

Creating competition & mastering markets

New entrants, monopolists, and regulators in transforming public utilities across the Atlantic

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Abstract	<p>This paper is on the transformation of network industries or public utilities in Western Europe and the United States (US). A network industry provides a public or basic service by operating a large infrastructure system whose main characteristics are strongly increasing returns to scale, high levels of capital intensity, deployment of long-lasting industrial assets, and of vital importance to the economy (e.g. telecommunication, energy, transportation systems, water distribution, postal services, broadcasting). The objective of this paper is to look at the transformation of utility markets and to investigate whether the (re-)engineering of utility markets has effectively produced new industrial structures and has generated alternative outcomes. And secondly, whether this deliberate process to stir up the competitive dynamic is thwarted by the combination of industrial predation (e.g. legacy systems and installed customer base) and incumbency power (market leadership, closeness to government, cross-subsidisation, information monopoly) favouring only modest and gradual change or by emergent and unexpected radical forces that have surprised both the omniscient market makers and those favouring the status quo.</p> <p>Introducing deregulation and liberalisation and engineering market dynamics in a utility world that is still characterised by partial competition and a persistent quasi-monopoly, is no easy matter. The process of de-monopolisation can be seen as the result of ongoing strategic and tactical interactions among incumbent operators and insurgent market players, tough bargaining between those firms and supervisory regulators, and difficult negotiations at the federal level of Washington and Brussels between the state administrations, their regulators and the transnational institutions. In order to create some form of dynamic rivalry in those 'monopolistic' network-based industries, the emergence of new entry/exit and competition needs to be nourished and closely monitored and supervised: the emergence and persistence of competition needs to be engineered. The concept of engineering competition is somewhat ambiguous, since we should be both aware of the shortcomings of designing and managing markets and the limitations on and problems with self-organisation in regulation. Competition is a spontaneous process and is in the domain of human action, while 'regulation' is a product of human design and contains instruments and toolboxes to intervene in a dynamic environment, and those two should not be mixed. Hence, despite the popularity of the term engineering competition, 'engineering regulation', with a clear and intentional focus on devising an appropriate framework facilitating competition, is probably a better term.</p>
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Introduction¹

This paper is on the transformation of network industries or public utilities in Western Europe and the United States (US). A network industry provides a public or basic service by operating a large infrastructure system whose main characteristics are strongly increasing returns to scale, high levels of capital intensity, deployment of long-lasting industrial assets, and of vital importance to the economy. Examples are telecommunication, energy, transportation systems, water distribution, postal services, and broadcasting. Most of these network-based sectors were until recently a ‘natural monopoly’: economies of scale so large that competition is not viable. In the past public utilities were mainly organised through regulated franchisees and state enterprises. In return for such a privileged position (i.e. no or low levels of competition), those utilities were subjected to some form of direct or indirect government control: subject to economic regulation (e.g. prices/profit controls, entry & exit conditions) and social regulation (e.g. universal and continuous service provision), or more radical, integrated into the government administration.

From the 1980s of Ronald Reagan, Milton Friedman and Margaret Thatcher onwards, command & control governance became replaced by *laissez-faire*. For the government authorities in Europe and the regulators and regulatees in the US, the emphasis shifted from designing and running a monopoly to developing and making markets and to engineer and monitor competition. Alongside a former publicly-owned or regulated monopolist, entry and competition was now allowed (or even encouraged) in the domain of public utilities. While Europe saw a major shift from public to private ownership and the emergence of independent regulatory agencies over the last two decades, the US, with already a framework in place based on private ownership and regulation for more than 50 years, re-examined its practices, procedures and outcomes, and streamlined them through deregulation and new regulatory reform programmes.

Over the last two decades several national governments have embarked upon deregulating, liberalising and privatising their utility sectors (Derthick & Quirk, 1985; Helm & Jenkinson, 1998; Parker, 1998). The key concept in this respect is *regulation*. There are different forms of regulation (Reagan 1987): from self-regulation through self-imposed codes of conduct for a

¹ This paper draws upon the introduction of Emiel Wubben & Willem Hulsink (eds)(in press), *On Creating*

specific industry or profession to externally imposed regulation whereby public organisations have legitimate coercive responsibilities in regulatory policy making. Two variations of externally imposed regulation may be discerned: public monopoly ownership and public regulation. The first form works through direct public intervention whereby a state enterprise has the exclusive responsibility for the provision of particular services. Here the government controls the operational and strategic activities of the state enterprise, such as capital allocations, investment plans, pricing and personnel policy. Public ownership could also be conceived as a means of dealing with other market imperfections (national security, universal service provision, industrial innovation and adjustment, regional development etc.). The second form works through administrative agencies that enjoy a considerable degree of independence from the industry and government in regulating a particular market. Public regulation refers to a package of legislative and administrative controls designed to structure and alter politically the operation of particular markets through an independent regulatory authority, while leaving private property intact. The role of such a regulator is restricted to that of referee in charge of general oversight and legal enforcement, reflecting a more judicial relationship between the state and the private sector.

Deregulation refers to an abolition or streamlining of government rules and legal provisions and hence, to an increasing reliance on market forces and self regulation. In other words, it entails the process of reducing state control over an industry or activity so as to make it structurally more responsive to market forces (Baldwin & Cave, 1999). Freedom of action within a market can be greatly enhanced (e.g. with a loosening of profit and pricing caps), restrictions in a firm's freedom of entry into a particular market can be eliminated, and particular governmental objectives (e.g. securing minimum quality of service levels) are no longer realised by the government but through voluntary and joint activities by the sector. The reasons for initiating deregulation programmes can be found in complaints from industry experts about administrative burden and intrusive red tape imposed by government, sunk costs and inefficiencies, and allegations of regulatory capture (the agencies are captured by those they are meant to regulate). For example, between 1938 and 1978, the Civil Aeronautics Board (CAB), granted with the exclusive regulatory authority over interstate air transportation, had never permitted another trunk airline to enter the market and had effectively prohibited price competition. After the 1978 Airlines Deregulation Act was

passed, the previously sheltered American carriers were given almost complete freedom to set prices and easier access to new routes. Southwest Airlines and other new low-fare entrants furthermore contributed to the emergence of strong competition. The ultimate accomplishment in US airline deregulation was the abolition of the Civil Aeronautics Board (CAB) in 1984 and the transfer of its ongoing responsibilities for antitrust and international regulatory matters to the Department of Transportation.

Liberalisation refers to the process of opening up state-controlled monopolies and transforming them into (more) open markets. Public services that were originally provided by a government entity or an exclusive franchisee are now contracted out to private firms (i.e. competition for the market). Access to previously sheltered markets is now partly or completely open for domestic and international private sector participation, and facilities-based and /or service competition has emerged (i.e. competition on the market). For instance, the telecommunications markets in North America and Western Europe were gradually liberalised over a longer time span (5-15 years), generally starting with the market for terminal equipment, followed by value-added services and mobile telephony, and eventually completed by opening up voice telephony and public network provision to competition.

Privatisation refers to the idea and practice of the transfer of productive assets from public ownership and control into private ownership through either public offering, management buy-out or traded sale (Veljanovski, 1989). In addition to the fiscal objective to use the receipts from the sale of public assets to reduce the government's debt, and the financial objective to open up the capital markets for companies, the decision to privatise has often been motivated by a desire to improve the management of public corporations by stimulating efficiency, innovation and customer responsiveness. It often implies a change in the legal form (from public to civil law), a replacement of senior management and a drastic corporate reorganisation. The utilities are transformed from departmental administrations to state-controlled or state-regulated corporations and granted access to capital markets and allowed to develop more flexible personnel policies. Especially in Western Europe, privatisation is often carried out in two subsequent stages, namely corporatisation and the sale of equity to the private sector. First of all, state-owned enterprises are re-organised according to private company law and incorporated outside their ministry. Although put at arm's length, the privatised company still has direct linkages with the government, that more often than not

remains the key shareholder in the new situation. This process of corporatisation normally entails a restructuring of the company (e.g. better costing methods and cutting back on cross-subsidies, more transparent corporate governance structures, greater marketing effort) to prepare for competition and the next stage in the privatisation process. In the second stage the assets of the company can be sold partially or fully to private investors or through the stock exchange. Eventually, some of the former publicly-owned monopolists have merged into an international and/or multi-utility holding company, as is the case with the European multi-utility giants Vivendi, RWE and Eon.

The focus in this paper is on the making of markets in the West European and North American utility markets. This process of structuring and governing those sectors is the result of both deliberate attempts of governments and regulators to facilitate new entry, rivalry while still safeguarding essential services and spontaneous moves, countermoves and the overall collective dynamic in the market place. A recent example where a new market was created as a consequence of the joint outcome of engineering and emerging competition was the bidding for third generation (3G) mobile phone licenses in Europe between 2000-2001, where poor auction design unexpectedly facilitated collusion between incumbent firms, hereby failing to attract new entrants (Klemperer, 2002; Binmore & Klemperer 2002). The relevant market makers failed to take into account that proper auction design must be custom-made to its overall objectives and to its environment. Governments and regulators had clearly sought to pursue their set of objectives, such as assigning the spectrum, to promote competition, and maximising revenues, and had stipulated all kind of trade-offs between them, but then they were not clear enough about the actual number of licenses to bid for, the number of established (second generation (2G)) operators and new entrants that were allowed to participate in the tendering process, and whether alliance formation and joint bidding was allowed or not. As a consequence, the players benefiting from this setting were the incumbent operators that could piggyback on their existing infrastructure and use their brand exposure, customer base, and bidding and partnering experiences collected elsewhere to obtain a 3G license. New entrants found themselves at a major disadvantage and could hardly get a foot in this new market. The objective of this paper is to look at the transformation of utility markets and to investigate whether the (re-)engineering of utility markets has effectively produced new industrial structures and has generated alternative outcomes. And secondly, whether this deliberate process to stir up the competitive dynamic is thwarted by the combination of

industrial predation (e.g. legacy systems and installed customer base) and incumbency power (market leadership, closeness to government, cross-subsidisation, information monopoly) favouring only modest and gradual change or by emergent and unexpected radical forces that have surprised both the omniscient market makers and those favouring the status quo.

From monopolisation to de-monopolisation in America's utilities

Paradoxically, most public utilities were pioneered by entrepreneurs and the services were provided by private companies (with the probable exception of Imperial Germany where the railway, postal and telecommunications systems were laid under state surveillance). After an early dominance of private enterprises in the first decades, governments responded by either regulating or nationalising those essential services and facilities, as substitutes for competition (Brock, 1994; Noam, 1992; Hughes, 1988). As a consequence of poor service levels and serious underinvestment of the infrastructure, and because of regional development and national security concerns, private enterprise and market forces were replaced. European governments promoted public ownership (executed at the national or regional level, combining operational and regulatory tasks); the North-American governments advocated regulation as the best means to structure their public utility industries. In some sectors and countries, smaller private firms or community cooperatives, that complemented the dominant monopoly model by having technical and accounting agreements with the public or privately regulated network operator. Examples of such a *decentralised alternative* could be found in US and Scandinavian telecommunications: the small but numerous independent operators associated with the Bell system, and the quasi-hierarchical and hybrid telephone systems in Denmark and Finland (Davies, 1994).

While the European approach to organising public utilities could be called interventionist and dirigiste, the American structure clearly reflected the tradition of economic or laissez-faire liberalism. Unimpeded by a guild, corporatist or absolutist legacy like most of the European countries, the US political economy was almost from the start committed to private rights and social individualism (entrepreneurial freedom and sanctity of contract), economic competition, and judicial review (e.g. resolving disputes through case-by-case adversarial litigation) (McCraw, 1981; 1984). The intra- and interstate railways were the first to see their

sector regulated. When the abuse of economic power of the railroads and its frustrating impact on transportation efficiency was put on the agenda in the late 1860s, national and federal governments responded by establishing the first regulatory authorities, namely the Massachusetts Board of Railroad Commissioners (1869) and the Interstate Commerce Commission (1887). Further ingredients that shaped the US regulatory framework in the early 20th century were a strong hostility to a centralised government (hence the support for regulation of public services at the (lower) state-level) and the curse of big business, dealing with the structure and practices of large holding companies. While public ownership was dominant among the forms organising and providing public services (e.g. water and electricity systems, airports) at the state level, it was a non-issue at the federal level. The US Postal Service is the exception to that rule.

For the regulation of public utility industries in the US, three practices stand out: anti-trust focus, the establishment of state-level public service commissions, followed by the creation of independent sector-specific regulatory agencies at federal and state level (McCraw, 1981). Following the first recognised, anti-competitive wave of mergers and acquisitions, the Sherman (antitrust) Act, originally passed in 1890, was offensively applied in 1911 in the break-up of the giant firms Standard Oil and American Tobacco. Already in 1907, the states of New York and Wisconsin had set up public service commissions to regulate the activities of public utility holdings, soon to be quickly copied by all the other states. Till today, in addition to the federal agencies, national states, with their Public Service Commissions, play a key role in regulating utility services. For instance, the California Energy Commission was together with the Federal Energy Regulatory Commission (FERC) responsible for addressing and solving the power crisis of 2001. Although not entirely independent of the three constitutional branches (i.e. Congress, President, and the courts), the federal regulatory agencies and commissions were autonomous in terms of their budget from any of the ministries and independent of control by a single political party (Shapiro, 1997). Those bi-partisan and multi-headed administrative authorities were given considerable latitude in carrying out their mission.

In the genealogy of US regulation, three different phases can be distinguished, which spawned and shaped three different types of regulatory bodies (McCraw, 1981). The first wave of federal regulatory bodies emerged as a consequence of 'popular activism' and was

initially designed to relieve the economic and social instability caused by the big trusts and the tremendous transformations of social and economic life at the end of the 19th century. The Interstate Commerce Commission (ICC), for example, was established in 1887 in part as a response to complaints from shippers about monopolistic pricing and route fixing by the big railroad companies. The second wave of regulation emerged in response to the anarchy of the market during the Depression in the 1930s and included the creation of industry-specific federal agencies with broad discretionary powers, such as strong price and entry controls in specific markets with the purpose of stabilising the relationships among producers (e.g. finding a trade-off between reducing competition and achieving economies of scale by allowing monopolies and curbing them by constraining their profits). Furthermore, these regulatory agencies provided an administrative framework for a large number of interests groups could bargain and settle disputes. For instance, the Federal Communications Commission (FCC), set up in 1934, was an independent agency responsible for regulating all interstate and foreign communication by means of radio, television, wire, cable or satellite. The FCC required common carriers to provide service upon request and at reasonable rates and to file tariff schedules for review and approval. In the 1960s and 1970s, a third wave of liberal reform spawned 'social' regulatory agencies, such as the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA). They ought to deal with the social impact of business and not with their corporate and economic behavior *per se*. While economic regulation deals with small but important segments of the economy, social regulation regulates all industries. These 'social' agencies were largely oriented toward the values of consumers and other interests left out of producer-oriented representation (e.g. the promotion of safety for consumers, workers, and citizens).

With such an ever-extending regulatory machinery put in place, it was due to the economic crisis in the late 1970s and early 1980s that the Carter Administration, followed by the Reagan Administration, put into question the far-reaching influence of the state on the economy. Critics complained about a number of aspects associated with regulation: its enormous costs and ineffectiveness, unfair and unwieldy procedures, lack of legitimacy (unresponsiveness to democratic control), and the inherent unpredictability of the regulatory process and its final results (Breyer, 1982). Weidenbaum (1979), for instance, warned against the encroachment of government power in the private sector, generating major inefficiencies throughout society and slowing down industrial innovation and development. He argued for

strengthening the position of business through deregulation: cutting back rules and introducing cost-benefit analysis and budget review in government. The alternative of deregulation was successfully put on the political agenda by the economists, Stigler, Friedman and Coase, and the well-known industry experts Kahn and Bailey, who all saw deregulation as way to cut back often unnecessary rules and hence to reduce social costs. Inspiration for their argument had been provided by Hayek (1944; 1945), who had conceptualised the economy as an ongoing process of discovery, competition, dynamic co-ordination and change. Hayek's view on competition and dynamic was fully supported by the economist/regulator Kahn (1990: 353-354): *the evolution of regulatory will never come to an end. The path it takes - and we should make every effort to see that it takes - however, is the path not of full circle or pendulum, which would take us back to where we started, but of a spiral, which has a direction. This is in a sense only an expression of a preference for seeking consistently to move in the direction of the first-best functioning of the market economy, rather than the second- or third-best world of centralised command and control.*

The Chicago School economists Stigler, Friedman and Coase shared Hayek's belief in competitive capitalism as an engine of progress and thought about the detrimental effects of (too much) government intervention and public spending in the resource allocation processes throughout the economy. Friedman (1962) strongly promoted the organisation of economic activity through private enterprise, operating in a free market, as both a device for achieving economic freedom and a necessary condition for political freedom. In the field of monetary policy, this would imply cutting taxes and government spending and controlling inflation by tightly constraining the growth of the money supply. In a similar vein, Coase (1959), in his classic discussion of the rationale and procedures followed by the FCC in the allocation of the radio frequency spectrum, celebrated the virtues of private property and pricing. Given the fact that radio frequencies were at the time scarce resources, Coase suggested that it would be better if the use of the spectrum would be determined by the pricing system (instead of on the basis of 'first come first served') and would be awarded to the highest bidder. In that case, the property rights of any potential buyers could be determined by an auction and any transfer and recombination of them could be left to the market place. Like his Chicago colleagues, Stigler (1975) was mainly interested in the ways actual markets operate and how governments perform in regulating or undertaking economic activities. From his empirical studies on he concluded that regulatory measures were primarily enacted and implemented in the interests

of specialised producer groups. Stigler argued that regulation was ineffective in restraining monopoly power, as agencies were often captured by those industry groups they were supposed to supervise.

Kahn and Bailey, who together had been appointed at the CAB in the late 1970s, shared the Chicago School criticism of excessive government and cost-plus ways of thinking. Instead of suppressing the competition in aviation, any residual regulation should be made as consistent as possible with actual and potential rivalry and dynamics. A key device for Kahn in the deregulation of the airline industry was the marginal cost pricing philosophy: *I really don't know one plane from the other. To me they are all marginal costs with wings* (Kahn, in McCraw 1984: 224). Another important concept in this respect was 'market contestability', strengthening the case that there should not be any discrimination against new entrants (Baumol, 1982; Bailey & Baumol, 1984). The key requirement for introducing (potential) effective competition and deregulation is the absence of any mobility and regulatory barriers (like sunk costs, customer lock-ins and other incumbency powers); as defined by Baumol (1982: 3): 'a contestable market is one into which entry is absolutely free and exit is absolutely costless.' Regulatory barriers and dependence of incumbents that would impede (potential) competition ought to be identified and different ways have to be considered to reduce or eliminate them.

These claims for pro-competition policies were picked up and supported by leading politicians (from Republicans to Democrats), opportunity-seeking office-holders, and consumer activists, all responsive to concerns about high levels of inflation and taxation, government intervention, and inclined to free market ideologies. Although hindered by a relatively late and ineffective reaction from the affected industries to protect their vested interests and slow down far-reaching reform measures, entrepreneurial administrators, commissions and advisory working groups effectively advanced the ideas for deregulation and eventually implemented them (Derthick & Quirk, 1985). Evidently, aviation and telecommunications stood out in terms of carrying out radical institutional change, and improving productivity. In aviation, Kahn and Bailey not only stimulated new entry and competition, but also managed to dismantle 'their' CAB by 1984. Another major accomplishment of deregulation in the US was the divestiture of AT&T in 1984, as the ultimate consequence of an antitrust suit instituted by the Justice Department. The quasi-

vertically integrated AT&T/Bell system was separated into seven independent regional Bell operating companies providing local telephony, and the remainder of AT&T, including long-distance and international telephony, equipment manufacturing and R&D. Besides being forced to hive-off the regulated local telephony undertakings, the new-AT&T was now freed to take on indigenous competition from MCI and Sprint, enter the booming datacommunications market, and internationalise its operations. In the 1990s, deregulation turned into an administrative reform movement when the Clinton Administration with its 'Reinventing Government' programme started to streamline regulatory and other administrative procedures even further, cutting red tape, and separating policy decisions from execution by divesting or introducing competition in service delivery (Osborne & Gaebler, 1993).

From monopolisation to de-monopolisation in Europe's utilities

The collectivisation of the provision of public utilities (e.g. telephony, mail, electricity, water and transport), that had started in most European countries at the end of the 19th century and lasted until the 1980s, had been institutionalised through statutory monopolies, authorised by central (or regional) governments and operated by state-owned administrations or municipalities. In Europe's mixed economies, the state has traditionally played a leading role in those key sectors of the national economy by acting as entrepreneur, direct supplier of services, lender of last resort and planner for the industry in question or the economy as a whole (Shonfield, 1965; Ambrosius, 1984; Jänicke, 1990). In those days, the European governments relied upon interventionist instruments, such as indicative planning, nationalisations and state monopolies, extensive public works and procurement programmes, and demand creation/income redistribution policies. The increase of state intervention at the sector level was paralleled by the establishment of the welfare state at the macro-level. In his *In Care of the State*, De Swaan (1988) has referred to the gradual rise of nation-wide, collective and compulsory arrangements, that structured the provision of both public services, social security and welfare systems. In the formation and implementation of these Keynesian macro-economic policies, the state apparatus was supported by the active participation of centralised labour and employers organisations, jointly combating inflation and unemployment, and securing substantial levels of economic growth (Shonfield, 1965).

European governments and their recognised social partners had established tri-partite arrangements to settle wage/price levels, working conditions and labour market issues.

At the end of the 1970s, European public sectors were relatively large and characterised by an extensive bureaucracy, a substantial degree of public ownership, and ambitious redistribution and employment programmes. Consequently, civil servants and their unions had substantial power: public sector employees had a strong legal and political position, based on the civil servant's statute, reasonable working conditions and extensive participation mechanisms. Political and administrative intervention by ministers, legislators, and civil servants in the day-to-day operations of the nationalised industries and interference with the pricing, personnel and investment decisions of public managers was frequent and all-pervasive. What matters for state enterprise is political performance, in the words of a senior manager: *Running a nationalised company is like having a stockholder's meeting everyday* (Walters & Monsen, 1983: 16). Nationalised industries and cross-industry state holdings (e.g. IRI Italy) proved to be failures: the capture of public managers by politicians and trade unions, a general overmanning of state monopolies, ambiguous and inconsistent corporate objectives and portfolio, poor coordination among the various public enterprises, and the absence of effective control over public enterprises by Parliament, the courts or the sponsoring minister (Majone, 1994a; 1994b). Especially in France, there was strong support for an active role of the sovereign state in national economy. This has become known as the doctrine of *service public*: an activity which the sovereign state decides to conduct by itself, or at least, where its duty is to intervene strongly in order to correct deficiencies of private initiatives (e.g. defense, diplomacy, justice, social services and infrastructural public services) (Stoffaes, 1996).

From the late 1970s onwards, Europe's economies were hit hard by the economic recession and increasing competition from Japan and the Newly Industrialising Countries, resulting eventually in de-industrialisation, long-term unemployment and cutbacks in public spending. European governments became concerned with how to adjust their stagnating economies to the new techno-economic and international conditions. With a relative decline in public investment and infrastructure spending in the 1980s, together with an increase of congestion in public infrastructures (e.g. communications and air transportation), European governments painfully became aware that the next round of investments had to be carried out by the private sector (OECD, 1993). The big challenge for national policy makers in the 1980s, became to

prepare domestic firms, strategic sectors and the national economy as such for international competition, and to develop an appropriate mix of strategic responses (e.g. deregulation, privatisation, innovation policy).

By the end of the 1970s, politicians, businessmen and intellectuals in Europe started to rediscover economic liberalism and, like their American counterparts, promoting supply side economics. Britain was clearly the first mover in this respect, not only in terms of preaching but also in practising it. For instance, the economist Littlechild (1978) raised serious doubts about the large-scale and far-reaching state intervention in the national economy. He argued that private enterprise (*laissez faire*) and the smooth functioning of markets and competition would not only generate overall efficiency gains, but stimulate entrepreneurship and innovation. The *In care of the state* of a previous era was replaced by slogans in which an overambitious state was to be blamed for the economic crises and freeing market forces as the remedy for it: *Selling the state* (Veljanovski, 1987), *The retreat of the state* (Swann, 1988), and *The state under stress* (Foster & Plowden, 1996). The UK governments showed great determination to replace state-controlled and monopolistic markets by a ‘competitive order’, where the dynamic play of market forces would be actively promoted. The belief was that regulation in this respect, imposed on just privatised and liberalised utilities, would only be temporary before workable competition would take hold. Initially supervisory powers would be delegated to newly created independent regulators, but ultimately, actual and potential competition would undermine monopolies and make regulation obsolete. One key policy innovation was introduced in that period, which was quickly and widely adopted in Britain and elsewhere, namely price-cap regulation: prices for a basket of services are set in advance for a longer period (3-5 years), allowing the firm to benefit from any cost savings made during that period. The industry regulator faced the difficult role of promoting competition to cut back the monopoly on the one hand and constrain monopoly pricing on the other. Compared to the American system of rate of return or profit regulation, the economists Littlechild (1983) and Beesley (1992) argued that price-cap regulation was better in terms of efficiency and administrative convenience.

Despite the great efforts to privatise public utilities, to liberalise markets more or less radically (softly in telecoms and water, and drastically in railways and energy) and to formalise rules and regulation for those industries, the final outcome in the UK was *ordered*

competition: a halfway house between government direction and a competitive order (Burton, 1997). Instead of dismantling artificial obstacles to entry and competition instantly, the British government gave clear priority to privatisation and statutory regulation over liberalising markets. At the actual time of privatisation, basically no competition was allowed, yet even new market barriers had been erected by the various British government (e.g. entry assistance, price-cap regulation, and duopolies).

On the European Continent, conservative and Christian Democratic parties followed the Anglo-Saxon path by giving priority to scaling back welfare provisions, contracting out public services and privatising state-owned enterprises. In the late 1980s and early 1990s, the Social-Democratic parties were also converted to economic neo-liberalism and they too actively supported pro-market adjustment policies. In their responses to economic stagnation, European governments laid emphasis on curbing public expenditures, administrative reform and deregulation, decentralisation of collective bargaining, and shifting resources from sunset to sunrise sectors. Since the 1990s, all West European governments are now in the process of gradually withdrawing from their active role in the provision of public services and are transferring assets from the public to the private sector. They have granted substantial managerial autonomy to former state enterprises and have separated operational activities from regulatory controls. The drastic policy changes implied a shift towards the (managed) liberalisation of markets, the corporatisation and privatisation of the former monopolist, and institutional reform, in order to avoid the conflicting interests of the administration as market player and referee at the same time. The traditional state monopolies have often been replaced by a mixture of (more) market-oriented arrangements, such as new entry, the increase of competitive tendering and franchising, the introduction of yardstick competition and competition between different technological modes and capital market competition.

The traditional role of the state in Europe changed from being a producer of goods and services to that of a regulator whose main function is to ensure that economic actors play according to the agreed rules of the game. Originally, in the USA, and more recently in Europe, the supervision of utilities is the responsibility of independent single-industry agencies, dealing with the regulation of prices, enforcing licenses and ensuring quality of service, supported by transsectoral agencies to safeguard fair competition. Compared with public ownership, characterised by active state intervention and political interference, the

regulatory authority is not an acting party in the market, because private ownership is respected, and the execution of its administrative task is insulated from the potentially destabilising effects of short-term party politics, electoral instabilities, and changes in government. In Western Europe there was until recently a reluctance to rely on those specialised, single-purpose administrative agencies; instead, important regulatory functions were assigned to the departments of the central government or to inter-ministerial committees. In this respect, Majone (1994a; 1994b) has typified the drastic institutional changes in Western Europe as a development from an interventionist state to a regulatory state. The interventionist model, based on an active and authoritarian role for the state in the national economy, has been replaced by a regulatory model, in which the state only stipulates the conduct of actors and the conditions under which the economic game is played.

Privatisation and deregulation processes in Europe not only vary between Britain and Continental Europe, but they also differ between Western and post-communist economies, and among the countries within each group (Bös, 1993). This variety can be explained on the basis of differences in terms of ideology (radicalism/conservatism), scope and reach of public ownership (municipalities, regions, state), overall performance of the public sector, etc. For instance, the timing and degree of implementing structural reform in telecommunications showed a huge contrast between Britain, France and the Netherlands (Hulsink, 1999). The British 'first mover' strategy of carrying out privatisation, liberalisation and regulatory reform quickly and radically in the early 1980s, was followed by a more patient and cautious approach to transform the telecommunications market in France and in the Netherlands, stretching out to the mid-1980s.

In Western Europe, deregulation at the national level has often been followed by re-regulation at the EU-level. As a consequence, public utilities in Western Europe have lost their pre-existing statutory immunity from the Community's competition legislation and their business activities have become subject to the supranational anti-trust provisions of the European Union Treaty. The European Union's role in deregulating the domain of public utilities is mixed (Pelkmans, 2001). First of all, the European Union (EU) was (and still is) neutral with respect to property ownership; instead, all public and private entities are subject to the EU rules on competition. Secondly, in public utilities with no or limited cross-border trade, such as water and sewerage, there has been so far no major involvement of the EU in making those

network markets competitive. Thirdly, the approach chosen by the EU was basically ad hoc and driven by the Competition Directorate of the Commission. It was only until the late 1980s, when the sketchy plans for liberalising the European telecommunications and broadcasting had been drafted and Britain's radical privatisation programme was already implemented, that competition policy became gradually and actively applied in the EU (see chapter 2, this volume). In the 1990s and thereafter, most network-based markets in the EU have been liberalised or are in the process of being opened to competition with tightly-set deadlines.

The European Union's polity can be characterised by harmonisation and decentralised administration & implementation. In these processes of approximating substantive rules in particular domains and transposing the relevant directives into national legislation, transnational networks of national regulators have been formed, with the European Commission acting as a co-ordinator. By exchanging information and sharing working standards amongst each other, they hope to achieve the necessary degree of uniformity in regulatory policy-making (Dehousse, 1997; Majone 1997b). Such a 'soft' regulatory system, based on information and persuasion, will not only make credible commitments possible, but also contribute to an effective enforcement of measures and objectives in their field. For instance, in the field of public utilities and anti-trust policy, the national regulatory authorities, together with the Commission, have raised their profile by coordinating their activities, pooling their experiences, and eventually embark on a trajectory of mutual learning and benchmarking.

Regulation and characteristics of network-based industries

Regulatory bodies have been created to ensure that these newly created competitive spaces function in a socially responsible way and that certain public interest requirements are met. They impose certain rules on the economic agents in the sector, concerning market entry/exit, conduct and/or corporate performance. So the overall structure of a particular market place (e.g. number of players and nature of competition), the provision and pricing of particular (set of) public services, and the input and output levels of the market players (e.g. profits, investments) are to be defined and upheld by regulation. The purpose of public regulation is

to facilitate and to accomplish the realisation of socio-economic goals like allocative efficiency and economic growth, price stability, and the provision of public goods by shaping the structural characteristics of an industry. The justification for administrative regulation has to do with market failures and market imperfections, that produce sub-optimal outcomes in terms of respectively output and efficiency (e.g. natural monopolies, externalities, excessive competition, and information asymmetry) and - to some extent - equity (e.g. universal service provision). One should distinguish between anti-trust, economic and social regulation. Anti-trust regulation aims at encouraging competition and curtailing the influence of monopolies, cartels and other restrictive business practices, that may disturb the proper functioning of markets. Economic regulation refers to the imposition of controls over prices, entry, exit, output, services rendered, markets served and profitability in particular industries. Social regulation deals with consumer protection, occupational health and safety, environmental protection, etc.

Regulation has been defined by Selznick (1985: 363) as *a sustained and focused control exercised by a public agency over activities that are valued by a community*. The element of 'sustained and focused control by a public agency' implies that regulation is more than merely passing a law; besides rule-making and rule-enforcement it also includes the responsibility of fact-finding in order to monitor these rules. Regulation on the one hand presupposes detailed and independent expertise of the industry to be audited and, on the other hand, an in-depth involvement in the regulated activity. The requirement of and the reliance on in-depth knowledge in carrying out this regulatory task, will sooner or later, result in the establishment of a specialised administrative agency, which is authorised for regulating a particular industry (Majone 1994a; 1994b). These independent regulatory agencies, established by statute, operate on the basis of a legislative mandate in which their rule-making activities are stipulated, and use procedures that are fair, accessible and open ('due process'). Operating outside the line of hierarchical control or oversight by the central government, they are able to provide greater continuity and stability in policy making and implementation, than traditional government departments. The regulatory bodies, combining legislative and judicial powers that have traditionally been kept separate, differ from the central government and the courts by a collegial approach to decision making, an emphasis on professional expertise and political independence. The element of 'valued activities' in the definition indicates that the activities to be regulated are considered worthwhile in themselves: such as faith in private

ownership and/or the promotion of competition. The regulatory approach aims at realising a market's potential for furthering allocative efficiency, while at the same time correcting market imperfections through social and economic legislation to ensure objectives like fair competition, price control, consumer protection and universal service provision.

Regulation can be interpreted as a more or less formal system of rule-making, which operates through negotiation and bargaining between politicians, civil servants, industry, consumers and administrative bodies in the shadow of the law (Hancher & Moran, 1989; Veljanovski, 1991). Such a regulatory framework of organisations includes vertical relationships (e.g. goal setting, mandatory reporting, incentives and sanctions) and horizontal relationships (e.g. competition, cooperation, accommodation) (Baldwin & Cave, 1999). Public policy objectives, like universal service, price controls, innovation and fair competition are now sought after through different means, for instance through market coordination, administrative regulation and private law techniques. For instance, market coordination and regulation are now applied to improve efficiency, innovativeness, quality of service and overall industrial performance. Bilateral contracts between the government and the franchisee and specific provisions in the articles of association are still used to prevent hostile take-overs or restrict foreign ownership (i.e. the so-called 'golden shares').

Many public utilities are network industries. Due to the capital-intensive character of infrastructural systems and their socio-political relevance for society, network-based industries have become 'administered' markets, where full competition is still constrained and market dynamics may not serve the public interest. There has to be a fit of the regulatory strategy to the particular characteristics of network industries: which of aspects in the overview of network-industry characteristics given below are relevant for the regulators framing their purpose(s) and selecting their method(s). For instance, in the process of opening a network-based industry to competition, the ownership of or control over so-called *essential facilities* (bottlenecks) by a monopolist, and especially abuse of these critical assets, can be detrimental. Since competitors are unable to provide these crucial facilities themselves or to develop a substitute, the regulator has to impose an obligation to give third party access and set fair interconnection requirements (Grieve & Levin, 1996). For instance, in the early days of European airline deregulation low-cost airlines Virgin and Easyjet had enormous difficulties getting decent landing slots at the London and Amsterdam airports: they faced

strong opposition from the then tight coalition of the incumbent carriers (BA and KLM) and the national airport authorities (Heathrow, Gatwick, Schiphol).

In network-based markets effective competition is harder to establish than the proponents of deregulation suggest (Shepherd 1998). The final outcome could even be another unacceptable situation of market dominance (oligopoly or monopolistic competition) by a single firm or a tight oligopoly. Effective rivalry may be blocked because the (potential) impact of new entry is overestimated (often confined to shallow or niche entry) and the powers of the incumbent operators are seriously underestimated (e.g. past reputation and branding, long-standing arrangements, extensive network externalities, superior knowledge, legal tactics, complex price discrimination, etc.). Major impediment to effective competition in a deregulating industry are still existing barriers to entry, complex dynamic pricing (price/product differentiation) and mergers. For instance, the sunk costs of an existing infrastructure, the lock-in to historical legacy systems and a large installed customer base with loyalty programmes in place may sustain inertia to some extent and promote only incremental change. Not only must barriers to entry and predatory pricing be identified after the competition gets started and addressed adequately, also anti-competitive mergers must be prevented. For example, the initial phase of airline deregulation in the US with free entry and competition was followed by a wave of mergers between the big carriers, and subsequently followed by systematic price discrimination, price raising, and a lack of free entry.

Public utilities have a number of characteristics which set them apart from other industries. Trebing (1994) has stipulated the most important ones:

- i) networks require a heavy minimum threshold investment because of the need to interconnect with all customers in the service territory;
- ii) networks typically permit the development of multiple service at a lower cost than if each service were to pay its stand-alone cost because of joint product development;
- iii) there will be significant economies of scale from building capacity in advance of demand as long as that demand is properly forecasted;
- iv) adding a segment to a network typically increases traffic on all other segments of that network;
- v) networks provide inexpensive backup and increased reliability through routing alternatives, pooled reserves, and spreading outages;
- vi) the more comprehensive the network, the greater the potential for reducing the level of capacity to meet individual peaks;
- vii) advances in software and modernisation improve network functionality and flexibility;
- viii) network size and new technology interact to permit new methods of packaging and transmitting service;
- ix) the incremental cost of adding a specific decreases as the size of the network increases;
- x) networks produce significant positive externalities (e.g. increase size of the market, and diminish the market power of an individual users).

Corporate strategies and ‘David & Goliath’ competition

If we look at the corporate strategies and stratagems in newly liberalised markets, the regulatory bargains struck between firms and public authorities, and the overall dynamics of markets and politics, and their ultimate outcomes, the picture seems to be straightforward: the emergence of market entry and competition between new entrepreneurial firms and revitalised incumbent operators will eventually make government ownership obsolete and regulation – after an initial period of guiding the introduction of competition - redundant. Freed from a historic legacy and sunk assets, (prospective) entrants can choose whether or not to participate in a market which has been opened to competition and face one or more of the industry incumbent operators. Those incumbents may have a strong brand name, a dense and often

nation-wide distribution systems and an installed customer base, but their infrastructure is often expensive, outdated (i.e. made up of legacy systems), and their service levels are poor and their set of products are limited. Although their entry opportunity involves high up-front investments with long-pay back periods and hence a strong need for continuous (re)financing, the new entrants stand a chance if they invest in improvements in operating efficiency, quality control, aggressive marketing, and spotting opportunities for price arbitrage. As some recent bankruptcies in the utilities industries illustrate (Enron, Worldcom, Railtrack, Sabena, Swissair), even aggressive established operators can simply stretch too far. Much to their surprise, regulators and governments have now realised corporate bankruptcies are part of the competitive process and that there is a big difference between the provision and the provider of public services.

The strategic choice between different governance modes of industry can be seen as a strategic game in which interests and values of the involved parties play a vital part and the political-economic organisation of society is at stake. Regulated firms and industries, public agencies and other actors operate within the political and administrative process in exactly the same way they operate in the market (Owen & Braeutigam, 1978; Vietor, 1989; 1994). They seek to realise their corporate objectives by linking their strategic and operational behaviour in the market place with their political strategies advocating their interests and influencing political decision making. Or in other words, public or private companies that want to operate effectively in a regulatory environment must be active both in the market place and the political arena and complement their business activities with political action. The institutional environment, in which public service companies operate, entails both market and non-market (or political) components: they not only face competition and (may) rely on private agreements in exchanging resources, but they also have to represent themselves in the policy process where the rules of the regulatory game are defined and implemented (Emmons, 2000).

Firms that previously were hampered by government ownership and sheltered from competition, are now confronted with the impact of technological change, privatisation and liberalisation. As a consequence, former monopolists such as AT&T, British Airways, Belgacom, Schiphol Airport, Deutsche Bahn, and EDF have to come up with new strategies to organise and steer their business environment. Spurred by new external investors and

shareholders, these state enterprises transform themselves into full service providers, driven by an entrepreneurial spirit, and facilitated by a decentralised structure and an international network of business partners. These operators face the two-fold task to realise the corporate goal of profit maximisation and to comply with certain 'public interest' requirements (i.e. safeguarding the provision of key services). While modernising the infrastructure and innovating the provision of regulated services, they diversify into new product and geographical markets (e.g. Internet access, waste collection, energy trading, facility management), and establish strategic linkages with foreign partners.

The sheer size and omnipotence of these hybrid companies, however, has caused concern about the lack of 'workable' competition' in newly liberalised markets. A characterisation of *David & Goliath* competition seems to be more appropriate. New entrants, such as Mercury and Versatel (in telecommunications) and Virgin, Ryanair and Easyjet in aviation, have complained about the anti-competitive practices and the abuse of market dominance by the incumbent operators. Therefore, next to the market place, the political arena is the second environment in which regulated firms must compete by other means to advance their corporate interests. To be effective in the regulated environments, firms should adopt strategies which secure a balance between improving market performance and obtaining institutional support from socio-political stakeholders.

Established operators could no longer rely upon their massive scale and scope of their assets and their historic strength, but they had to develop competitive capabilities in a more open market place (Kay, 2000). Incumbent operators are Janus-faced: they have to combine, both politically and strategically, the exploitation of staying a (de facto) monopolist in their home market and the exploration of becoming an aggressive competitor abroad or in new product/service markets. Besides by exogenous forces of emerging market competition and governments preparing for a corporate restructuring and an eventual privatisation, the former monopolists will also be restructured by new shareholders and a stock market listing for the established companies, increasing visibility and accountability, and more commercial executives embarking upon a efficiency drive, (re)defining the core business, and pursuing risky differentiation and diversification strategies. As many incumbents have found out, entry in newly opened markets was more difficult than expected (often testing their managerial capabilities to the extreme and unexpectedly absorbing their scarce financial means). A lot of

the diversification strategies have ended in failure (dis-investments), or at best have generated mixed results (huge financial losses and bad publicity), having drawn management's attention away from core business operations. Also their internationalisation strategies have often been a mixed blessing for them, manifested by huge investment and a high turnover in cross-border alliances and partnerships. Furthermore, those aggressive operators found out to their surprise that they were extremely vulnerable in their own backyard to unfavourable regulatory interventions and emerging competition eating away their historic competitive advantages.

Overall and in the long run, new entrants, however, will be at a distinct disadvantage. Such an industry with large networks relative to the size of a given market, considerable sunk investments, and high levels of concentration, will have substantial barriers to entry and contain a latitude to employ anti-competitive practices. New entrants may also be vulnerable to capacity shortfalls or bottlenecks associated with a sub-optimal infrastructure or caused by the dirty tricks of the incumbent operator and a regulator not yet in place or incompletely equipped. Furthermore, the insurgents, already busy by achieving commercial viability and handicapped in accessing essential network facilities, face a profitable and diversified rival who may introduce complex pricing schemes (e.g. price discrimination, selective discounting and subtle risk/cost shifting). They are drawn into newly imposed price-cap and interconnection regimes, which are basically beneficial for the established network operators (allowing for tariff rebalancing, gradually scaling back cross-subsidies).

One of the many paradoxes in the domain of transforming the domain of public utilities is that the introduction of workable competition in those infrastructures needs to be designed and engineered. This process of engineering competition in the public utilities' domain is critical and complex, in a technical, economic, as well as political sense. Given the specific supply and demand characteristics of network-based industries, deciding upon the form, degree and pace of competition in the market place is no easy matter. The forces of the past and present may be hard to phase out: the sunk investments in and ongoing support for techno-administrative legacy systems, fierce political resistance against divestitures of businesses by managers, workers and trade unionists favouring gradual change, may hamper political decision making on implementing radical measures (Vietor, 1996; Emmons, 2000). Furthermore, implementing those measures may be even more complicated (e.g. unbundling networks, services and even companies) and may demand highly advanced IT and control

systems transfer pricing schemes (Sichel & Alexander, 1996). The results of deregulatory measures may even be counterproductive and the introduction of liberalisation may lead towards new rules, often applied from adjacent areas (from sector to generic policies, i.e. antitrust policy) and higher discretionary levels (from national to supranational authorities: EU and World Trade Organisation (WTO)).

The impact of deregulation may even be counterproductive, such as pressing for greater competition but ending up in greater concentration and in setting up (or expanding the domain of existing) administrative agencies (Emmons, 2000). Besides constrained in their day-to-day operations, regulated firms are also hampered in their longer-term plans by governments and/or regulators setting limitations on their infrastructure and service investments and geographical expansion. The very complexity of regulation acts as a barrier to entry for new competitors but the same regulatory requirements also complicate product innovation and the use of distribution networks for the established operators. New entrants and incumbent network operators have to further their interests in both the market place and the political arena (Emmons, 2000). Executive boards of privatised firms actively seek to represent the demands of representing a new set of shareholders while facing and seeking to accommodate the restrictions and requirements regarding ownership of the past (e.g. universal service provision, golden shares directly or indirectly related to national security and sovereignty). The new senior managers of the incumbent operators, most of them with private sector experience, now focus on defining the core business and adjusting the organisation to improve efficiency and profitability, and expanding the scope of activities. They often adopt new organisational structures that permit more effective management of costs and more effective segmentation of customers: forms based on functional or geographic divisions are replaced by profit or cost centres organised around specific products and or customer segments.

As many new entrants and incumbent operators have experienced in the implementation of deregulation and privatisation, the government and the larger political system continue to play a critical role in their performance. Despite corporatisation and privatisation, governments may still have substantial powers in the revitalised operator, such as holding a majority of shares in them (the French government in France Télécom), and minority shareholdings with golden shares which provide the governments with important decision making powers, such

has the right to block mergers and acquisition and/or set prices for certain goods and services provided by the firm. Also the newly appointed regulatory authorities, which should overlook the initial stages during which competition will be created and then rule the industry and make the dedicated institution redundant, actively interfere in corporate decision making concerning the pricing, selection, availability and the quality of services. While lip service is paid to free markets and deregulation, the existing regulatory bodies are still persistent and proliferating.

Conclusion

As shown above, introducing deregulation and liberalisation (or modifying regulation) and engineering market dynamics in a utility world that is still characterised by partial competition and a persistent quasi-monopoly, is no easy matter. The process of demopolisation can be seen as the result of ongoing strategic and tactical interactions among incumbent operators and insurgent market players, tough bargaining between those firms and supervisory regulators, and difficult negotiations at the federal level of Washington and Brussels between the state administrations, their regulators and the transnational institutions. In order to create some form of dynamic rivalry in those ‘monopolistic’ network-based industries, the emergence of new entry/exit and competition needs to be nourished and closely monitored and supervised: the emergence and persistence of competition needs to be engineered. The concept of engineering competition is somewhat ambiguous, since we should be both aware of the shortcomings of designing and managing markets and the limitations on and problems with self-organisation in regulation. In Hayek’s terms, competition is a spontaneous process and is in the domain of human action, while ‘regulation’ is a product of human design and contains instruments and toolboxes to intervene in a dynamic environment, and those two should not be mixed. Hence, despite the popularity of the term engineering competition, ‘engineering regulation’, with a clear and intentional focus on devising an appropriate framework facilitating competition, is probably a better term.

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