III.13

# Multi-Utility Regulation: Yet Another Convergence?

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## Introduction: *Et in Arcadia Ego*

Midsummer 1988 at Cumberland Lodge, Windsor Great Park, was an Arcadian setting under royal oaks for a conference about the new challenges for communication policy research posed by deregulation and privatisation. Telecom reform had been put on the academic agenda in the United Kingdom and given the moral support of the Director General of the Office of Telecommunications (OFTEL), the new telecom regulator. The national Economic and Social Research Council planned a multidisciplinary programme dedicated to this field called the Programme on Information and Communication Technologies (PICT). And the impressive, border-crossing North American academic to whom this *Festschrift* is dedicated became the programme director.

William Melody did not present papers at the Communication Policy Research (CPR) conferences in Windsor that I attended in the late 1980s, but his impact and experience became clear in the vivid discussions. With hindsight, some *ex ante* influence might also be inferred: The opening paper at CPR '88 analysed common problems of deregulation of different network industries in the United States; its author was Professor Harry Trebing (1988), the founder of the Institute of Public Utilities at the Michigan State University – and Melody's academic mentor.

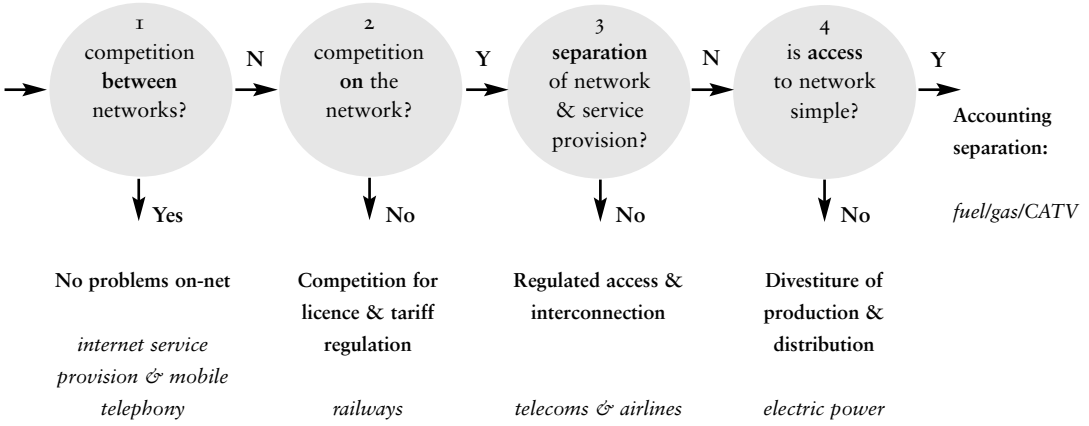
In this contribution, I first revisit Trebing's classical network industries – railways, airlines, telephony and power utilities – and also consider modern specimens such as mobile communications and Internet backbones and their special regulatory problems. I then offer a discussion of the institutional convergence of the associated regulators. Should multi-utility regulation be given more weight than, say, the familiar technological convergence between information technology, computers and communications or the use of general antitrust principles for market analysis in the new sector-specific European Union (EU) legislation on electronic communications (European Commission 2000)?

## Key Regulatory Issues in Different Network Sectors

Figure 3.13.1 summarises characteristic policy and competition problems inherent in the key network sectors frequently described as public utilities. The different

history and economic or physical characteristics of each sector have resulted in various regulatory regimes. These *ex-ante* regimes have been designed to repair specific market failures or address generic public policy concerns, for example, safety, network integrity, universal service, user billing and terminal addressing, plurality of content, etc.

**Figure III.13.1 Policy and Competition Problems in Network Sectors**




*Source:* Derived from a White Paper on Network Industries, The Netherlands Ministry of Economic Affairs (2000), in Dutch.

General competition law applies to all network sectors in Figure 3.13.1. However, antitrust authorities have seldom seen fit to deal, in a timely manner, with public issues emerging in network markets. Arguably the most successful cases of invoking the doctrine of misuse of power in the communications sector resulted in abolition of network operators' traditional prohibition of competitive provision of terminals – such as the Carterfone decision (Federal Communications Commission 1968) and the BT Telex case (European Court of Justice 1985) – more famous as crowbars opening monopoly markets than for instant economic or social impact. The flexibility of competition case law enables definition of all relevant markets for potential regulatory action. Still, the actual repertoire of interventions by antitrust authorities is a binary choice between complete *laissez-faire* and a heavy

penalty. The duration of such *ex post* proceedings is illustrated by the long running case against Microsoft for its alleged tying of a new Internet browser (Explorer) to its dominant Windows '95 operating system.

Where targeted prescriptions with significant economic or social impact need to be designed and invoked *ex ante* to ensure, for instance, appropriate network (co)operation or service pricing, the specific features of technology and access methods in the network sector need consideration. These features explain the different possibilities for competition in the various sectors in Figure 3.13.1.

The different analytical branches (hereafter roundabouts) in this flow diagram outline key criteria for determining the feasible degree of liberalisation of network sectors, and the associated regulatory tools. The initial – and most fundamental – question (Roundabout 1) addresses the possibility of choice for customers. Can they freely choose between different network operators, or does customer capture prevail? In many OECD countries, the national mobile telephony market has become competitive, particularly where number portability lowers consumers' barriers for switching to another operator. The same applies to access to the Internet via international backbones, which now often have a capacity glut. Note that freedom of network choice does not ensure *off*-net users reasonable prices, as evidenced by the retail prices for calls from fixed to mobile phones in Europe (more generally, this applies in markets where the calling party pays for calls to mobile terminals) and for international mobile roaming. Such protracted problems arise from unregulated issues in Roundabout 3.

In the absence of an effective choice *between* competing networks, Roundabout 2 is entered. If service competition *on* the net is also absent, as is generally the case for railways and (local) bus lines, price regulation is appropriate. Other regulatory tools to be considered are terms for re-licensing the service periodically or in the event of an unacceptable degradation of service levels.

Roundabout 3 provides, in principle, for competition *on* the network(s). Examples are carrier selection in liberalised transport industries and telephone markets. However, the incumbent operators here are often vertically integrated, that is, with no clear-cut business – let alone legal – separation between their upstream carrier facilities and their downstream service provision. Hence regulatory intervention may be required to ensure non-discriminatory interconnection of competing networks and equal access to key facilities, such as terminal gates or luggage-handling facilities in airports. Whereas retail price regulation should be rolled back as effective competition develops, wholesale prices for handling traffic

between competing networks continue to need monitoring and, in the event that commercial negotiations between parties fail or are not in the public interest, determining by the regulator.

The threshold for economic market power in a wholesale market cannot be set notionally at a fictitious level of 50% of all customers or of the on-net retail revenues of the dominant operator(s) concerned. Rather, it is related to the actual percentage(s) of total traffic passed *off*-net to the interconnecting operator(s). Therefore, the relative bargaining power of a network operator when negotiating an interconnection agreement for *two-way* traffic is roughly proportional to the *square* of its number of retail customers. This non-linear relationship explains the ongoing erosion of peer-to-peer agreements between Internet Service Providers (ISPs). The increasing imbalance in their sizes caused by rapid horizontal market consolidation raises unresolved interconnection concerns. Vertical integration with content provision may add the additional public policy issue of discriminatory access to information.

Such regulatory concerns may seem less important in the linear situation encountered in classical one-way (that is, purely distributive) networks for cable television and power delivery. So far, legal or accounting separation of upstream production from downstream distribution has been sufficient (Roundabout 4). However, recent events in the United States (increasing vertical concentration of media production and distribution and the risk of failure of major integrated power companies) have raised concerns about the adequacy of regulatory oversight of activities in converging sectors. Two examples suffice to illustrate the issues:

- the use of power lines for public electronic communication, for example, Internet broadband access; and
- upgrading the smart (SIM) card used in GSM mobile terminals to serve as a credit card for financial services that is underway.

Both, as yet fictitious, will raise the question of the appropriate authority to oversee the problems from overlapping, but differently regulated, domains. In the former example, a US-style utility commission could well have both the jurisdiction and the expertise. The latter example suggests a more far-fetched integration of the communication regulator and the financial regulator(s) setting conditions for consumer loans and unpaid sales. So what are reasonable criteria for deciding on the institutional convergence of regulators?

## Convergence of Regulatory Institutions?

Justification for joint regulation of different network industries may be found in the substitutability of their output products on the relevant market, in economies of scale and scope of regulatory expertise and, above all, in constitutional and political tradition. The United States has a long history of independent regulatory agencies at both federal and state levels. Elsewhere, government departments were made responsible for setting and enforcing the desired national standards in most network markets of strong public interest. Traditionally, government authority was often reinforced by state ownership of such network industries, and by international regulatory organisations established by treaties between states, such as the International Telecommunication Union (ITU). With the rapid globalisation of trade in the last decades of the 20th century, the traditional arrangements are under review or being reversed in many countries.

The more fundamental changes occur in the geographic regions and economic sectors relying mostly on high-speed international connections with high transaction volumes, for example, in financial markets, electronic communication and civil aviation. The European Central Bank has replaced national banks or government treasuries in setting the key interest rates to ensure monetary stability in member states. Since 1998, the EU telecom directives on Open Network Provision (ONP) require Member States to make their National Regulatory Authorities (NRAs) independent, not merely of the incumbent operators, but also of shareholding governments. The new EU directives, entering into force in 2003, will make the next step towards supranational regulation of electronic communication, by giving the European Commission the right to veto NRA definitions of relevant markets and the designation of dominant players in these markets. Why did this become necessary so soon?

Digital information and communication technologies offer a unique combination of features and options with substantial economic significance (Arnbak 1998; 2000). These include:

- transport with the speed of light (unlike pipelines, rails, roads, etc.);
- transport without loss of quality and value (unlike dissipation in electric power transmission);
- copying/broadcasting, bundling and re-routing/refiling of information (unlike the post, printing and publishing sectors);
- complementary customer access options – choice between wired access and wireless networks (with different economic and operational advantages); and
- lightweight, portable and tradable terminal devices (unlike sea, air and rail networks).

These dynamic features explain why the World Trade Organization (WTO) has been able to reach trade agreements in telecom earlier than in most other networked service areas. New types of switching (such as the Internet protocols) and bulk transmission (on optical backbones) change network economies radically from the inside. Where sufficient economies of scale can be achieved with optical cables, the marginal cost of long-distance transmission tends toward zero. This 'death of distance' reveals, in turn, the increasingly dominant cost of the local networks providing access to individual customers and the economic impetus that broadband access might provide if appropriately introduced.

When traditional benefits and costs can shift to different user communities, or to other parts of communication networks, modifications to the regulatory framework for public control of tariffs and access obligations are required. In the terminology of competition law, the relevant product and/or geographical markets will have to be ascertained much more frequently, due to ICT dynamics. The ONP rules prescribe a limited number of relevant product markets (leased lines, fixed telephony and mobile telephony), rather than a procedure for (re-) defining them. Hence, the insistence of the European Commission on the right to veto erratic NRA decisions in this critical area.

On re-examining Figure 3.13.1, it becomes clear why other network sectors are likely to present quite different regulatory issues. Even within one roundabout, a different network technology often raises other access and management problems. In Roundabout 4, for example, synchronous combination on a single alternating current power grid of electricity from several competing high-power plants calls for independent network management to control the technical difficulties and risks. Slow, non-oscillating pipeline flows from different suppliers of natural gas are far easier to combine and control.

## Conclusion

On the basis of these observations and comparisons of regulatory priorities in different network sectors, I conclude with several tentative theses on the scope for convergence and harmonisation of different regulatory tasks.

There is considerable scope for harmonising the concept of an (independent) national regulatory authority in the EU in 2003 when the new ONP directives for electronic communication enter into force. In at least three Member States (France, Italy and the United Kingdom), the NRAs will then also deal with all aspects of broadcast regulation not related to programming of public channels. In three Member States (Austria, Spain and The Netherlands), the government will continue to reserve frequency spectrum regulation to itself.

From 2003, the European Commission will monitor the *ex ante* definition by NRAs of relevant markets and economic market power, consistent with general competition law. This may reduce the need for a parallel scrutiny by the competent national authority. It also renders concurrent powers for the NRA to apply the doctrine of misuse of market power as a more appropriate and effective complement to ONP rules.

Melody's lemma (attributed):
A multi-utility regulator's ability to deploy some staff (accountants, hearing officers, legal counsel, support personnel, etc.) in several sectors is a practical advantage which, however, cannot outweigh the political risk of collateral damage in the likely event of strong criticism of the regulator in any single sector.