) categories of entry barriers and define these further on in this section.
 5. It is noteworthy that there are other definitions. Stigler (1968) offered an alternative definition based on cost asymmetries. Von Weizsäcker's (1980) definition carried this further; he said that a barrier was any cost of producing that must be borne by entrants that is not borne by incumbents. Von Weizsäcker went on to state that this implied a distortion in the efficient allocation of resources.
 6. In the absence of sunk costs, firms can borrow money, enter the market and compete/earn profits until the market is saturated and economic profits are reduced to zero. They can then exit the market without cost. This is the so-called 'hit-and-run' entry.
 7. Limit pricing is a special case where the incumbent, due to economies of scale, can price just below the price that will entice entry but is still above the competitive price, and thus still earn a supra-normal profit without attracting entry.

Legal and administrative barriers are a final important type of barrier to entry. These can take many forms, including planning permission, licensing, informational access to data or customers. Or they can include legislation, such as a legal restriction on entry.⁸ There are of course possible interactions between barriers. For example, legislation might create an excise tax on energy, which, depending on the technology, may raise barriers to entry.

2. BRIEF LITERATURE REVIEW

In order to understand barriers to entry and their potential impact, it is useful to discuss the determinants of investment by enterprises. This is because all entry is essentially an investment⁹ - a business or entrepreneur takes his or her financial capital and converts it into physical capital by purchasing new or existing plant and equipment. Entry could also come from financial transfer of ownership of existing plant. So the determinants of investment will impact on entry (investment) and exit (disinvestment).

Many models of investment are offered by the academic economics literature. The next section focuses on a few key microeconomic models of investment that are important for understanding the investment incentives of potential entrants.

Discounted cash-flow/trigger price theory

The most basic microeconomic investment model is the accounting/Discounted Cash-Flow (DCF)¹⁰/trigger price theory. This investment theory says that, if the 'levelised cost'¹¹ or expected average total cost of the plant is less than the expected price, then entry should occur. Although practitioners will attest to the fact that businesses really do undertake such analyses when considering investment, empirical evidence suggests this is not always the case, *i.e.*, entry/investment does not always occur when it should.

There are a number of reasons why this might be true; some reasons would salvage the DCF theory by relaxing assumptions; others would suggest a new theory is needed. An example of the former case is that firms might be risk-averse. Thus, firms really do make DCF-like investment decisions, but need a premium to undertake more risky investments.

Investment under uncertainty

Alternatively, a theory such as the 'investment under uncertainty' theory of investment might provide a better description of reality. This theory, developed by Dixit and Pindyck (1994), posits that investment decisions are like options, and, thus, there is an opportunity cost to 'not waiting' to invest; in other words, there is value in waiting for more information to arise about future prices. According to this theory, the

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8. Most postal operators in the European Union that provide universal service still have at least some protection against new market entrants.
 9. It is important to distinguish between economic investment and financial investment. Investment of the economic type means purchasing of new or existing land, plant, machinery, and equipment; building up of economic stocks; replacing or refurbishing old equipment in excess of the rate of depreciation, *etc.* Thus economically meaningful entry should involve investment. There is the possibility of entry from financial investment, when nothing new is installed or purchased, but ownership of existing plant is merely divided up among a larger number of firms, some of which are not currently in the market.
 10. Also called the NPV (net present value) approach.
 11. This is the cost of spreading the fixed cost over the entire expected output on a 'level' basis, and then adding this to average variable cost to get the average total cost or levelised cost.

Expected Discounted Cash-Flow (EDCF) or expected future discounted cash-flows are not the only relevant parameters that enter into an investment decision; other parameters such as the volatility of prices will have a real impact too.

The implications of this alternative theory are striking. The investment under uncertainty theory suggests that it is optimal for firms to 'wait' when considering an investment in the presence of sunk costs and uncertainty. This is because 'new information' is likely to arrive, and so some of the uncertainty should 'resolve itself' as the firm waits. Thus, one should expect greater 'investment hysteresis' (or a 'lagging tendency') the greater the uncertainty in the market place. Therefore, under the theory of investment under uncertainty, which focuses on the importance of sunk costs and risk, one can see that what one views as the proper speed of investment and new entry will depend potentially on what theory is adopted as the best description of the state of the world.

In addition, the different parameter estimates of the model will also determine the degree of 'expected' investment. In the DCF model, investment (entry) occurs as soon as the internal rate of return from expected cash flow exceeds a certain level. In the investment under uncertainty view, investment is delayed¹² (optimally) the more the uncertainty or volatility in prices.

Contestable markets

Although 'free entry' is an important assumption, and is necessary for a market to be perfectly competitive, it is often debatable how important barriers to entry are in an industry, as well as whether an industry with some barriers and few firms might still be capable of delivering *nearly competitive* outcomes. Developments in economics have suggested that industry outcomes could still be close to the competitive outcome even if an industry had high fixed costs, as long as the industry was 'contestable'. In fact, it is occasionally argued that, although the electricity industry might have high fixed costs, the industry is likely to be contestable—and therefore competitive outcomes are likely even with high market shares. We will return to contestability, but first discuss the general theory of industrial organisation and the S-C-P paradigm.

The S-C-P paradigm and barriers to entry

In the 1950s, economists, aware that the perfectly competitive model was not adequate, began to develop richer theory and evidence of industrial behaviour. This led to the S-C-P Industrial Organisation (IO) paradigm. The theory says market *structure* is what determines the *conduct* available to competitors, which in turn will predict how well the market *performs* (low prices, secure supply, *etc.*). Among the elements of market structure, the 'height' of entry barriers is, of course, seen to be a key factor.

Within the structure-conduct-performance (S-C-P) paradigm in industrial organisation, which provides the economic basis of competition and regulatory work, market structure plays a key role in determining the way firms behave, which in turn affects the economic performance of markets. Recent refinements of the S-C-P paradigm (sometimes referred to as the 'New IO') stress the role of potential as well as actual competition, pointing to the concept of contestable markets (see below).

12. Interestingly, the optimal delay to an investment decision may be shortened if there are 'competitors' who might grab the opportunity to invest ahead of the investment-decision maker.

Barriers to entry appear in the S-C-P as an element of market structure and are defined as any factor preventing the arrival of new competition to the market, even in the long term. They serve to protect existing firms from new competition and are a key source of market power or dominance. In effect, the existence of barriers to entry implies that new competition will not emerge in response to market opportunities and that incumbents will earn rents or abnormal profits unchallenged into the future. In the presence of entry barriers, prices will be higher and/or output lower than in a market with competition. Product quality and innovation may be lower as well because the protection afforded by entry barriers may reduce the incentive for incumbents to innovate and respond to the needs of buyers. Thus, consumers will be worse off when there are barriers to entry.

3. BARRIERS IN BELGIUM'S GENERATION MARKET

The literature on competition in the electricity sector highlights a number of potential sources of barriers to entry in electricity markets that in one way or another are likely to be relevant in the context of the Belgian market. These are:

- lack of suitable wholesale forward markets for generators and retailers;
- a degree of vertical integration of main generator(s) into other functions along the supply chain;
- the impact of particular reserve generation schemes;
- the impact of balancing arrangements;
- regulatory uncertainty;
- uncertainty regarding carbon taxes and other charges on both producers and retailers;
- underlying uncertainty of the future demand supply/balance for retailers;
- resource consent processes for generators;
- contracting practices of the incumbent generator that may result in barriers to investment in distributed generation;
- lack of level playing field in terms of information available to market players;
- market rules and grid code – are they satisfactory or do they need modification?

Each of these points (and others) are addressed in turn below.

The Belgian electricity sector currently exhibits a number of features that make entry into electricity generation more risky for new entrants than would be the case otherwise, and thus are likely to discourage entry. These are the vertical integration and dominance of Electrabel, the lack of a level playing field in terms of access to information about the electricity sector, the phenomenon of NIMBYism (*i.e.*, the 'Not In My Backyard' attitude) and the relatively complex regulatory structure. All these factors create uncertainty for new entrants and are likely to discourage entry by making it more risky.

Electrabel's vertical integration and dominant position throughout the Belgian electricity supply chain creates a risk for a potential new entrant into any one of the three markets, in that Electrabel may abuse its dominant position and engage in a market squeeze. This risk exists, whether or not Electrabel has actually abused its dominant position in the past. While we are unable to quantify the size of this barrier,

it is interesting to note that this point was made repeatedly by stakeholders during consultations which LE held during the course of the project.

A recurrent theme throughout the consultations was the opacity of the Belgian electricity market and lack of access by new entrants to basic information about production, prices, end-user profiles *etc.* By virtue of its dominance in generation, vertical integration and presence in all electricity markets, and its close relationship with transport system operator Elia and many distribution companies, Electrabel has access to vastly superior information about all aspects of the Belgian electricity sector. This asymmetric access to information clearly puts new entrants at a disadvantage and, as in the previous case, increases the risk of entry.

The difficulty in obtaining planning permission is also evidently a barrier to entry in generation in Belgium. We drew this conclusion on the basis of the interviews with various stakeholders. The phenomenon of NIMBYism was viewed as particularly problematic with regard to the siting of wind turbines, wind farms, other forms of generation, as well as high and medium-voltage transmission lines.

Of particular interest to those studying the liberalisation of network industries in the European Union is the difference in speed of market opening. Different speeds of liberalisation across regions may have an impact on entry in the short run, especially if entry is most likely by smaller regional companies; larger companies will have sufficient resources that any benefits from a staggered start will be negligible. These will be also outweighed by economies of scope and scale from marketing to the country as a whole. As of 2007, full liberalisation will have been achieved throughout Belgium, thus the different speed of liberalisation is at best only a temporary barrier to entry.

Obviously, compliance with three different regulatory regimes for small markets increases fixed costs associated with regulation and so has the potential to increase entry barriers. However, most of the companies on the list of supply companies, and Access Responsible Parties (ARP's)¹³ are in fact very large and well-resourced international or pan-European Union energy companies, and so would be well-equipped to deal with differences across regions, as they are equipped to deal with differences across Member States.

The inability to manage price and quantity risk is also a significant barrier to entry in the Belgian generation market. In a commodity market like electricity, where risks can be very high, the ability to manage risk is fundamental to the functioning of the market.

Our study identified specific aspects of the balancing mechanism and the lack of a liquid spot market as likely to create barriers to entry as they are key means by which a potential entrant would manage risk. Efforts are underway to address these issues by the creation of a spot exchange and regulated prices for balancing, since Electrabel also controls virtually all the plants capable of providing balancing power, emergency power, and other ancillary services. However, even once these new regimes are in place, price risk and risk management may still constitute a barrier to entry.

A potential entrant in the generation market may not be willing or able to sell all its power via long-term contracts, and so must sell at the spot price from time to time. Alternatively, the new entrant generator

13. These are entities that have signed the grid access code, and so have 3rd party access along with responsibilities and rights.

may need to purchase spot energy if their plant is on forced outage. Since electricity spot prices can spike very high, any entrant hoping to attract financing would need to have effectively managed these risks. But managing these risks usually means effectively finding counterparties to trades of derivative products. Entrants may not have the sophistication for this, or the markets for such products may be very thin.

4. MODEL OF ENTRY IN THE BELGIAN ELECTRICITY GENERATION MARKET

When there are fixed costs, a potential structural barrier to entry exists if price-cost margins are not predicted to cover fixed costs over the life of the asset. However, when fixed costs are 'sunk', the willingness of investors to enter a market may require an even higher price than the price-cost margin that will just merely cover fixed costs plus a normal rate of return.

To determine the wholesale energy price that would trigger entry, we used two models; one that was based on the straight Discounted CashFlow' method of determining the entry price, and one based on the model of investment under uncertainty developed by Dixit and Pindyck (1994). The model essentially investigates the economics of a 400MW nameplate capacity Combined Cycle Gas Turbine (CCGT) with 55% thermal efficiency and 90% load factor achieved¹⁴. We also carried out a sensitivity analysis on some of the key parameters. The low case corresponds to an initial investment in a CCGT of €200 million, while the high case corresponds to €250 million¹⁵. Under uncertainty, the low case also assumes lower volatility of electricity prices, corresponding to a value of 0.1, whereas the high case assumes a volatility factor of 0.2¹⁶. The two models were used in unison, and the results were combined to give a minimum price, below which entry almost certainly would not occur, and a maximum price, above which entry would almost certainly (without other barriers) occur. More complete details of the methodology are provided in the London Economics report for the CREG. The results of this analysis are presented in the Table below.

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14. This corresponds well with the station database obtained from the CREG for recent CCGT in Belgium. It also corresponds with international studies of new entrant prices in Australia (see IPART) 2004, the United Kingdom (private IPP study by LE), and Ireland (see CER Best New Entrant Price 2002: the Commission's Decision).
 15. An investment cost of €250 million for a 400MW capacity power plant, or about €625/kW, corresponds closely to the higher values of recent asset sales globally. For example, USAEE (United States Association for Energy Economics) materials suggest that at the height of the activity in merger and acquisitions of power companies in 2001-02, assets were selling for around \$600/kW capacity.
 16. Volatility was calculated from the daily peak average prices from the APX for 2003. The figures cited in the article are the standard deviation of the natural log of the prices. We did not assume a 'spark spread type model', where the gas price was allowed to be volatile and the spread between the electricity and gas prices is the relevant price, because this would have probably reduced the effective volatility, since gas and electricity prices should be positively correlated. Reducing volatility would reduce the spread between the uncertain and the certainty case. Since our goal was to calculate an 'upper boundary', above which we would expect entry in the absence of other barriers, the spark-spread model was not used.

Table 1 - Comparison of entry prices and wholesale prices (€/MWh)

Name	Low case	High case
DCF trigger price	€ 35.18	€ 37.09
Trigger price with waiting due to uncertainty	€ 43.11	€ 52.76
Difference between two models	€ 7.93	€ 15.67
APX av. 2002-2003	€ 41.21	€ 41.21
BPI av. (Electrabel) 01/03 to 31/05 2004	€ 29.49	€ 29.49

Source: LE, APX, and Electrabel (website).

Our findings suggest that the 2004 wholesale prices, when considering uncertainty, were likely to be either just below or significantly below the price that would trigger entry. The average price needed to attract entry is at €43.11 per MWh in the low case and €52.76/MWh in the high case, while the Amsterdam Power Exchange (APX) price is €41.21/MWh in the cases that include uncertainty. We consider the most appropriate comparator to be the APX price because evidence suggests that the Belgian Power Index (BPI) tracks the APX price very closely, but the BPI price index is not available for a whole, or even half a year for 2004.

Uncertainty plays an important part in the entry decision process. This is evidenced, in part, by the theoretical background on the theory of investment under uncertainty. There is a value to waiting that increases with uncertainty. The model can be formulated so that the value of waiting acts as an 'add-on' to the standard DCF price/MWh. The evidence that uncertainty is important is empirically demonstrated by the estimates reported above. The difference between the pure DCF model and the uncertainty model is between €7.93 and €15.67/MWh. It should be recalled that this is mostly due to changing the volatility estimates from 0.1 to 0.2. It is also true that participants whom we consulted all emphasised the importance of uncertainty.

The estimates do not fully support the theory that entry was totally blocked purely on economic grounds. The pure DCF modelled price in the low case, at €35.18/MWh, was below the APX average price of €41.21/MWh. This suggests that, if the investment under the uncertainty model were not correct, then one might expect entry under current market conditions *in the absence of other entry barriers*. It is true that the pure DCF model *does* account for *some uncertainty*, in that the parameters of the discounting scheme may vary with risk. The main parameter here is the beta of the capital asset pricing model (CAPM). However, the beta only accounts for diversifiable risk¹⁷, and the opportunity cost of investing is only diminished under intense competition. We therefore believe that, while it is interesting to note that the DCF model predicts entry, the uncertainty models are the more appropriate models for studying entry into generation.

Thus, in conclusion, the analysis suggests that the 2004 wholesale price levels were either just below or somewhat below the level that would have been required to attract entry. Thus, under the current situation, our expectation is that new greenfield CCGT entry would not occur even if other entry barriers were removed. This conclusion is not unequivocal, as the DCF-based new entry trigger price is below

17. This is theoretically the only risk that will earn a premium in efficient capital markets. However, under the uncertainty model, it is assumed that the opportunity to invest is 'owned' by a particular market player, and so the two views are not inconsistent.

current prices, but we believe the prices adjusted upwards for uncertainty are the more appropriate benchmarks.

CONCLUSION

The Lisbon strategy sets out laudable goals and means by which the European Union will create a vibrant, high-value-added economy capable of living up to its citizens' expectations for the future. The micro process of achieving competitive internal markets in network industries such as electricity will require additional effort, often by national regulators and agencies. A first step in this process is the identification and quantification of barriers to entry. This paper has looked at these issues in Belgium's electricity generation market as a case study.

Barriers to entry exist in electricity markets in general, reflecting a number of factors. Some of the barriers are a function of market structure and technology. These barriers are not easily remedied in the near term. Some barriers are related to scarce resources and access to them. Another set of barriers result from either the behaviour of market participants or from the legal, regulatory and administrative environment.

In Belgium's electricity generation market, some particular barriers exist and therefore entry is likely to be slower than what would be required to make the market truly competitive in the near term. Structural barriers exist if fixed costs cannot be recovered with an economic rate of return. If a firm cannot enter and attain minimum efficient scale, this can also create a structural barrier. Our model of investment under uncertainty showed that sunk costs and price volatility are likely to be important determinants of the speed and likelihood of investment by new entrants to Belgian electricity generation.

Another very important barrier is the ability to manage risk. Belgium is reforming its balancing mechanism and is developing a spot market to deal with these problems, but market liquidity will ultimately be required.

The market share of the incumbent is also seen as an important barrier in and of itself. While this is an element of 'market structure', it is the threat of certain behaviour that is important. Electrabel's market share means that the company can control price, and this could be to the detriment of a new entrant. Entrants cannot manage this risk. The market share of Electrabel in supply is also a barrier, as it means that wholesalers may very well need to compete with Electrabel generation to sell energy to Electrabel's subsidiary, Electrabel Customer Solutions (ECS). Vertical integration of the incumbent can thus exacerbate horizontal market power.

The difficulty in siting new plant, upgrading grid connections, *etc.* due to the so-called NIMBY factor is also a significant barrier. The importance of this should not be underestimated. The failure to site new generation plant was, for example, a major contributor to California's energy crisis.

Finally, regulatory and policy uncertainty is also likely to create a barrier. This can come from many sources, including the possibility of legislative change, the mixed (federal-regional) regulatory regime, *etc.*

While we have studied entry barriers in Belgium's electricity generation market, the size of similar barriers in other Member States is an empirical question. Achieving the goals of the Lisbon strategy in the power sector will not be easy, and recognising and quantifying barriers to entry at the national level, in the medium term, is likely to be a necessary but not a sufficient condition for the success of the strategy.

REFERENCES

- BAIN, J.S., *Barriers to new competition*, Cambridge, Harvard University Press, 1956.
- COMMISSION FOR ELECTRICITY REGULATION, *Best New Entrant Price 2002 The Commission's Decision*, Dublin, December 2001.
- DIXIT, A., & R. PINDYCK, *Investment Under Uncertainty*, Princeton University Press, Princeton NJ, 1994.
- INDEPENDENT PRICING AND REGULATORY TRIBUNAL, *The long run marginal cost of electricity generation in New South Wales*, IPART, Australia, 2004.
- STIGLER, G., *The Organisation of Industry*, Homewood, IL: Irwin, 1968.
- TIOLE, J., *The Theory of Industrial Organisation*, Cambridge, MA:MIT Press, 1987.
- VON WEIZSÄCKER, C., *A Welfare Analysis of Barriers to Entry*, Bell Journal of Economics, Vol. 11, No. 2, Autumn, 399-420, 1980.

COMMENT: BARRIERS TO ENTRY IN THE ELECTRICITY SECTOR

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The directives concerning common rules for the internal market in electricity aimed at opening up the electricity market, gradually introducing competition with a view to making the energy sector more efficient.

Following the implementation of the 1996 and 1998 directives, the gas and electricity markets in the Member States opened up considerably and, by the end of 2000, the directives' targets had already been exceeded.

However, the degree of market opening varied considerably from Member State to Member State, ranging from 30% to 100%.

Most Member States have opted to regulate the system of third party access to the grid, draw up authorisation procedures for the construction of new power generating plants, fully unbundle the activities of transmission and grids managing and even create independent regulatory authorities.

The Lisbon European Council of March 2000 asked the Commission to draw up proposals to speed up liberalisation in order to achieve a fully operational internal market as soon as possible.

In response, the Commission submitted a proposal amending Directive 96/92 that included:

Quantitative proposals: proposing a timetable for all electricity customers, regardless of their size, to be able to choose their suppliers freely. Non-domestic clients would thus be able to choose freely as of 1 January 2003.

Qualitative proposals: focussed on two areas:

The procedure for third party access to grids, which is based on a system of published and regulated tariffs, which would apply in a non-discriminatory manner to all users of transmission and distribution grids and replace alternative procedures, such as negotiated access or the concept of the single buyer.

The measures relating to the unbundling of activities, which are intended to establish a framework within which each grid operator can operate independently of the commercial interests of the group to which it belongs.

Furthermore, the new Directive 2003/54 of 26 June¹, proposes appointing independent national regulatory authorities who will be responsible for fixing tariffs and conditions for access to the grid, and

1. Directive 2003/54 of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92.

for drawing up mechanisms to prevent distortions of competition. It also proposes setting up a body to monitor security of supply of electricity and natural gas.

The creation in all the Member States of national regulatory authorities that are responsible for fixing or approving tariffs for third party access to the grid ensures a transparent and non-discriminatory process.

The usefulness of such bodies is demonstrated by the fact that practically all 15 of the countries of the European Union had created national regulatory authorities. These authorities allowed them to act *ex ante* and, in some cases, on their own initiative, unlike other bodies which only act once the infringement has been committed.

It was feared that a badly planned liberalisation process would lead to a considerable fall in the quality of services offered to users and there was concern about whether sufficient investment would take place in the open market, in particular in peak capacity.

However, the proposal for a directive to safeguard security of electricity supply and infrastructure investment² has helped to assuage doubts, since it is aimed at promoting investment in the European energy sector to both strengthen competition and help prevent the recurrence of blackouts. It emphasises the need for a clear European Union legislative framework for the proper functioning of a market, by safeguarding security of electricity supply and ensuring a sufficiently high standard of interconnection between Member States, through general, transparent and non-discriminatory policies. It therefore requires Member States to:

- have a clearly defined policy towards the supply-demand balance which allows for targets for reserve capacity to be set or alternatives such as demand-side measures;
- establish standards relating to the security of the transmission and distribution networks.

Finally, transmission system operators are required to submit a multiannual investment strategy to their national regulator. The regulator can add important cross-border projects to the list.

Furthermore, the construction of the single market must not block the progress being made on achieving the objectives of economic and social cohesion in the less-favoured regions of the European Union.

Each Member State has different procedures for access to the grid. This may give rise to imbalances with regard to the reciprocal access of companies from different countries to national grids.

The system of regulated access based on published tariffs is the system that guarantees free access for many Member States and also prevents distortions of competition and/or potential abuses of a dominant position.

The main obstacles in arriving at a fully operational and competitive internal market relate to, amongst other things, the access to the network; for an effective competition, network access must be non-discriminatory, transparent and fairly priced.

Complicating market access favours those economic operators already active in the market.

2. COM(2003) 740 final.

The directives on the internal market aim to liberalise markets, by removing the legal monopoly held by suppliers and gradually opening the national markets to other providers. Furthermore, companies' different areas of activity, such as generating electricity and operating electricity networks, are interlinked and third party non-discriminatory access should be guaranteed.

In the light of experience gained from the past several years of opening up the market in electricity, it is possible to observe, amongst others, the following barriers to entry:

1. Legal disparities, which need to be harmonised in Member States' future legislation, as regards:
 - matters that can be included under the concept of public service in the sector. These discrepancies may lead to distortions of competition and must therefore be removed. The Commission should therefore consider, in line with the subsidiarity principle, drawing up specific legislation to harmonise the rights of users, in particular companies, and the obligations of energy distribution companies, with a view to ensuring the proper functioning of the internal market;
 - the environment would seem to be one of the areas most affected by this liberalisation process, even though the European Union and the Member States have adopted measures to limit the environmental impact of energy production and consumption, most importantly measures to counteract climate change by promoting the use of renewables and energy efficiency.

It should be noted that Article 3 of the Directive 2003/54 which addresses public service obligations and customer protection, specifies some minimum standards, that, when applied to the Member States' different legal systems, could bring about disparities which could only be ironed out through legislative harmonisation. Naturally this should mean legislation 'with a high level of protection' as these are matters relating to protective policies, such as consumer or environmental protection.

In any case, we should assess whether these measures should be included in the Commission's proposals to be submitted to the European Parliament and the Council by 1 July 2007.

2. Case-law

The charging of certain fees set by the regulatory authorities for access and use of the national transmission system has raised problems in certain Member States; the question is whether the imposition of different access charges for different undertakings could mean an extra burden on the network, which could be fully covered by the system of operating subsidies for undertakings in the sector, thus amounting to State aid within the meaning of Article 87 of the Treaty of the European Communities (TEC).

This measure is different to the so-called stranded costs, which consist of compensating producers and distributors for that part of their non-recoverable costs incurred in generating electrical energy due to the transposition of Directive 96/92 into national law.

In its judgement of 14 April 2005³, the Court of Justice of the European Communities (CJEC) stated that:

“A measure which imposes an increased charge for a transitional period for access to the national electricity transmission system only on undertakings generating and distributing electricity from hydroelectric or geothermal installations during the transitional period, by the liberalisation of the market in electricity, constitutes a different treatment of undertakings in relation to charges which is attributable to the nature and general scheme of the system of charges in question. That difference is not therefore per se State aid within the meaning of Article 87 TEC”.

In her Opinion on this case (no.46), the Advocate-General⁴, stated that:

“This question quite unmistakably resembles the problems faced in the cases of Ferring, Altmark Trans and Enirisorse. Those cases were concerned with the question of whether and to what extent Member States can offset additional costs incurred as a result of being entrusted with services of general economic interest without then being subject to the provisions in the Treaty governing aid. In none of the three judgments did the Court of Justice completely rule out the recompense element. This would logically mean here that it would, in principle, be possible to allow recompense for certain undue cost advantages without that recompense option being considered a selective advantage within the meaning of the term aid”.

That is to say, the yield from the increased charge for use of the network is not used to cross-subsidise certain undertakings or categories of undertakings operating in the market, but seeks to offset the general revenue charges of the electricity system for the benefit of users and to avoid the increased revenue collected to cover the costs not borne by producers and distributors leading to higher tariffs for consumers.

This is therefore a general measure of economic policy, which does not aim to benefit certain undertakings or categories of undertakings, but on the contrary pursues a general interest, namely the need to avoid profit-making harming users and distorting the market's balance and operation.

3. Obstacles to the basic freedoms of the internal market

Here, some practices can be cited that might clash with the laws of the internal market in the following ways:

- The aforementioned judgement by the Court of Justice of 14 April 2005 also addresses the possible infringement of one of the fundamental principles of the directive, the guarantee of non-discriminatory access to the transmission system for everyone, due to the fact that the increased charge for access to and use of the national electricity transmission system demanded only from undertakings generating and distributing electricity from hydroelectric or geothermal installations is intended to offset the advantage created for those undertakings by the liberalisation of the market, which during the transitional period, enabled them to charge a price on the captive market set on the basis of criteria which take account of a fuel cost which they do not bear.

The Court of Justice stated that:

3. Joined cases C-128/03 and C-129/03 AEM SpA, AEM Torino SpA v Autorita per l'energia elettrica e per il gas and Others, third party: ENEL Produzione SpA.
4. Opinion of the Advocate-General, Ms Christine Stix-Hackl.

“The rule of non-discriminatory access to the national electricity transmission system does not preclude a Member State from adopting a measure which imposes an increased charge for a transitional period for access to and use of that system only on certain electricity generation and distribution undertakings to offset the advantage created for those undertakings, during the transitional period, by the altered legal framework following the liberalisation of the market in electricity as a result of the implementation of that directive”.

- Abuse of the free movement of capital:

National legislative provisions, adopted with a view to liberalising electricity undertakings, pursuant to which voting rights of purchasers of shares in private undertakings were limited.

This differs from the so-called ‘golden shares’ already addressed on numerous occasions by the CJEC⁵, since this provision was not aimed at maintaining the State’s special power over national supply undertakings after their privatisation, but rather, preventing State-controlled undertakings regaining power over newly privatised gas undertakings.

This could infringe Article 56(1) of the TEC which provides that “all restrictions on the movement of capital between Member States ... shall be prohibited”, since this rule prohibits not only discrimination but also any other restrictions on the movement of capital.

According to the CJEC, direct investment in the form of a shareholding in an undertaking and the acquisition of securities on the capital market constitute capital movements within the meaning of Article 56 TEC, since the restriction was not justified by overriding public-interest grounds and was not in accordance with the principle of proportionality.

- Infringement of the rules on free competition:

It is possible that until markets are fully opened - even if this were to happen faster due to the adoption of the new directives - obstacles to competition will exist.

Therefore, undertakings occupying a dominant position in a State with fairly closed markets could receive more compensation than those undertakings operating in a market more open to competition. This compensation could be used to acquire shares in undertakings in other Member States, and thus strengthen their own position in the internal market.

The provisions for reciprocity in Directive 96/92 do not justify the adoption by the national legislator of unilateral measures to impede the acquisition of shares in breach of basic freedoms and, in particular, free movement of capital.

It falls to the Commission to examine, on the basis of the European Commission Merger Regulation⁶, whether the acquisition of a share is compatible with the common market in cases where the operation constitutes a concentration as defined in this Regulation and has a Community dimension. In the proceedings brought before the Commission, Member States can invoke their interests. If a concentration does not have a Community dimension, the national authorities must act in the interests of competition.

If it does not qualify as a concentration within the meaning of the European Commission Merger Regulation, Articles 82 and 86 TEC could be applied together.

5. Judgements of 4 June 2002, Commission/Portugal (C-367/98, Rec. p. I.4731; Commission/France, C-483/99, Rec. p. I-4781 y Commission/Belgium, C-503/99, Commission/Spain, C-463/00 and Commission/ United Kingdom, C-98/01.
6. Council Regulation (European Commission) No. 139/2004 of 20 January 2004 on the control of concentrations between undertakings.

Comment: Barriers to entry in the electricity sector

In the light of the above, it can be concluded that in all cases market access should be based on a respect for the internal market rules and access to the network should be fairly priced and based on objective, transparent, non-discriminatory criteria.

THE POINT OF VIEW OF THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE ON THIS SUBJECT*

In the domain of access to electricity market, The EESC welcomed the Commission proposals since it shares the Commission's interest in moving towards a genuine internal market in electricity within the European Union as this will result in greater competition between companies, lower energy prices for companies and domestic consumers, a more competitive European economy as a whole, and a better quality of life for the whole population.

Full electricity market opening would help to put an end to the co-existence of different regulations in the Member States, which was causing distortions of competition and hindering the completion of the internal market.

However, the EESC pointed out the lack of sufficient generation capacity in some Member States, due to the orientation of energy policy, and the lack of competition, due to the existence of monopolies and oligopolies in the sector.

Having regards to the *common rules for the internal market in electricity*, the EESC noted that provisions are needed to ensure that essential public service objectives are met, such as a high level of protection for domestic consumers, and to establish social measures for vulnerable groups.

It therefore welcomed the fact that the Commission's proposals consider meeting public service objectives to be one of its fundamental objectives in this area and provides specific safeguards associated with these objectives, such as user satisfaction, environmental protection, economic and social cohesion, and the obligation of universal supply of electricity. However, the Committee asked one of the directive's stated objectives to be to ensure the supply of high-quality electricity at competitive prices, and therefore help improve health, security of supply, and the economic well-being of European citizens.

The Committee considered that provisions are needed to ensure that essential public service objectives are met, such as a high level of protection for domestic consumers, with special measures for the most vulnerable. Social measures should be put in place to ensure that vulnerable groups can benefit from electricity supply at a fair price.

The creation of an internal energy market has been less beneficial to domestic consumers and SMEs than to large companies. As mentioned above, this is particularly significant during the transitional period when the freedom to choose a supplier is gradually introduced, as the competitiveness of SMEs suffers.

* Opinions of the European Economic and Social Committee, adopted on 17 October 2001 and on 28 October 2004, OJC 2002/36 p. 10 and OJC 2005/120 p. 119.

The point of view of the European Economic and Social Committee on this subject*

In the opinion of the Committee, to compensate for these discrepancies the creation of joint purchasing-management organisations for SMEs and domestic consumers needs to be encouraged. These organisations can negotiate, on behalf of a group of customers, a framework contract with various suppliers. As a result suppliers would not have to negotiate individually with each customer and customers would be offered better supply conditions.

Measures must be adopted so that this acceleration in the market opening process does not create even greater job losses in companies in the sectors concerned.

It's important to stress that increasing transmission capacity, so as to increase international trade in electricity, will have an impact on the environment. This impact must be kept to a minimum in order to overcome growing public opposition, especially in environmentally sensitive areas.

THE POINT OF VIEW OF THE BELGIAN MARKET REGULATOR (CREG) ON THIS SUBJECT

Rudy De Leeuw, Federal Secretary, FGTB (Belgian socialist trade union)

There were many reactions to the report commissioned by the General Council of the Commission for the Regulation of Electricity and Gas (CREG) regarding the functioning of the electricity market in Belgium.

Before outlining the points made by the General Council, it is important to pinpoint the situation on the market which led it to commission such a report.

For those unfamiliar with the electricity sector as it stands, it is worth pointing out that in the years prior to the liberalisation of the electricity market (1999), the generation and transmission sectors were grouped together within one body, the Company for the Coordination of the Generation and Transmission of Electrical Energy (CPTÉ). This brought together all the centralised generation plants belonging to Electrabel and SPE (the second Belgian electricity producer - *editorial note*; however, transmission and generation were also united within one technical and economic body.

This took place as liberalisation came under discussion at the European Parliament and the European Union Council, and as plans were being made for the probable unbundling of generation, transmission and distribution.

Immediately before liberalisation, this created a barrier to entry that was likely to delay the establishment of an electricity market.

Concentration in generation also posed a problem, especially given that the two economic bodies concerned (Electrabel and SPE) differed significantly in size (with 90% and 10% of generation facilities).

Initially, the establishment of conditions for opening up the electricity market meant that certain economic and technical links would need to be untangled, and this took some time.

The law required that power transmission be assigned to an independent company, leading to the creation of Elia. A number of stages were needed in order for this company to be placed in charge of the transmission network, including the essential step of setting its value.

At present, since the General Council's study (among other things), the process is not yet complete: recently, when decisions were being made regarding the Suez-Electrabel operation, the government called on Electrabel to reduce its stake to below the blocking minority.

This point was also raised in the General Council's comments on the London Economics report.

As regards generation, the 'historical players' went their separate ways. SPE's desire to become a market player led it to seek external alliances: first with EDF, and then, more recently, with GDF-Centrica, with

The point of view of the Belgian market regulator (CREG) on this subject

which it reached agreements. It is too early to say what these generation developments will bring to the Belgian market and consumers.

One aspect that should be borne in mind is the state and nature of generation facilities at the time of liberalisation.

On the whole, generation facilities can be said to have been technically and economically 'efficient' when liberalisation took place.

In technical terms, as regards nuclear facilities, the level of utilisation of Belgian plants compared favourably to that of other plants.

As regards other plants (particularly traditional ones), Belgian facilities included modern steam/gas turbine and steam turbine plants, and there was a substantial level of co-generation.

Generation facilities also included multipurpose plants (coal-gas), which were an asset.

From an economic standpoint, as has already been discussed on numerous occasions, nuclear facilities are largely amortised and likely to continue operating for another ten years or so.

Gas-based techniques are effective; these plants rely on diversified sources for their supply.

Consequently, when liberalisation took place, generation facilities could be considered up-to-date, and there were few 'old facilities' that the power producers wanted to dispose of (for environmental reasons, for example).

The London Economics report leads to the assumption that newcomers will have to invest in new plants, new facilities, *etc.*

At this stage, it should also be noted that, due to their knowledge of the tools and their operation, Belgium's historical players have analysis and forecasting capabilities that give them a dominant position in the market.

This brief overview of events up until the London Economics study illustrates that, given the technical and economic state of the generation facilities when liberalisation took place, it will be extremely difficult for new operators to enter the market.

Indeed, for the abovementioned reasons, it seems highly unlikely that the existing plants will be transferred voluntarily.

The only way for new operators to enter the market will be through 'mandatory' transfers of power: Virtual Power Plants (VPP), capacity releases, *etc.*, or investment in new plants to be built.

It was therefore against this backdrop that the study was launched by the General Council and entrusted to London Economics.

The report has also been discussed at length by the General Council and prepared thoroughly by the working group on Market Operation. This working group based its work on the conclusions of the report and, after numerous, extensive exchanges of views, the Opinion of the General Council was issued.

The Opinion of the General Council of the CREG on the functioning of the Belgian electricity market based on the report by London Economics on the Structure and functioning of the Belgian electricity market in a European perspective ("Avis du Conseil général de la CREG relatif au fonctionnement du marché électrique belge sur base de l'étude London Economics relative la structure et fonctionnement du marché belge de l'électricité dans une perspective européenne") is available on the CREG website (www.creg.be) under "Publications" (database, opinion AR CG 27 04 05/020).

First and foremost, the General Council notes that in Belgium, the market is not yet functioning optimally and that not all categories of consumers are reaping the rewards of liberalisation.

As regards the vertical integration of the electricity sector, the General Council believes that no market player can maintain an advantage through stakes in network operators (transmission and distribution).

The General Council recommends that all market players, either individually or through connected companies with significant power generation, supply and/or trading activities, should reduce their stake to below the blocking minority and that the rules of corporate governance should be reinforced.

As mentioned above, this recommendation guided the Federal Government during its appraisal of the Suez-Electrabel operation.

In terms of market concentration, the General Council asked the CREG's Board of Directors to draw up an additional study on developing and implementing – at European or Belgian level – a programme that would make part of the generation capacities of the dominant market player available to other market players. This study should show the different types of capacity releases possible (VPP auctions, capacity swaps, power purchase agreements (PPAs), *etc.*) and the practical means of implementing such a programme in order to achieve the desired result, namely, cheaper electricity for the end-customer.

The General Council, with the support of the Board of Directors, is currently backing (December 2005) a study which is being drawn up on the subject.

The General Council, noting that prices are too high for consumers, is calling not for a return to the old regulation system which prevailed before the market was liberalised, but for the temporary re-regulation of certain areas of the market in order to correct anomalies caused by the current lack of competition and/or the move from one regulatory system to another. It is pressing for a detailed analysis of market operation, particularly price evolution, and for temporary regulatory measures to be taken, as appropriate, to remove the threat to Belgium's industrial fabric and job market and to prevent consumers, particularly the under-privileged, from suffering from the lack of competition evident in the Belgian market. All this would be carried out in full compliance with European legislation.

The General Council also believes that competition can be stimulated over the coming years by substantially increasing available import capacities, without losing the necessary balance between

The point of view of the Belgian market regulator (CREG) on this subject

increased generation in Belgium and import capacity. It urges that closer cooperation – even integration – of the different transmission network operators be sought at European level.

The General Council has also made other recommendations, such as:

- creation of a power exchange covering the French, Belgian and Dutch markets, according to certain specific terms and conditions;
- implementation of a regulated balancing system with rates based on actual costs, not market prices;
- mandatory provision by market players of certain information concerning generation, transmission, distribution and customer profiles, following the example of countries where the sector has been liberalised for a long time, in order to encourage the market to open up.

While some of these recommendations (such as the creation of a power exchange) are being implemented, others are still under consideration, and the Council will ensure they are finalised.

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The London Economics report and, above all, the ensuing discussion, have enabled the General Council to raise awareness about the situation of the electricity market in Belgium, focusing on aspects other than the comparison and evolution of prices for end-customers (although such comparisons will remain useful for measuring the results achieved through liberalisation, should significant price decreases occur).

As shown at the beginning of this comment, this discussion was bound to arise sooner or later between the players in the electricity sector. What remains to be seen is whether it came too early or too late.

CHAPTER 6

LIBERALISATION AND UNIVERSAL SERVICE IN THE POSTAL SECTOR

Peter Andersson, Linköping University

Abstract:

The paper deals with the question of whether liberalisation of postal services is compatible with maintaining the universal service obligation. The experience of Sweden, which liberalised in 1993, is that reform has stimulated market efficiency while preserving universal services without subsidies to the provider. The paper argues that a precondition for long-running, sustainable, universal services is sufficient per capita volumes to make it possible to benefit from scale economies. Competition strengthens the efficiency of the universal service provider but falling volumes caused by substitution or competitive entry may erode its profitability. Future European regulatory reform can follow different strategies: a market scenario with complete liberalisation combined with universal services or a mercantilist scenario with support of a strong national Post. The former model relies on scale economies while in the latter universal services can, at least transitorily, be supported by regulation.

Keywords:

Market regulation, postal services, universal services.

JEL Classification:

L43, L51, L87

INTRODUCTION

In 1992, a Green Paper on postal services in the European Union was published by the European Commission. It was the result of a liberalisation process started in 1988 in order to create a single Community postal market. In 1997, the postal directive was adopted by the Parliament in order to improve quality and create an internal market; it was amended in 2002 with a time plan for full liberalisation of postal services by the year 2009.

Postal services have traditionally been a state monopoly all over the world, even in the United States where regulated private monopolies are more common. More than most communications industries, postal services are characterised by economies of scale and scope. Economies of scale are most significant in delivery and automatic sorting and economies of scope exist between different mail products. Because of the supposed natural monopoly of the postal sector, state control has been a way to avoid private monopoly gains. It has more or less been taken for granted that the state should provide postal services for everybody across the country. With a state monopoly, regulation of universal services serves as a guarantee against state organisations becoming inefficient in a non-competitive environment. Until the year 2000, postal volumes were increasing in most nations, approximately following the increasing GDP; since then volumes have begun to decrease in several high-income countries.

In the 1970s, science began to show that competition could be introduced into formerly monopolised markets. This triggered a wave of liberalisation, which also reached the postal sector. Regulation has two major aims in a liberalised postal environment: *reduce market power* and *ensure availability*. The first aim is related to efficiency: to establish the delicate balance between introducing competition in order to enhance the internal efficiency of the former monopoly while preserving economies of scale and avoiding inefficient entry. The second aim is related to distribution of welfare: universal service regulation becomes a way to protect consumers should market forces cease to provide all the desired services.

In Europe, there is currently an interesting contrast between Sweden, which liberalised its postal market in 1993, and the rest of the European Union, which retains monopoly regulation.¹ The Swedish full-scale experiment can serve as a basis for comparison. The aim of this paper is to discuss the impact of the Universal Service Obligation (USO) on the postal market, the role of regulation and whether USO is compatible with liberalisation.

1. UNIVERSAL SERVICES IN THE POSTAL SECTOR

The aim of the European Union postal directive² is to establish an internal market and improve the quality of postal services. It specifies minimum requirements for quality and service and it is up to the Member States to define their own specifications of the rules. Universal services include the permanent provision of a postal service of specified quality throughout the territory at affordable prices for all users. Crew &

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1. Although the deadline for deregulation is set at 2009, the German, Dutch, British as well as the Norwegian markets will probably be liberalised by 2007. Finland liberalised at the same time as Sweden, but because of restricted licence requirements for new operators, no actual competition has emerged. Worldwide, only New Zealand and Argentina have fully liberalised their postal markets; a few other countries, such as Singapore, will do so in the next few years.
 2. Directive 97/67.

Kleindorfer (2001) define USO as an obligation to deliver at least a minimum quality of service at a uniform price to all consumers. USO would not be demanding if it were not combined with a uniform price. There is always a (higher) price at which operators would be willing to offer services, which are unprofitable at current prices.

In Sweden, USO is defined in the Postal Act and specified in the Postal Ordinance and the licence³ for Sweden Post (Posten AB). Everybody should be able to send and receive all addressed postal items up to 20 kilo (*i.e.* letters, parcels, addressed newspapers, catalogues and books). USO services should be of good quality, at affordable prices and, for single letters⁴, at a uniform price. Collection and delivery should take place at least five times a week at a sufficient number of points. Although in principle the obligation could be split between several operators, Sweden Post is the sole universal service provider, and is obliged to provide universal services without any compensation.

Sweden is a sparsely populated country and USO is mainly regarded as an obligation to deliver overnight across the nation, even along unprofitable routes in remote areas. It is important to note, however, that USO not only involves *ex ante* planning for nationwide overnight services, but also delivery of all kinds of mail products, regardless of mail volumes, weather conditions *etc.* New entrants can choose to avoid extra costs owing to severe weather conditions or to deliver only every other day along routes with small volumes. The existing postal service has the advantage of offering its clients delivery to the whole market. However, USO also acts as an incentive to entrants since new firms can hand mail with a higher marginal cost of delivery than the Universal Service Provider (USP), over to the USP, which serves as a 'delivery service of last resort'.

As long as there is a state monopolist provision of universal services is simple. The State (government) can instruct its company to provide whatever services it wants. Prices can be set at a level that allows the company to break even. Implicitly, it means that some services cross-subsidise other services. With liberalisation and emerging competition, new entrants can be expected to enter the most profitable segments of the market, so-called 'cream-skimming'. Cross-subsidy of USO can become impossible. This is why many countries have a 'reserved area'. This consists of provision of services where a monopoly is granted and whose surpluses finance USO. Currently, the maximum reserved area in the European Union is for letters up to 50 grams (or 2½x the standard postage for a 20 grams letter). However, 75% of all letters weigh below 50 grams, so not until the reserved area is completely abolished will there be room for broader competition.

There are three possible ways of financing USO. It is a question of who should pay for the services: customers of the USP, all postal customers or taxpayers. It can be financed internally by the USP through cross-subsidies as is done today. A second alternative is to create a compensation fund. This is provided for in the postal directive but has not yet been established. It means a contribution (*e.g.* per letter) from other operators to the USP, thus all postal consumers share the burden. A third alternative is by direct subsidies from the state to the USP or through a process of public procurement. Finding the fairest solution is a political issue: whether a person should support unprofitable postal services through postage or tax.

3. In order to carry out postal services in Sweden, operators need a licence from the National Regulatory Authority, the Post and Telecom Agency (PTS).

4. There is a distinction between 'single letters' and 'bulk mail'. The latter are identical letters in numbers exceeding 500 pieces posted at one time, usually second-class mail or direct mail. The former are either in smaller numbers or unidentical: office mail and letter box mail.

From the perspective of efficiency, all of these options have negative effects. A reserved area creates a partial monopoly while a compensation fund has transaction costs and taxes create distortions. There is, however, no evidence that today's solution in many countries of a reserved area is the least inefficient.

2. WHAT IS THE COST OF UNIVERSAL SERVICES?

Remarkably, considering the importance of USO arguments for retaining a monopoly, few reliable estimates of the cost of universal service exist. The relevant concept is 'the financial burden', *i.e.* how much the USP's financial situation is worsened because of universal services, since there are not only extra costs but also benefits for the provider.

One explanation for the lack of evidence regarding the financial burden is the difficulty of calculating such figures. Firstly, it is not evident *ex ante* which services would be withdrawn in a perfectly competitive environment. Secondly, postal production is characterised by large joint costs, so calculations of the specific costs of certain services must be based on assumptions regarding cost allocation. Third, USO also generates revenue. If a postal operator ceases to offer nationwide delivery, mailers may reduce the frequency of mailing or turn to other means of communication if mail ceases to be a means of reaching everybody. Providing universal services increases revenue from the whole network.⁵

The most reliable survey of USO costs was carried out by the British regulator Postcomm (2001). He finds the additional cost for the year 1999/2000 to be £81 million, which corresponds to around 1.1% of the annual revenue⁶. To cover the cost, a markup of 1.5% on current prices is needed. Postcomm stresses that the cost is not adjusted for any internal inefficiencies in provision of services and that there are also benefits that are not included.

At the time of liberalisation in Sweden, the Post Office presented a cost estimate for 'nationwide services' (the concept of USO was not yet introduced) of €130 million (in 1990 prices, approx. 10% of the turnover at that time). For a long time, this figure remained an approximation of the extra costs that Sweden Post had to bear for USO. The author found the source in an archive and this figure turned out to be the incremental cost for serving the whole country compared to only providing local mail, thus completely irrelevant. Since then, several 'estimates' have been presented, although all must be considered pure guesses. In 2003, the National Regulatory Authority (NRA) even concluded that there were no extra costs at all. As Sweden Post claims that it will continue to provide these services, the NRA argues that this indicates that a commercial judgement would be that the financial burden is zero.⁷ A recent Government Commission (SOU 2005:5) estimated the net costs for 2004 to be between €12 million and €50 million (0.5 - 1.8% of the turnover; similar to the United Kingdom figure).

Some researchers, beginning with Crew & Kleindorfer (2001), have argued that liberalisation while preserving USO can result in deterioration of postal services. The assumption is that new entrants attract the most profitable clients (or the most profitable mail), *i.e.* those sending the most mail to low-cost

5. A similar situation occurs among air or railway companies, who can continue to operate unprofitable lines because they bring passengers who contribute to the profitability of other lines.

6. Using figures from WIK (2004).

7. See Appendix 1 for evidence that this argument is not necessarily true.

delivery areas and with low costs for switching service provider. Entrants deliver on selected low-cost routes and hand the remaining mail to the Post Office. With the USO, the existing service provider keeps delivery on all routes but ends up with a larger percentage of high-cost mail. This can either result in deterioration, with increasing prices and further reduction of volumes or equilibrium, with higher prices and lost economies of scale.

3. LIBERALISATION AND USO IN SWEDEN

In Sweden, liberalisation was regarded as a means of saving the State incumbent from the threat of new technologies and new competitors. On the other hand, in most European Union countries, it has been argued that a monopoly is needed in order to safeguard USO. In Sweden, the (former) Post Office claimed the opposite. In 1990, the Post Office was already arguing in favour of liberalisation, claiming that it would facilitate more efficient organisation. However, in the background was also an intention to expand to other geographical areas as well as other sectors in the economy. Sweden Post guaranteed it could maintain universal services without compensation because of its significant economies of scale, provided that it was given 'equal conditions of competition'. Liberalisation was regarded not as a threat to the monopoly, but a measure granting the freedom to respond to cream-skimming entrants.⁸

In 1991, a new, non-socialist government was elected and Sweden faced a severe recession with negative growth. The first new entrant to the postal market, City Mail, began delivery of bulk mail in central Stockholm. The Director-General of the Post Office and the CEO of City Mail formed an unconventional alliance and pushed politicians to liberalise. Monopoly was abolished in 1993; in 1994, the Post Office turned into Sweden Post, a public limited company; a Postal Act and a new regulatory authority was introduced. What differentiated Sweden from other countries was the ambiguous construction of the legal monopoly and two market actors arguing in favour of liberalisation. Sweden Post got what it wanted: independence and the opportunity to expand into new areas. City Mail got the legal right to compete with Sweden Post. Politicians could fulfil their ambitions to liberalise, even though the postal market was where deregulation was least expected.⁹

Since liberalisation, Sweden Post has continued to sign agreements with the State to provide universal services without compensation. It has since claimed that it would provide these services even without a formal obligation. The possible extra costs incurred are outweighed by the benefit of offering services to the whole country.

Sweden is in many regards different from the rest of the European Union. Sweden is the second largest country of the EU-15, but is very sparsely populated. Sweden also has the highest Internet connection rate. These factors are not beneficial to the postal sector. But on the other hand, Sweden has the highest mail per capita ratio in the European Union, which gives strong economies of scale. The liberalised postal sector in Sweden functions well. The price of postage for a 20 grams letter is approximately the same as in other high-income European Union countries (excl. VAT¹⁰). Quality, measured as the percentage of overnight mail arriving on time, is among the best in Europe. The number of service points has risen

8. Sweden never had a reserved area; the extent of the monopoly was ambiguous and originally designed only to cover written messages.

9. Andersson (2001).

sharply and is the second highest after Ireland. The former monopolist has provided universal services in a liberalised environment for ten years despite facing cream-skimming entry from City Mail on the bulk mail market for around 40% of Sweden's households.

Liberalisation has had positive but modest effects on the market. The overall price level has not really been affected.¹¹ However, dramatic changes have occurred in the price structure. In Table 1, the change in real prices of postage for a selection of letters is illustrated. Single letters have increased by 25 - 40% (excluding the effect of VAT on the postage), whereas the price of bulk mail has not increased much at all and in many cases has actually decreased. Heavier letters, deliveries in larger towns and clients with large volumes have seen the largest price cuts. 1991 was chosen as the starting year because Sweden Post began to adjust its prices before the monopoly was removed as a response to the establishment of City Mail.

It is important to note that the comparison is for list prices. Most large customers of bulk mail (more than 500 identical letters) negotiate individual contracts with prices that are significantly lower than the list prices. These contracts are, however, business secrets. Thus, the table underestimates the downward pressure on prices for bulk mail.

Table 1 - Change in real price between 1991 and 2003 for different letters

		20 grams	50 grams
<i>Direct mail</i>	not sorted	+42 %	+42 %
	pre-sorted	+31 %	+29 %
	pre-sorted, large town delivery	+11 %	+11 %
<i>Second class</i>	not sorted	+10 %	-37 %
<i>bulk mail</i>	pre-sorted	- 8 %	-47 %
	pre-sorted, large town delivery	- 21 %	-54 %
<i>First class</i>	not sorted	+30 %	-25 %
<i>bulk mail</i>	pre-sorted	+17 %	-32 %
	pre-sorted, large town delivery	+4 %	-39 %
First class, single letter		+44 % (+79 %)	+44 % (+79 %)
Second class, single letter		+36 % (+70 %)	+36 % (+70 %)
<i>First class local delivery (min 250)</i>		+10 % (+37 %)	+12 % (+40 %)

Notes: Figures within brackets show the change in price including the effect of adding value added tax to the postage. Large town delivery is delivery to the 19 largest towns in Sweden, for which Sweden Post has been able to prove lower delivery costs than for the rest of the country. The consumption price index (CPI) has been used for calculation of real prices.

Source: Own calculations based on PTS' database of postal prices.

The productivity of Sweden Post increased by 10 - 20% shortly after competition was introduced, but has since developed in line with similar businesses. The effects on internal efficiency appear to be more static

10. VAT on postage was introduced in two steps in 1994 and 1996. This was part of a tax reform in Sweden and not a direct consequence of liberalisation. However, in order to create equal conditions for competition, the state service cannot be treated differently from other postal operators, so it is necessary to have a uniform VAT level for all operators. The introduction of VAT raised the postage for households, who cannot deduct VAT, but this increase in price should not be included in an analysis of the direct effects of liberalisation.

11. The Post Office was not a profit-maximising firm, so there were no initial monopoly prices to press down. The increase in productivity improved profitability in the 1990s, but productivity and the financial result has worsened since 2000 because of falling volume. The expected benefits of liberalisation are exaggerated if the State monopoly already sets prices at the average cost and is relatively efficient. Because of economies of scale, entry on a large scale cannot be expected either.

than dynamic.¹² The financial result of the letter division of Sweden Post has been positive; in fact it has been something of a cash cow for the company, whose overall situation has been worsened by its over-the-counter business, unprofitable investments in the Information Technology (IT) sector and more recently, by adjustment costs. Over the last few years, the profitability of the letter business has been declining. This is because of falling volumes and market share, and less revenue per letter. After 2001, Sweden Post reversed its strategy and returned to focussing on its core business of mail and parcels.

Based on this experience, from a Swedish perspective, it is somewhat paradoxical to observe the doubts of many other states regarding the possibility of combining USO with liberalisation. The full-scale experiment of Sweden indicates that the problems associated with USO have been exaggerated. High volumes and efficient production can safeguard universal services. A more detailed discussion of the financial burden and future scenarios is presented in Appendix 1.

Regulation of USO concerns the availability of postal services. Regulation also has to promote efficiency. Swedish experience shows the importance of regulatory reform to the performance of the market. The two most important issues in Sweden are discussed below.

Firstly, access to the 'immaterial infrastructure' has to be granted. Postal production does not have its own physical infrastructure and no vertical separation is needed. However, access to the postcode system, address files and post office boxes has proved controversial since liberalisation.¹³ The postcode system has not been separated from Sweden Post (as the NRA proposed). However, it is now controlled by a board of representatives from different firms and the right of all operators to access the postcode number series was granted in the Postal Act. Address files for all recipients have been organised by a separate company co-owned by different postal operators; thus a 'club' solution has been found. Access to post office boxes has been regulated by decisions made by the competition authority.

Secondly, price and/or access regulations have also been subject to controversy over the last ten years. Prices in Sweden have been regulated since liberalisation began, in the form of a price cap (a ceiling for price increases) for single letters. The original justification for this was the protection of small consumers from the potential use of market power from Sweden Post. Later, all consumers were included in this protection. Several actors, including the recent Government Commission (SOU 2005:5), have argued that postal payments are such a small share of the budget that the protection argument is obsolete. The NRA claims that a price cap is needed to prohibit Sweden Post beating its competitors by raising postage on single letters, where it has a monopoly, and cross-subsidising competitive sections of the market. The Government Commission argues that this is prohibited by the Competition Act and proposes strengthening the relatively weak access regulation and using it to replace price regulation. Another argument against the price cap is that it has resulted in underpricing of the 20 grams letter, in itself an abuse of the dominant position of Sweden Post. Moreover, such behaviour may have hindered the establishment of new competitors in the single letter market.

12. SOU 2005:5.

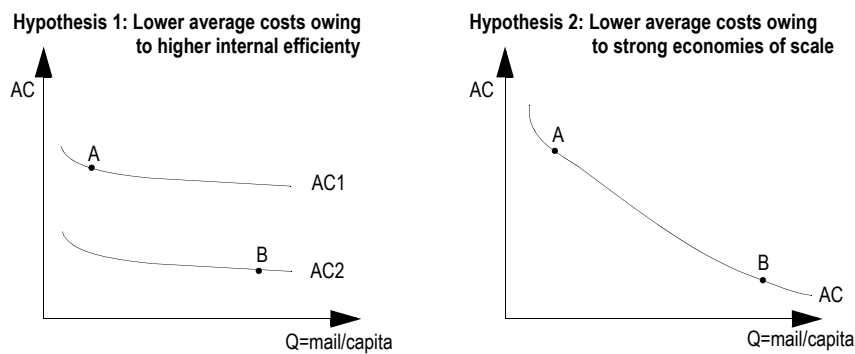
13. In the USA where the Post Office owns recipients' mailboxes, access to this distribution point would have to be regulated as well. An analogy is the local loop of telephone lines.

4. SWEDISH EXPERIENCES IN A EUROPEAN CONTEXT

The conclusion to be drawn from the Swedish experiment is that with a sufficiently efficient USP, the whole issue of universal services is not such a decisive argument against liberalisation and that the European Union process is too slow. In this section, however, I will argue against applying this conclusion without caution. The analysis builds on European data provided by WIK (2004).

A striking feature of postal services in Europe is the large difference in mail per capita, even between countries with similar standards of living. Countries with similar GDP could be expected to have similar volumes per capita. This is not the case, for example Sweden and Italy have nearly the same GDP per capita but Sweden has 3.5 times more mail per capita!

Figure 1 - Two hypotheses about differences in average costs



Source: Linköping University.

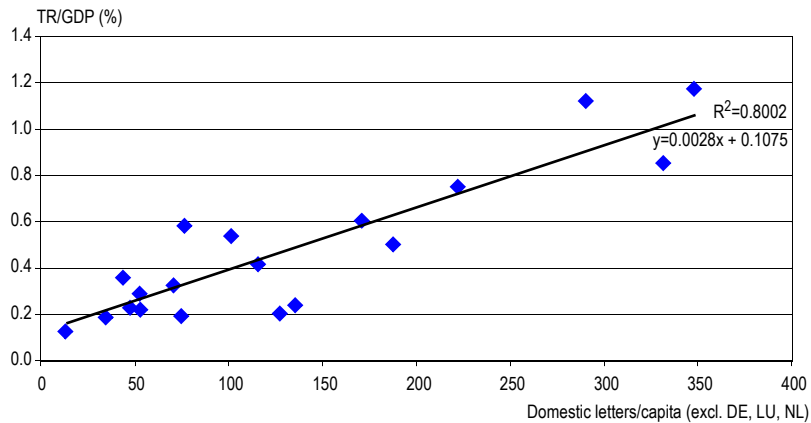
If we compare two countries and find that country B has substantially lower Average Costs (AC) than country A, the obvious conclusion is that the postal operator in country B is more efficient. However, this is not necessarily true. Because postal production has economies of scale, this could alternatively be explained by larger volumes per capita. In that case, country B is more efficient because sorting and delivery capacity is utilised better and not because of organisational or technical superiority. The two hypotheses are illustrated in Figure 1.

From WIK data, we cannot directly find total costs for different USPs. However, there are figures for total revenues and profit, from which approximations can be made about the total costs. For several reasons, these figures can only be viewed as estimates. Many operators provide other services than the distribution of letters and parcels, which can also generate revenue. The figures may be affected a certain year by temporary revenues or costs. The diagrams below can only be taken as indicators for these conclusions.

Firstly, it is natural that the more mail per capita, the larger the percentage of a nation's production must be devoted to providing postal services. Figure 2 shows the relationship between postal revenues as a fraction of GDP and mail per capita. Germany, the Netherlands and Luxembourg are exceptions and have

been excluded. In the first two countries at least, the postal operator has engaged in other commercial activities and revenues come from other sources than letter distribution.

Figure 2 - Average revenue as a share of GDP and letters per capita for 19 European Union posts (2003)

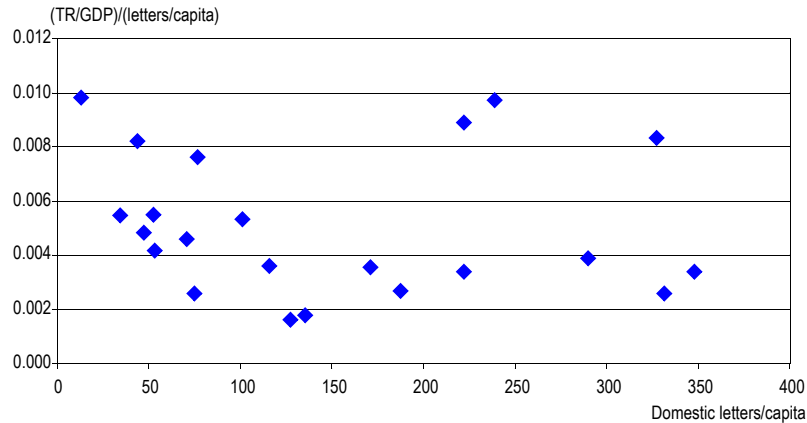


Source: Own calculation based on WIK (2004).

The correlation between revenue (or costs) as a fraction of GDP and letters per capita is high. If we look instead at the relationship between average revenue and total number of letters, there is no correlation at all; other factors determine average revenue per letter. The average revenues of the three big postal operators in Europe included here (data is lacking for France) are the same as those of smaller operators.

If we shift the focus to letters per capita, a familiar average cost curve emerges. Figure 3 shows the relationship between an estimate of average costs (average revenues/GDP) and letters per capita. The more letters per capita, the lower the average cost. It supports Hypothesis 2 above, namely that everything being equal, average costs are lower when mail per capita is high.

Figure 3 - Average revenue and letters per capita in 22 European countries 2003



Source: Own calculation based on WIK (2004).

In this diagram, Germany, the Netherlands and Luxembourg are included. These three countries diverge from the rest, which all are located along a falling AC-curve. Sweden is the country with the highest volume, 349 letters per capita. It appears that countries with volumes above approximately 150 letters per capita have reached a volume where average costs are more constant.

There are two conclusions to be drawn from this discussion. Firstly, for a country like Sweden with high per capita volumes, lower average cost can be a result of economies of scale rather than superior performance by the operator. Secondly, for countries with small volumes, below 100-150 letters per capita, average costs are higher. It means that entry of new firms is less likely: the natural monopoly is evident with falling average costs. It can become difficult to preserve USO in these countries if cream-skimming entry occurs.

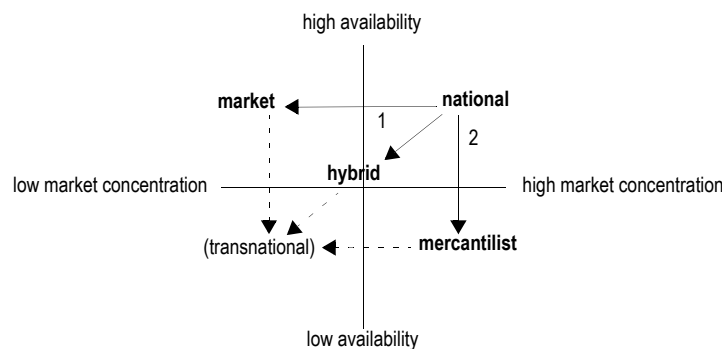
5. USO, STRATEGY AND REGULATION IN THE FUTURE

The Swedish full-scale experiment shows that under current conditions, it is possible to combine universal services with liberalisation. In what direction will European postal markets develop? These questions will be dealt with in a model combining the two reasons for regulating the postal market mentioned at the beginning of this paper: *market power* due to economies of scale and distributional concerns over the *availability* of postal services.

The model includes the five different types of postal markets, as identified in an empirical study by Campbell (2001). He describes the *national* model with monopoly and strong demand for availability. The universal service is considered a superior goal to efficiency or yield. This is the traditional type of postal market, still valid in many countries. From this starting point, he describes different alternatives. The *market* model means liberalisation with a removed legal monopoly. The intention is to increase the number of providers, leading to stronger competitive pressure (although because of economies of scale

it will probably result in oligopoly rather than perfect competition). In this model, the availability of postal services is not regarded as a problem; universal service will continue to be provided because it is profitable. The graveyard spiral will not happen. A different scenario is what he calls the *mercantilist* way. Here, liberalisation is a means for the incumbent to strengthen its market position, expand internationally or into other business areas. Market concentration remains high but the demand for availability is relaxed and is seen as a price to pay for competitiveness. A middle way is the *hybrid*, a mix of market and mercantilist. In the future, the postal market may develop further into the *transnational* model. If this proves to be the case, a few multinational firms active in many countries will dominate the postal market. An analogy could be the parcels, banking or airline sectors.

Figure 4 - A model of different scenarios for a liberalised postal market



Source: Own model based on scenarios by Campbell (2001).

In Figure 4, these five scenarios have been put into a model using the two reasons for regulation of the postal sector. Even if most countries will probably remain somewhat 'hybrid', it appears that Sweden has roughly followed the market model. Availability remains high and the competitive pressure and market power of the existing Sweden Post has been reduced. It is true that its market share is over 90%, but current and potential competition has enhanced efficiency. This unique example of liberalisation shows that the market scenario is possible. Finland, the United Kingdom and Slovenia appear to have decided to follow the same route.

If we apply this model to the rest of the European Union, we find that most countries remain in the national model. The implicit idea behind European Union liberalisation could be regarded as a shift along Arrow 1 (see Figure 4) into the market model in 2009. When postal operators have eventually adjusted to competition, complete liberalisation will result in a reduced market concentration, which will lead to increased efficiency and growth. This is combined with maintained availability, as USO is supposed to function even in a competitive environment.

However, one problem with European Union liberalisation is that the efficiency of the national postal markets is not a first priority. 'Efficiency' is not mentioned in the postal directive. The aim is to establish an internal market and to improve quality. Quality can be related to efficiency, but can also be achieved

at the expense of efficiency. The postal directive of 2002 refers to the Lisbon declaration and economic growth. Moreover, postal services are one of the 'services of general interest', for which 13 different objectives are identified.¹⁴ Only one of them is efficiency; different aspects of availability are addressed in much more detail. Thus, liberalisation of postal services in the European Union is not explicitly targeted at efficiency. There is a tension between the market and the national models.

The model cannot only be used as a tool for analysis of the current situation in different countries or the European Union as a whole. It can also show the different strategies of different actors or stakeholders. The final model for regulation is a result of a complex process depending on the behaviour of market actors, politicians, bureaucrats and interest organisations. In times of regulatory reform, market actors not only have to compete on the market, but in doing so act simultaneously in order to influence regulation to their advantage.

Somewhat paradoxically, Sweden Post promoted liberalisation in the early 1990s as part of a strategy to follow the mercantilist way. When letter volumes were expected to fall, management wanted to expand to new areas. They wanted to become an important European player in the logistics sector and moreover, to merge with a Swedish bank and use its increasingly unprofitable network of post offices for financial services. This strategy could have been successful due to a first-mover advantage, but political pressure hindered this expansion.

Today, it appears that in Great Britain the regulator Postcomm has begun reform to follow the market way. A process has been initiated to improve quality, introduce access regulation to promote competition and redefine the universal service with a belief that USO can be maintained if the Post Office is efficient. Postcomm (2002) emphasises the direct aim of making the Post Office more efficient.

Two other countries, Germany and the Netherlands, have departed from the national model. They have taken measures to make the Post Office more independent from the state before removing the letter monopoly. It allows the national Post Offices to take a more aggressive approach to expanding their activities, with a temporarily retained monopoly on the home market. These two countries follow the mercantilist strategy. Liberalisation is designed to strengthen the position of the state incumbent. Considering the high density of demand on their home postal markets, it is still possible that USO requirements can be fulfilled, although the prime focus in these countries appears to be on expansion.

The route other countries will take depends on internal policies and market conditions. In some countries with small volumes of mail, the market model may be impossible and the only way of preserving universal service may be to maintain the national model with a monopoly. However, this does not necessarily have to be granted to today's incumbent. A more efficient firm can take over the monopoly; some existing postal services may even fail within a process of structural change. It is not necessary either that one single firm have a monopoly everywhere. The mental construction of a single postal firm as a deliverer of last resort emanates from the time before liberalisation. Universal services can be procured where necessary and combined with access regulation.

14. EU (2003). The Economic and Social Committee clearly supports the 'national model' for postal services. "[t]he primary objective of services of general interest is access for all citizens, consumers and businesses to public services; when such services are provided by a publicly or privately-owned enterprise operating in the commercial sector, the profit- or competitiveness seeking criterion must under no circumstances be allowed to result in the disappearance of services for some citizens" (EESC, 2003, p.44).

In the medium term, USO can be threatened even in countries where it is profitable today. Falling volumes reduce economies of scale. Moreover, the shift from overnight mail to less time-sensitive mail makes it less important to deliver daily to all locations. The percentage of overnight mail in Sweden has fallen from 55% in 2000 to 37% in 2004.¹⁵ Eventually, the quality of USO will be contested.

CONCLUSION

Will there be universal services in a liberalised, competitive environment? Probably yes, at least in the medium term. It is not liberalisation that is the major threat to USO, but falling volumes and revenue. In countries with small volumes of mail per capita, the market may be too small for entry of new firms to occur. In the majority of countries, the benefit of providing universal services will outweigh the extra costs. The more efficient today's USPs are, the more likely it is that they will continue to provide universal services. Competition enhances the internal efficiency of existing postal services.

There may be some routes or products that no market actor is willing to serve. In this case, public procurement of these marginal services is a more efficient and fairer solution than maintaining a reserved area that allows for cross-subsidies. The creation of a reserved area risks financing not only USO but also internal inefficiency or investment in other areas. The same argument can be used against direct subsidies. A compensation fund is fair, as all postal consumers contribute to universal services financing, but can be technically difficult to implement.

In the future, will USO be provided by today's monopolists? Probably yes, in the short term, because barriers to entry are significant in the postal sector. However, it is not necessary in all countries. Significant structural change has to take place. Such structural change can take place within the incumbent or be a result of the establishment of a new operator, which takes over USO, be it a new domestic postal operator or – more likely – a foreign, transnational company. The 20 year adjustment period appears to have been utilised in only a few countries, such as Great Britain and Germany (albeit with different strategies).

The postal directive is intended to promote development of the internal postal services market in the European Union. Although cross-border mail is not unimportant (and truly an area where quality requires improvement), postal services are 97% domestic and the most pressing objective is to stimulate efficiency on the national postal markets. The policy should be to set a clear goal for the expected results of liberalisation before 2009. From a Swedish perspective, the benefits of liberalisation are greater than possible losses from supporting universal services. But liberalisation is no panacea – it is a delicate balance between reaping the benefits of competition as well as from economies of scale while maintaining USO. It requires a carefully designed regulatory framework and there are still improvements to be made, even in Sweden.

15. SOU 2005:5.

REFERENCES

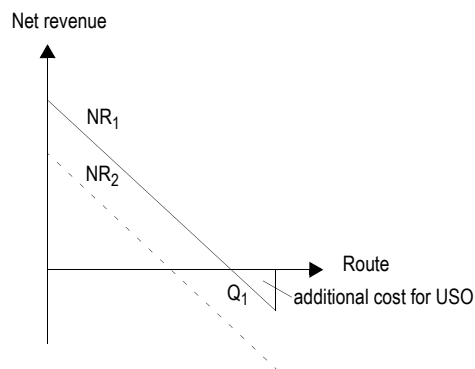
- ANDERSSON P., *Deregulation and Internet: new challenges to postal services in Sweden*, Linköping Studies in Arts and Science 228, The Tema Institute, Linköping University. (diss.), 2001.
- BERTHÉLÉMY F. L. & J. TOLEDANO, *In France, Mail Goes Where the Money and Businesses Are*, in Crew M., Kleindorfer P. (eds.), *Current Directions in Postal Reform*, Kluwer Academic Publishers, 2000.
- CAMPBELL R. M., *Regulatory and Governance Changes in Liberalized, Commercialized Postal Environments*, in Crew M., Kleindorfer P. (eds.), *Future Directions in Postal Reform*. Kluwer Academic Publishers, 2001.
- CREW & KLEINDORFER, *Whither the USO under Competitive Entry: A Microstructure Approach*, in Crew M., Kleindorfer P. (eds.), *Future Directions in Postal Reform*, Kluwer Academic Publishers, 2001.
- EESC, *Services of General Interest*, EESC Pamphlet Series, 2003.
- EU, *Green Paper on Services of General Interest*, COM(2993)270 final, 2003.
- POSTAL DIRECTIVE. 97/67/EG.
- POSTCOMM, *An Assessment of the Costs and Benefits of Consignia's Current Universal Service Provision*, 2001.
- POSTCOMM, *Postcomm's Proposals for Promoting Effective Competition in UK Postal Services*, 2002.
- PTS' database of postal prices, 2004.
- SCARFIGLIERE G., & V. VISCO COMMANDINI, *Postal Profits Arise where People Are*, in Crew M., Kleindorfer P. (eds.), *Future Directions in Postal Reform*, Kluwer Academic Publishers, 2001.
- SOU, *Postmarknad i förändring*, [Postal market in change. Report from the Government Commission on reform of the Postal Act. www.regeringen.se/sb/d/242/a/3652], 2005:5.
- WIK, *Main Developments in the European Postal Sector*, 2004.

APPENDIX 1

This appendix contains a more thorough treatment of the costs and financial burden of USO and different strategies for postal operators. In order to make a reliable estimate of the additional costs of providing universal services, according to a model by Panzar (2001), the starting point must be how a completely unregulated, profit-maximising firm would behave. Only if it maintained all its business activities, including collection and delivery in extremely sparsely populated areas of all mail products, would the additional cost be zero. Only when the loss of revenue that could result if a certain route (product) is larger than the cost of delivering along the route (producing the product) would no additional costs occur.

It is reasonable to assume that no entire region in a country should be left without USO; there are larger towns in these regions to which delivery is profitable. But there may be unprofitable routes in many regions. This means that USO does not result in extra costs for sorting and transportation but instead for collection and delivery along the routes. In sparsely populated areas, the rural postman carries out collection and delivery simultaneously in the morning.¹⁶

Figure A1 - Net revenue per delivery route with and without USO



Source: Linköping University.

Figure A1 illustrates the net revenue per delivery route. Routes have been ordered so the most profitable route is closest to the y-axis. Of course, routes do not generate revenue in themselves, because payments are made upstream by the sender, not the receiver. The net revenue per route is the postage generated upstream for the mail that is delivered along the route minus the direct delivery costs for the route. If the curve NR_1 is always above the x-axis, the net revenue is always positive. All routes are profitable and there would be no need for a universal service requirement. Because it is assumed that not all routes would be served without regulation, part of the NR_1 curve falls below the x-axis; some routes on the margin, above the quantity Q_1 , are unprofitable. The area under the curve, the total surplus,

16. It is not self-evident that delivery costs are highest in rural areas. The distance of the route is necessarily longer in those areas. But City Mail in Sweden claims that because of congestion and the fact that postmen cannot use a car in the central parts of a town, delivery costs are higher in such areas. Moreover, international research has shown that income and business structures determine the revenue connected to each route. High-income and business-dense areas generate higher revenues (Berthélémy & Toledano, 2000; Scarfigliere & Visco Commandini, 2001). Finally, areas with a higher density of post office boxes have lower delivery costs.

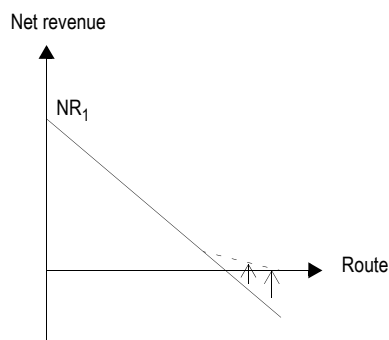
must be sufficient to cover all upstream costs for sorting and transportation as well as overheads, and the additional costs of USO (the area above the negative part of the NR_1 -curve).

What would happen if the unprofitable routes above Q_1 were closed? Postal volumes would shrink. Many mailers need to communicate with recipients spread across the country. It can be the clients of different firms, targeted groups of consumers or a public authority that needs to reach certain households. These recipients are distributed across profitable and unprofitable routes. If the Post were no longer able to deliver to everyone, mailers would have to find other means of communication or they would cut down on the frequency of their mailings. Thus, profitability would diminish for all the other routes in the network. The curve would shift down to NR_2 .

If the net loss is greater than the additional costs of serving unprofitable routes, there is no financial burden incurred due to USO. This occurs if the area between NR_1 and NR_2 is larger than the area above the negative part of NR_1 . The conclusion is that even if some routes are unprofitable and there is an extra cost for USO, there is no financial burden and a profit-maximising firm would continue to serve all routes. The fact that Sweden Post continues to provide universal services without compensation and declares that it will continue to do so is no proof of the argument that USO has no extra costs.

Neither is it an indication that USO regulation is unnecessary. An unregulated firm would prefer to continue offering collection and delivery to everybody. But it would either raise its prices or reduce the service for unprofitable routes. It may be in the form of higher prices for senders of mail to unprofitable areas or of an extra fee for daily distribution paid by households along these routes. An alternative would be to reduce services by shifting costs to the recipients. This may take the form of ending daily deliveries or shortening routes so that recipients would have to travel longer distances to pick up their mail. Thus, delivery costs would be reduced without stopping delivery to everybody.

Figure A2 - Strategy without USO



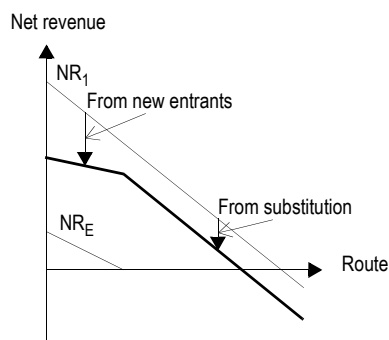
Source: Linköping University.

By raising net revenue through a combination of higher revenue and lower costs, USO can be maintained with no additional costs. This is illustrated in Figure A2. That is why it is important to include in the definition of USO the fact that it should be at a uniform price and quality.

The surplus required for covering the additional costs for USO is eroded for two reasons. The entire NR-curve shifts to the left because the most profitable letters decrease in volume, mainly due to competition from the Internet. Moreover, when new operators enter the market, they are supposed to cover the routes with the highest net revenue¹⁷. In this segment, the NR-curve of the existing operator shifts more to the left. The net revenue of the new entrants is shown by NR_E and the net revenue of the incumbent shifts to the thick line. At a certain point, the surplus becomes insufficient to cover upstream and USO costs. This is the deterioration scenario, illustrated in Figure A3.

On the other hand, competition may improve the internal efficiency of the incumbent. This will shift the NR-curve outwards. An efficient service provider with high volumes is thus the best situation for ensuring that universal services will continue to be provided. If this is still not sufficient to break even, the beneficial effect of competition on efficiency is likely to be better for society than the extra costs that will occur through maintaining the USO using public procurement or transfers from other operators in a compensation fund.

Figure A3 - The effects of emerging competition



Source: Linköping University.

17. Even if, in practice, in order to cover a certain area also some less profitable routes must be served. Usually new entrants try to cover a certain range of postal codes. They cannot be as selective as is hinted in Figure A3.

COMMENT: THE ISSUE OF UNIVERSAL SERVICE OBLIGATIONS WITH AN APPLICATION IN THE POSTAL SECTOR

Brenda King, European Economic and Social Committee

BACKGROUND

Postal services are not unique in having universal service obligations. Telecoms and the power sector have similar responsibilities. However, the postal industry is unique in being highly labour intensive, requiring a large workforce of postmen and -women to reach every corner of the country.

One of the other big differences is that the telecoms industry has been fully liberalised, whereas the power industry is heading for a full liberalisation next year. In contrast, the postal sector is not expected to move towards full competition at an European Union level until 2009. That said, some Member States are planning to fully liberalise earlier, and the United Kingdom already has a fully open postal market from January 2006.

The crucial issue is whether the universal service can be financed in a fully liberalised market.

Role of postal services

Postal services are an essential public service, relied upon by local residents, businesses, local and national government, and the community generally. Notwithstanding the introduction of e-mail and other electronic messaging, and the continuing use of faxes, the volume of mail delivered each day in most European Union Member States is still growing, albeit at a slower pace than previously.

Retail Networks

Closely aligned to postal services are the retail networks, which provide access to the system for the vast majority of the population. In most European Union Member States these are national networks, either wholly owned or partly owned by the incumbent mail operator. They are a focal point for many communities.

United Kingdom snapshot

As the United Kingdom's universal postal provider, Royal Mail Group employs around 200 000 people with an annual turnover of just under £9 billion. The Royal Mail letters division delivers some 83 million items every working day to 27 million addresses at a uniform price in every part of the United Kingdom.

In the United Kingdom, Post Office Ltd. has a national network of some 15 000 branches, more than all bank offices put together. It provides unrivalled access to everyday products and essential government services in a convenient, familiar environment.

European Union legislative framework

Directive 97/67, as amended by 2002/39, sets out the regulatory framework for European Union postal services and includes safeguards for the universal service. The directive says that users must “enjoy the right to a universal service involving the permanent provision of a postal service of specified quality”. It goes on to say that this must also be at an affordable price.

Without being prescriptive, the directive sets down certain benchmarks for the universal service, which Member States must observe. However, as in the United Kingdom, Member States can go further if so desired. The key requirements that they must meet are:

- one collection and delivery every working day (at least five days a week);
- it must include postal items up to 2kgs and packages up to 10kgs;
- it includes both national and cross-border services.

These are minimum requirements, which all universal service postal operators have to meet.

MOVING FORWARD

To ensure competition throughout the European Union it is important that the third postal directive should fully open the postal market across the European Union by 2009 as envisaged in the current timetable (while recognizing that some of the new European Union Member States may need a longer timetable to adjust). All participants in the market must, however, be required to adhere to certain standards to ensure that customers (including citizens) continue to trust postal services. To ensure that the universal service can be financed and protected in a fully competitive market, the following will need to be implemented:

Clarify/tighten the definition of the universal service

The cornerstone of an effective postal service throughout the European Union is the universal postal service, which provides a crucial part of the commercial infrastructure needed to sustain economic growth. As liberalisation of postal services unfolds it is important that the confidence of all stakeholders in the sustainability and robustness of the universal service is maintained. However, in order to retain that confidence it is clear that the first urgent task is the *restating of the definition of universal service in terms that are relevant to the users of such services*.

Article 3 of the current directive refers to the universal service in terms of a process - for example, clearance, sorting, transport and distribution - rather than an actual set of services - for example next day delivery. This poses real difficulties for regulators, postal operators and users. The new directive provides an opportunity to overhaul the definition of the universal service to make an explicit link with the services that consumers actually receive and which they can then have absolute confidence in

being maintained. For example, a grandparent wanting to send a birthday card to his or her grandchild wants to be confident that it will be delivered by the promised date.

The new directive should make it clear that the universal service covers those products and services used by everyday consumers (namely, prepaid single items) rather than particular discount structures open to bulk business mailers. This is particularly important in those Member States where universal services are uniformly priced, in order to allow non-uniform cost-reflective pricing in bulk mail, which is the most contestable part of the market.

The Commission should do all that it can to encourage competitive efficient market entry in postal services, which means that those areas where it is permitted to have non-cost reflective cross-subsidies between users should be kept to an absolute minimum. Indeed, *it is important that bulk services which are used only by a small minority of customers, usually large businesses, should not be included within the universal service definition*, for to include them would be to extend unnecessary government regulation into the most contestable part of the market and thus inhibit competitive services.

Non-discriminatory access

Market liberalisation on its own is not sufficient unless steps are also taken to ensure fair and non-discriminatory access to postal facilities on a cross-border and domestic basis as envisaged by Paragraph 8(b)(vii) of the European Commission's Notice on the applicability of the European Union Competition Rules to the postal sector (98/C 39/02) and Articles 9 and 12 of the postal services directive (as amended). In the United Kingdom the regulator has interpreted and implemented these provisions as requiring that competitors and customers should be given access to Royal Mail's postal facilities at prices that are related to costs. To date Royal Mail has signed five such agreements in the United Kingdom, with parties including TNT and DHL (and it is worth noting that in their recent annual report TNT predicted that in the next year it would handle over 200 million letters in the United Kingdom through its downstream access agreement). Unfortunately, despite their activities in the United Kingdom, the attitude of companies such as TNT and DHL to open access to their own delivery networks to prices related to costs within their home territories continues to be hostile.

It is an open question the extent to which it would be economically efficient to build competing postal networks within a Member State. Evidence from other industries suggests that in many cases duplicating distribution networks is wasteful and not cost effective given the inherent economies of scale and scope that incumbent postal operators enjoy in their home territories, it is particularly important that competitors are given the choice between building alternative networks or accessing the incumbents inward sorting and delivery capacity. If competitors are not given this choice, it is possible that real competition will not develop.

Therefore there needs to be enshrined in any new postal services directive the right for competitors to choose to either build alternative networks or to access existing networks on a non-discriminatory basis at prices related to the costs.

Regulatory disparity in the European Union

Throughout the European Union there is in practice an enormous disparity between regulatory regimes for postal services. Even now the provisions of the postal services directive on independent regulation

have not been implemented in all Member States. More guidance by the European Commission is required on the proper role and obligations of national regulators for postal services in order for them to be recognised as independent and effective. In particular more transparency on the workings of postal services regulation needs to be encouraged.

In particular, substantial barriers to competitive entry can be created if an incumbent operator is allowed to continue to offer services below costs. Similarly, if an incumbent operator is required to maintain an unnecessarily high quality of service or higher levels of compensation than that which a competitive market would require, that can also tend to discourage the development of a competitive market. *The success of a liberalised market is dependent on early adoption of cost-reflective pricing by all public postal operators in the European Union.*

Terminal dues reform

Domestic mail tariffs within the European Union differ widely between the operators and are far removed from a cost of delivery model. The result is that consumers in particular have very little chance to use alternatives to the incumbent postal operator. The next directive must facilitate a cross-border mail remuneration system that more adequately and transparently reflects the true costs of delivery.

CONCLUSIONS

A vibrant, efficient, affordable postal service is vital for the European Union's economy and crucial to help it meet the ambitious targets set out in the Lisbon agenda for economic growth and jobs. At the heart of the postal service are the universal service obligations. These can flourish in a liberalised market, providing they evolve to meet changing market circumstances and do not impose onerous burdens on the providers.

THE POINT OF VIEW OF THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE ON THIS SUBJECT*

The EESC supported the objective of completing the single market for postal services while safeguarding the universal service in accordance with the postal directive.

Postal services have a central role to play in the Lisbon strategy. Postal services provided the sinews for the Old Economy from the Industrial Revolution onwards. They must now provide the nervous system for the New Economy. The postal sector, which offers a key communications infrastructure with high economic and social importance, needs to develop in parallel with the major changes taking place, otherwise it will be left behind and be seen to be dealing increasingly with the technology of yesterday.

The Committee is well aware that differences in the geographical and population density of Member States and other regions mean that the economics of the universal service will be constrained in different ways in each Member State. For these reasons it claimed for a liberalisation gradual and controlled.

On the other hand, the EESC was concerned about the potential abuse of any dominant market position. Accounting must be transparent and cross-subsidy avoided by any market participant.

The Committee recognised that liberalisation of postal services should proceed cautiously and that the long-term goal should be a single market in postal services taking into consideration the following aspects:

- the integrity, maintenance and continuing development of the universal service;
- employment considerations, in general, and for postal workers in particular;
- nature and scale of postal service involvement in the New Economy;
- resolution of the social issues attached to historic presence of post offices and postal workers in rural and sparsely populated areas.

The Committee particularly insisted that the priority should be to maintain and develop the universal service, bearing in mind the development of social and economic needs and technologies, and that postal services should make an active contribution to economic and social cohesion.

As the first public utility, the extent of the postal service activity in all regions of the Member States has created a presence of considerable political and social importance.

The presence of postmen and -women made an important contribution to social cohesion and community life for rural and sparsely populated areas, while local post offices could have a political and social importance far beyond the simple function of providing points of access to the postal system.

* Opinion of the European Economic and Social Committee, adopted on 29 November 2000, OJC 2001/116 p. 99.

The point of view of the European Economic and Social Committee on this subject*

In effect, the operation of the chain of retail outlets known as post offices became a business unit separate from the mail business. Post offices had, over time, become outlets for a whole range of government services, including savings banks, social security, licence issuance, *etc.*

In giving its support to the liberalisation of postal services, the Committee called the attention of the Commission, the Council and Parliament to these co-lateral social issues. It was vital to address them in parallel with the liberalisation of postal services.

The Committee was especially concerned by the conditions for the current generation of older people. There was concern about their ability to adapt to newer forms of electronic communication. There was also a great deal of sympathy for the comfort the elderly people receive from behaving in familiar ways. However, telecommunications provide a powerful alternative, especially for those for whom reading and writing has become difficult.

The EESC recognised that these adjustments need time. Therefore, it accepted the Commission's proposal that plans for the next stage of liberalisation should come forward in 2005, following a review of the impact of the measures implemented in 2003.

CHAPTER 7

POLICY CONCLUSIONS FROM PAPERS AND DISCUSSIONS

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The issues of economic analysis and policy at stake in the reform of network industries can be tackled by raising the following questions:

- What are the effects expected of the reform process as regards efficiency, quality and prices of the network services provided to final users?
- Are these expected effects subject to any specific limitations in each of the network industries considered here?
- What are the conditions for a successful ongoing process of reform?

Answers to these questions are given in overview tables below. According to the analysis of Chapter 1 these tables' structure shows the distinction in network industries between upstream, infrastructure and downstream activities.

1. ELECTRICITY

The vertical structure of the electricity sector is made up of the following levels:

- Upstream level: the generation of electricity.
- Infrastructure level: the infrastructure is separated into two sub-levels, namely the transmission, *i.e.* high voltage transport network¹ operated by a Transport System Operator (TSO) and the distribution, *i.e.* medium-low voltage transport networks operated by Distribution System Operators (DSO).
- Downstream level: the supply and sales of electricity to the final user.

The sector is therefore divided into four segments: production, transmission, distribution and supply.

1. or grid.

This sector is also complex owing to four characteristics of electricity as a product:

- Electricity demand is variable in the course of time.
- Electricity is a non-storable product, in contrast to gas.
- The network must be kept under constant tension.
- Price elasticity of electricity demand is low.

These four features have far-reaching consequences on the functioning of the market and on regulation. In view of these specificities, the networks must indeed be well connected at international level, the production of power stations and the TSO must be perfectly coordinated and the production capacity in particular must be sufficient to meet peak demands, *i.e.* a reserve production capacity is necessary. One difficulty is that the reform is based on the vertical 'unbundling' between the stages of the electricity sector.

Another basic principle of the reform is the opening to competition of some stages. The stages of production and supply can be open to competition provided that all users of transmission and distribution grids, *i.e.* all producers and suppliers of electricity have non-discriminatory access to the grids; this is the Third Party Access (TPA). The stage related to infrastructure is bound to stay as a so-called natural monopoly, *i.e.* there is room for only one firm to operate in each network because the duplication of the network is inefficient. The functioning of a liberalised pan-European electricity market also rests upon the 'copper plate' model where every producer can inject power at every point of the network and every supplier can extract power.

In view of the complexity of the sector, general conclusions are presented prior to specific conclusions on each of the four segments.

1.1. ELECTRICITY: GENERAL CONCLUSIONS AT EUROPEAN UNION LEVEL

- Deregulation based on the competition between the highest possible number of market players on every national market is not a guarantee for a fall in costs and in prices for the consumer.
- The reform of the electricity sector must also make room for appropriate incentives in order to guarantee a reserve capacity in the long run.
- Virtual Power Plants (VPP), *i.e.* the auctioning of the incumbent's producer capacity, are important in order to bring about a level playing field between suppliers without generation capacities and suppliers vertically integrated with a producer.
- The deepening of the single energy market rests upon the copper plate model where international transit flows will increase, thereby requiring additional transport capacity or better management of existing transport capacity. In that respect, interconnection capacities between Member States are either insufficient or inefficiently allocated.
- When regulatory authorities impose price caps, they should set them with great caution because final customer tariffs which are set – especially in periods of rising prices – below a market

based benchmark, specifically the sum of wholesale prices and of tariffs for access to the network, will squeeze out or keep away suppliers which lack local generation capacity.

- A comparison of electricity prices between countries and over time has to take several factors into account: the stranded costs, the degree of use of the generation capacity, which fluctuates according to the season and to intra-day peaks and off-peaks, and the prices of energy inputs. Therefore, the question is not so much if there has been a decrease in the average retail price per kWh, but rather if this average retail price would have been higher or lower if the reforms had not been undertaken.
- The time-series on electricity prices have to be interpreted carefully for two reasons: (i) There are still uncertainties on indirect costs of reforms, such as the cost of unbundling and possible transaction costs due to the growing number of intermediaries, for example agencies and brokers providing information to enable final consumers to compare competing suppliers' prices and services or salesmen advertising the services of new suppliers to eligible buyers. (ii) A rise in the average price of electricity is to be expected in these countries with a high energy dependency due to exit from nuclear technology and rising fuel prices, and furthermore to the Kyoto targets which imply reliance on renewable energy sources at a higher marginal cost.
- Universal services and services of general interest must be taken into account. Recent disruptions of power, as measured by the duration of power cuts, is however not necessarily related to the ongoing extensive reforms in some countries but may also have a geographic reason, the cuts being shorter in centrally located Member States such as France, Belgium, the Netherlands or Germany.
- Whatever their current drawbacks or benefits may be, the reforms under way take time to show effect and, as the Belgian Minister Verwilghen put it at the beginning of the afternoon session on the first day of the colloquium, the European Commission should give Member States time to experiment with the working of the new regulation.
- It is necessary to carry out further research, e.g. economic analysis of the upstream electric markets should be done in order to examine if liberalisation does not lead to excessive downward pressure on producers' margins and to excessive wholesale price volatility, thereby putting at risk the productive efficiency and the safety of supply in the long run.

1.2. GENERAL CONCLUSIONS FOR ELECTRICITY: POLICY ISSUES FOR BELGIUM

- Features of the product electricity may cause major fluctuations of spot prices, especially if the market is narrow as is the case with the Belgian market at European Union level; it was hence a good decision to have linked the nascent Belgian power exchange with the French and Dutch power exchanges.
- Taking unbundling further is advisable and is still under way in Belgium along the lines of the European Union directive. As regards transmission, unbundling has taken place by lowering to 27.5% the incumbent operator's share in the TSO equities and by means of corporate governance rules. As regards distribution, networks are owned either exclusively by municipalities or jointly by municipalities and Electrabel (the Belgian electricity incumbent – *editorial note*). Negotiations to reduce drastically Electrabel's share in these networks in the

Flemish Region have almost been completed and the total withdrawal of Electrabel is already agreed in the Brussels Capital area.

- The downward vertical integration of Electrabel into the retail market through its subsidiary Electrabel Customer Solutions (ECS) is justified by the need to reduce uncertainty as to future investments in generation capacity. ECS was also allowed to act as default supplier and it is good that this default supplier remains subject to scrutiny from the Belgian competition authorities.
- However, vertical integration between generation and retail may reduce liquidity of wholesale markets and increase price volatility; this may give incentives for further vertical integration and, as suggested in the analysis of Swinand *et al.* (see Chapter 5), may discourage entry.
- The issue of level playing field between the historical operator and suppliers that do not possess their own generation capacity has been dealt with by obliging the historical operator to put generation capacities amounting to 1200MW at the disposal of competitors, *inter alia* through VPPs. The historical operator is also committed to selling pieces of land where a generation capacity of 1500MW can be built.
- These VPPs raise the question of the 'reserve price', *i.e.* the minimum price which the historical operator has to accept to auction production capacities: does such a reserve price refer to some cost benchmark like the incumbent's own long-run marginal cost or to some wholesale price?
- Investments in the network – though less problematic than in production capacities – may be needed in order to prevent congestion. In this respect, provisions in the new law² allow specific eligible costs as an incentive for investments of capacity expansions of the transport network that are of "national or European relevance"³. As regards cross-border interconnection capacities, bottlenecks at the French border seem to have been overcome since the recent interconnection capacity expansion and the recent auctioning - from January 2006 onwards - of cross-border capacities. This problem seems to have moved over to the Dutch border.

2. Electricity Act of 1 June 2005.

3. Article 12, *novies*.

1.3. ELECTRICITY: SPECIFIC CONCLUSIONS

Finally, specific conclusions are reviewed for each of the four segments of the electricity sector.

Table 1 - Overview table for electricity: production

Stage of the production chain	Expected impact of reform	Specific limitations	Conditions for success
Production (about 35% of the value chain) EUROPEAN UNION	Higher efficiency (cost decreases) due to direct competition between power suppliers. Lower wholesale prices due to liquid power exchange markets and, more fundamentally, through direct supply contact with eligible consumers.	Power plants chosen on purely economic grounds (as opposed, for example, to geographic proximity between consumer and power plant). Difficult to assess the cost of reserve capacity: total average cost of building and maintaining a unit of reserve capacity or marginal cost of production?	Transport System Operator must not discriminate against third parties (no physical access constraint, no discrimination in access prices). Prices transparent and adapted to demand fluctuations (peak/off-peak tariffs, etc.) as well as to the absorption of fixed costs (e.g. capital costs). Sufficient reserve in generation capacity and incentives for investment through market signals.
Production BELGIUM	High cost efficiency of Electrabel at the beginning of liberalisation (as of 1999) so that cost-cutting potential is smaller than European average. Power exchange market to be operational in 2 nd quarter of 2006 (BELPEX).	Issue regarding VPP (auction of capacity) by Electrabel: required amount of capacity (1200 MW) available for competitors on the Belgian market until end 2008 may already be reached so that no further auction will happen.	Far-reaching unbundling between Electrabel and TSO (Elia) and DSOs. General provisions on investment incentives in Electricity Act (1 June 2005) are to be effective.

1.3.1. SPECIFIC CONCLUSIONS FOR ELECTRICITY: PRODUCTION

A reserve production capacity is necessary to meet peak demand, to secure electricity supply and to avoid the volatility of wholesale prices. Hernández Bataller's contribution to the colloquium (see Chapter 5) calls for measures - aimed at ensuring the security of supply in the electricity sector - that should be taken at the level of both the Member States and the Community legislative framework. His contribution mentions specifically the proposal for a directive of the European Commission to the European Parliament concerning measures to safeguard security of electricity supply and infrastructure investment in the European energy sector to strengthen both competition and help prevent the recurrence of blackouts.

However, electricity poses a dilemma between the constitution of these necessary reserve capacities and the remuneration of the investment: the availability of such reserve capacities could indeed lead to a fall of prices making these investments less attractive while, in the absence of reserve capacities, there is a risk of price increase. This is a reason why it is often said that liberalisation has been a cause of the volatility of wholesale electricity prices since 2000. Volatility in wholesale prices may in turn increase uncertainty and, as suggested in the analysis of Swinand *et al.* (Chapter 5) for the case of Belgium, may undermine investments in new production capacity especially for new entrants, so that horizontal concentration might stay at a high level. This stresses the importance of the auction of some of the historical operator's generation capacities through VPPs.

In this respect, a favourable condition for investments is the reduction of the uncertainty concerning future incomes on the segment of the generation by maintaining a significant share of the residential customers - known to be more stable than industrial customers - on their national market, for the sake of big electricity producers. As a matter of fact, the strategy of some major electricity producers is to focus on coupling 'production' and supply to 'retail'. As noted above, vertical integration between generation and retail has drawbacks as it may further reduce liquidity of wholesale markets.

If all those risks of volatility and barriers to entry materialise, it may result in a combination of high horizontal and vertical concentration. The planned take-over of Suez-Electrabel by Gaz de France will also result in such a high concentration.

Table 2 - Overview table for electricity transmission (high-voltage transport)

Stage of the production chain	Expected impact of reform	Specific limitations	Conditions for success
Transmission: High-voltage transport (about 15% of the value chain) (Transport System Operator = TSO) EUROPEAN UNION	Stability and Transparency of the access price through regulation of TSO's eligible costs. Higher productivity through incentives designed/approved by regulator.	Dealing with bottlenecks of the network on both interregional and international level. Public service obligations (reliability regarding the transportation of electricity, etc.).	Implementation of a scheme for eligible costs of the network (e.g. issue of stranded costs). Tariffs independent from demand fluctuations (fixed costs except for energy loss and some ancillary services e.g. compensation KVAR). Long – term investment planning. Effectiveness and independence of the regulator.
Transmission: High-voltage transport BELGIUM	Provisions in the new law (Electricity Act of 1/06/2005 (Art. 12b) on: (i) transparent and non-discriminatory tariffs; (ii) tariffs aligned with international best practices of foreign TSOs; (iii) tariffs supporting the balanced development of the network. Increased productivity (figures in Chapter 1, § 3.2.1.).	Price differential between the Netherlands and Belgium possibly due to lack of capacity of the interconnector. The interconnector's capacity between France and Belgium recently expanded. Capacity now allocated through auctions (beginning of 2006). Geographic uniform tariff (Electricity Act, Art. 12b, 7°).	Eligible costs include depreciation allowances and return on investment (Art. 12 (2)) General provisions in Electricity Act on tariffs supporting the optimal utilisation of transport capacity (Art. 12a) Electricity Act requires a ten-year development plan of the network by TSO with Belgian Federal Planning Bureau (Art. 13,(1)) Independence and effective power of the federal regulator (CREG)

1.3.2. SPECIFIC CONCLUSIONS FOR ELECTRICITY: TRANSMISSION

In the framework of the TPA, the non-discriminatory access of all producers to the transmission grids should be provided at the European level so that issues for electricity transmission would be beyond the scope of the Member States' national market. However, as long as the pan-European copper plate model does not materialise, the level of domestic, *i.e.* national, concentration of electricity production is still relevant in the competitive analysis of the generation stage of the sector.

In the case of shortage of the electricity transport and distribution network capacity, investments in new generation capacities may be discouraged. Planning the development of the network⁴ is therefore essential. This bottleneck risk at the level of the network may be increased by the reform. Vertical dissociation indeed breaks the link between network and power plants management. Unbundling loosens the link between physical electricity flows and trade contracts concluded between producers and consumers⁵. This fact makes the co-ordination between production and consumption of physical flows more difficult. The ongoing reforms - TPA, 'copper plate' model, single energy market - also tend to increase international transit flows. This might lead to a suboptimal pattern of electricity transport and distribution flows that might cause congestions in addition to these resulting from the physical limits of existing networks.

In this respect, the main bottlenecks stem from the interconnection capacities between Member States that are insufficient or not properly managed.

As regards the main policy issues, the question is to know if the technical under-optimisation can be compensated by the increased economical efficiency possibly brought about by the reforms and the competition policy.

4. Especially high voltage.

5. See column "specific limitations" in the table on production: "Power plants chosen on purely economic grounds as opposed, for example, to geographic proximity between consumer and power plant".

Table 3 - Overview table for electricity: distribution

Stages of the production chain	Expected impact of reform	Specific limitations	Conditions for success
Distribution: transport medium-low voltage (distribution and supply make up the remaining 50% of the value chain) (Distribution System Operator=DSO) EUROPEAN UNION	Unbundling of distribution and of commercial part (Supplies; see below). Stable and transparent tariffs through regulation of DSOs. Higher productivity through: (i) incentives for investment (prices) and operations (costs); (ii) indirect competition (tender for temporary concessions of the local networks).	Public service obligations (reliability, development of the network, services, etc.). Distribution tariffs based on peak power deliveries (kW, kVA) and energy losses (kWh, kVAh). Transparency of the auction process for concessions. Effectiveness and independence of the regulator.	Implementation of a comprehensive scheme of eligible costs (physical distribution). Distribution tariffs based on peak power deliveries (kW, kVA) and energy losses (kWh, kVAh). Transparency of the auction process for concessions. Effectiveness and independence of the regulator.
Distribution: transport medium-low voltage BELGIUM	Tariffs are published by regulator but still controversies (between regulator and new suppliers) about international comparisons. Recent decrease in tariffs (January 2005) but partly counteracted by Eila tax. Increased productivity (figures in Chapter 1, § 3.2.1).	DSO is supplier of last resort. General obligation to supply all customers, social tariffs, solutions offered to vulnerable customers.	Clarification about past investment as eligible (or stranded) costs of DSOs. Tariffs for at least 3 consumption patterns (in Flanders Region). Independence and effective power of the federal regulator.

1.3.3. SPECIFIC CONCLUSIONS FOR ELECTRICITY: DISTRIBUTION

As for the high voltage transmission network, additional costs will be due to investments required by the development of 'decentralised' generating units connected to the distribution network: small cogeneration units, industrial or independent electricity producers, some renewable power production units.

The reforms may also go along with distribution tariffs that are more oriented towards costs and are therefore no longer geographically uniform. A rise in tariffs may be expected in less densely populated and more remote areas.

Distribution also raises an issue of regulatory uncertainty because different national markets still diverge regarding the organisation of distribution and supply. In the eyes of market players, such a divergence might create uncertainty concerning the future structure of the markets.

The distribution system operators have in the vast majority of Member States responsibilities regarding services of general interest and universal services. Energy network industries typically provide 'Services of General Economic Interest' (SGEI) and according to the Commission's White Paper on services of general interest⁶, Member States have the possibility to impose on electricity utilities public service obligations. Universal Service Obligation (USO) is defined according to the second directive on electricity as the "right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable prices". The supplier of last resort is a fall-back position to protect consumers in case of, for example, supply of vulnerable customers unable to pay. The supplier of last resort is most often the distribution system operator.

6. Com (2004) 374 final.

Table 4 - Overview table for electricity: supply

Stages of the production chain	Expected impact of reform	Specific limitations	Conditions for success
Supply to eligible buyers EUROPEAN UNION	Effective competition through: (i) direct sales from producers to large commercial users; (ii) sales on spot market for marginal adjustment; (iii) indirect sales via traders.	Implementation of market operators (<i>inter alia</i> spot markets). Information made available for the regulator. Information about customers should be available to new entrants.	Market must be transparent and atomistic. Reserve capacity must be adequately financed (tariff). Tariffs adapted to demand fluctuations (at least binary). Power losses must be included in tariffs.
Supply to eligible buyers BELGIUM (for small users: only Flanders)	Electrabel is standard supplier of small eligible buyers through ECS. Low switching costs and easy renegotiations with standard supplier.	BELPEX day-ahead market with hourly clearing prices starts in 2 nd quarter of 2006. Chinese walls between DSO and Electrabel (as supplier) <i>inter alia</i> to make information on customers available to entrants.	Chinese walls between DSO and Electrabel as supplier are closely monitored but must be complied with.
Supply to non eligible buyers EUROPEAN UNION	Increased productivity and lower prices through competition between retail suppliers.	Financial robustness of the suppliers.	Retail market must be transparent. Competition policy towards abuse of dominant position. Tariffs adapted to demand fluctuations (at least binary).
Supply to non eligible buyers BELGIUM (small users in Brussels and Wallonia)	Competition between retail suppliers is still very limited.	Some new entrants without local generation capacity+ EDF +vertical concentration between SPE and <i>inter alia</i> Luminus by GDF and Centrica.	Divergence of tariffs between small eligible users (Flanders) and non eligible ones (Wallonia, Brussels) is growing.

1.3.4. SPECIFIC CONCLUSIONS FOR ELECTRICITY: SUPPLY

There is an issue of level playing field between independent suppliers that do not have their own generation capacity and have to rely on the wholesale markets on the one hand, and the suppliers integrated with an electricity producer on the other hand. This is especially so when the wholesale price increases above the long-run marginal cost of production. Regulatory and competition authorities face therefore a difficult choice: favouring the entry and survival of new players on the retail market leads them to support high-cost suppliers. This stresses the importance of Virtual Power Plants (VPP), where the reservation price, *i.e.* the minimum price at which the historical operator has to accept to sell production capacities, would be close to the long run marginal cost of production.

The entry or survival of new competitors on the supply market can be further discouraged by a combination of volatile and rising wholesale prices with low retail prices, which may be due not only to the incumbents' strategic pricing, *i.e.* setting their price at such a low level that it will keep away potential entrants, but also to authorities in charge of setting customer tariffs: if they impose price caps, *i.e.* ceilings on the tariffs for final users, which are too low in relation to wholesale prices and network costs, these price caps will also have the effect of keeping away or squeezing out high-cost suppliers, *e.g.* suppliers without generation capacity. The regulators may also be a cause of uncertainty if they behave asymmetrically, *i.e.* imposing price caps in the case of price increases but undertaking no regulatory action in the case of falling prices. Therefore, regulatory authorities should handle price caps with great caution.

Favouring the entry and survival of new players on the retail market might also lead to a growing number of 'intermediaries' and therefore to high transaction costs; furthermore, advantages from supplying final users on a large scale might be lost.

Table 5 - Overview table: railways

Segments of the production chain	Expected impact of reform	Specific limitations	Conditions for success
Infrastructure EUROPEAN UNION	Access rights for licensed railway undertakings for international freight services since 2003 and to the entire European rail network as of 1 January 2006. In 2007 the market will be opened up for all freight services. International passenger services might be opened up in 2010 and domestic passenger service in 2012-2015.	The Union has a patchwork of different rail systems that are not interoperable.	Enhance network interoperability. Develop a common approach to rail safety.
Infrastructure BELGIUM	Belgium opens the rail network to third parties hereby following the EU directives. Belgium does not intend to open up markets earlier than foreseen by European Union.	Public service obligations.	Coordination between infrastructure operator (Infrabel) and operators (NMBS/SNCB,...). Long term coordination between infrastructure investments and services. Non-discriminatory entry to the network.
Operations EUROPEAN UNION	18.5 % of all freight land transport modes should be performed by rail in 2010. 6.8% of passenger traffic should be performed by rail in 2010.	Public service obligations.	Opening of the internal market.
Operations BELGIUM	Increase of passenger traffic over the periods 2000-2006 and 2006-2012. Increase of the market share of freight transport by rail. Higher efficiency Better consumer orientation. Decrease of indebtedness (and subsidies).	Public service obligations.	Low barriers to entry. Non-discriminatory entry to the network.

2. RAILWAYS

Traditionally, railways have been organised nationally as state monopolies responsible for both infrastructure and services, but recent years have seen a move away from this model. A key motivation for initiating reforms of the rail sector in Europe was often a perceived lack of customer orientation and the cost inefficiencies due to a lack of competitive pressure. The liberalisation of Europe's railways was initiated politically by Directive 91/440⁷ of the European Commission. The extent and form of deregulation however varies among the countries in Europe with some countries having progressed significantly such as Sweden, Great Britain and Germany, while other countries have only put forward limited deregulation initiatives (Ireland), Belgium is in the middle of these two groups.

In conformity with the directive on unbundling railway services, Belgium has changed the structure of the incumbent (NMBS/SNCB). Since January 2005, in accordance with German practice, the framework in Belgium consists of a holding company, called NMBS/SNCB-holding and two public limited companies: the railway infrastructure manager, Infrabel, and the railway operator, NMBS/SNCB. A large part of the debt of the old NMBS/SNCB was taken over by the government by means of a fund for railway infrastructure. Although the Belgian government took some measures to guarantee the independence of the infrastructure manager, care should be taken with regard to discrimination against third-party operators, as was the case in Germany.

The Belgian competition authorities and the Belgian government should ensure that the conditions for entering the market are acceptable and that NMBS/SNCB (the operator) does not abuse its market dominance. The Belgian railway market represents an attractive opportunity; especially for railway undertakings from neighbouring countries. Therefore, the Belgian government in coordination with the European Rail Agency should enhance interoperability. The threat of or effective access by foreign railway operators on the Belgian market could improve the efficiency of the railway operators in Belgium.

The literature shows that reforms may help to improve the companies' indices of efficiency and productivity. At the same time, mechanisms must, however, be introduced to minimise problems or costs caused by these reforms. The bankruptcy in 2002 of Britain's rail infrastructure manager, Railtrack, shows the need for a clear market structure with good coordination between infrastructure operator and railway operators. In order to prevent underinvestments, there is also a need for durable coordination between infrastructure investments and services.

In view of the problems of the reforms in Great Britain, where a number of reforms were introduced at the same time, it seems that, instead of a 'big bang' revolution, a more gradual approach of the market reforms would be preferable.

The experiences of Sweden and Great Britain teach us that subsidies for public service obligations can decrease. In Sweden, this is achieved by tendering unprofitable lines under lower subsidy criteria. The literature also shows that State aid has a positive impact on efficiency levels, but aid intensity – defined as aid divided by total operating cost – has a negative impact. Therefore, State aid must be complemented with other means of finance to be effective. Furthermore, in countries with lower aid

7. 29 July 1991.

intensity, aid triggers more investment than in countries with higher aid intensity – highlighting the linkage between aid, investment and efficiency. The potential of state aid to trigger investment is, therefore, crucial for effectiveness of an aid scheme.

Many people believe that safety has deteriorated on privatised railways (e.g. in Great Britain). Railway accident data do not support the contention that rail reforms have made the railways less safe.

After reforms most countries introduced a more commercial pricing structure instead of fares directly related to distance, price became dependent on ticket conditions and on the advance booking period. This resulted in price increases in Germany and Sweden. In Sweden this was outweighed by higher service frequencies and lower travel times. In Great Britain most operators have either frozen fares or kept the increases very low.

It should be mentioned that the analysed effects of the market reforms are short-term effects, so far nothing is known about the effects in the long term. Moreover, when analysing the effects of the market reforms account should be taken of the different visions in transport policy of the different countries.

Based on the literature, we assume that the effects of the reforms in Belgium can be positive. The Belgian government should avoid barriers to entry and take care that NMBS/SNCB does not abuse its market power. In order to avoid discrimination against third-party operators, as was the case in Germany, the Belgian government should guarantee the independence of the infrastructure manager. Although the opening of the railway market earlier than foreseen in the European Union directives can have a positive effect on efficiency and productivity, we think a more gradual approach - following the time line of the Commission - is more appropriate.

Table 6 - Overview table: postal services

Segments of the production chain	Expected impact of reform	Specific limitations	Conditions for success
<p>Integrated chain: collection transport sorting distribution</p> <p>EUROPEAN UNION</p>	<p>Competitiveness in overall communications sector. Higher productivity, better quality and cost-related prices. Concentrated though contestable market; win-win situation: competitive conduct and economies of scale being realised.</p>	<p>Universal service obligations. Economies of scale in delivery and among various postal products. Substitution in a broad communications market.</p>	<p>Non-discriminatory entry to the network Level playing field for public and private operators. Other low barriers to entry, such as incumbent strategy or regulatory barriers.</p>
<p>Integrated chain: BELGIUM</p>	<p>Postal incumbent is modernising its production chain, thereby increasing productivity and competitiveness. Quality-related prices with differentiation between overnight and non-priority mail; no information on bulk prices.</p>	<p>USO defined in quinquennial management contracts, and compensated for by government. Moderate number of postal items per capita, but high population density. Incumbent operates an integrated overnight production chain.</p>	<p>No provisions on network entry yet Postal incumbent is 50%+1 state owned. Incumbent is modernising its operations and creating more customer goodwill.</p>

3. POSTAL SERVICES

The postal sector is not a market per se, but forms part of the wider communications market. Its share in this booming market is diminishing, as reflected by the fact that postal volumes are, in practice, stable or on the decrease. It is also characterised by the economies of scale that exist in the last section of the production chain, *i.e.* the distribution of post to recipients. Economies of scale can be found when the production chain is operated in its entirety, and between the different postal services, which are rendered simultaneously in the chain. Lastly, the majority of postal items are sent domestically.

Belgium's postal market has some distinguishing features, as it is established in a small country with a very high population density. The number of postal items sent per inhabitant is neither high nor low, but is fairly close to the European average. The national company (De Post/La Poste) is undergoing extensive modernisation, with, for example, the construction of a brand new network of computerised sorting centres. The Danish national postal service recently acquired shares in De Post/La Poste, but the Belgian authorities have kept a majority stake of 50%+1. This strategic operation with the Danish postal service is expected to bring added support to De Post/La Poste's modernisation initiative, and to boost its competitiveness in the European postal market.

As regards the reform of the postal market, Belgium is lagging behind countries such as Sweden, the Netherlands, Germany and the United Kingdom. The experience of these and other countries, together with scientific studies, have shown that although the market has opened up it is likely to remain highly concentrated. Market entry is most likely to occur in areas where the number of postal items sent per person is so high that economies of scale are not applicable. The threat of entry leads to greater efficiency, higher quality and more cost-oriented prices. Redundancies are a negative consequence that must be resolved in social terms. The opening of the market can even generate innovation and globalisation opportunities for postal service companies, which may implement expansion and diversification strategies in order to resist the potential decline of traditional postal services. Nevertheless, the impact of the reforms depends largely on the initial situation of each country and on factors specific to them.

As well as redundancies, another feared negative consequence of the reform is that the notion of universal service will be rendered meaningless. Universal service could be drawn into a downward spiral by the arrival of new competitors in profitable sectors which served to finance the (loss-making) universal service.

However, it seems that the efficiency of postal firms and the quantity of postal items sent per inhabitant has a much greater influence on the financeability of universal service. One example in this context is Sweden, which performs well in these two areas. Since the early 1990s, the national postal service has been providing universal service without subsidies, in a market open to competition.

The obligation to operate a network covering the entire country even brings competitive advantages to universal service providers. The risk for universal service lies more in the slow erosion of volumes resulting from substitutions on the communications market.

As regards the policy of public authorities towards the postal sector, the following conclusions can be drawn from the analyses made:

- Unlike other network industries there should not necessarily be a vertical separation of the production chain.
- The measures taken in many countries to close post offices and transfer services to certain shops, for example, appear to boost efficiency.
- The imposition of maximum prices can also increase efficiency, as long as care is taken not to set these maximum prices too low.
- If the costs of the universal service are not covered, a tendering procedure would appear to be better for efficiency than granting subsidies or setting up a compensation fund.
- In countries where little mail is sent per inhabitant, a monopoly could continue to exist, but this does not mean that measures to promote efficiency should not be implemented.

In the context of a next European directive, greater attention should be paid to non-discriminatory access to the national postal network, a better definition of universal service, harmonised rules, quality criteria and rates, and cooperation between the postal regulators and the national competition authorities.

In Belgium, there are some specific risks that should be carefully monitored by the government. De Post/La Poste is a majority state holding, and this could prevent a truly level playing field from being established for potential newcomers. Universal service is financed through direct subsidies. As mentioned above, it is possible that this may prevent efficiency from being sufficiently improved. It is likely that a dominant position will persist. It is essential to ensure that this position is not abused. Price control does exist, and if this control is too lax, then it could impact negatively on efficiency; on the other hand, if it is too strict, then there could be a negative impact on cash flow and future investments. The situation therefore requires a well thought-out and carefully implemented policy, as at European level.