

## Chapter 2

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# Beyond the Golden Age of the public network

*Eli M. Noam*

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Telecommunications policy today is an environment in which there are many battle-hardened troops, but too few strategists. There is an abundance of activities, plans, facts, fights, but only a limited analytical apparatus. We are in short supply of the Ithiel de Sola Pools, just who we need the most to get us beyond the traditional concepts that have organized thinking in this field.

What are these concepts? I find four main ones that are the golden calves worshipped by professional associations and denominations. For technologists, the primary organizing concepts in telecommunications policy are economies of scale and their first cousin, standardization. Economists worship at the altar of competition – in this case genuflecting to the triad of structure, conduct, and performance. What is an increasing disenchantment with this view is represented more in academia than in the regulatory environment. Lawyers, third in this field, judge policy issues in terms of conflict of interest, which translates here into a potential for cross-subsidies. Structures that make such cross-subsidies theoretically possible must be avoided, hence the AT&T divestiture. Finally, many social scientists, as well as most politicians and journalists, organize reality in telecommunications policy around the concept of income distribution, that is, around the question of who pays more, who pays less.

All of these concepts have legitimacy but they have been carried by their proponents to the edge of explanatory power and then some. Used single-mindedly, these notions have degenerated to rallying slogans. Perhaps the greatest common failing is that they engage in what I would call supply-side telecommunications. That is, they look at the subject from the angle of production and producers: AT&T versus MCI, inter-exchange carriers versus local exchange companies, enhanced versus basic services providers, voice versus record, and so on.

It is not surprising that this should be the natural way to look at things. After all, regulators deal primarily with carriers, technologists with networks, economists with competitors, and journalists have a horse race angle to their coverage. But this supply-oriented perspective obscures its reverse. What we need to do is engage in what could be called a demand-side telecommunications analysis. What does this perspective mean? At its most basic, we should not think of telecommunications as a service produced by carriers but as an interaction of groups and subgroups in society, facilitated by service vendors that we call carriers. The supply structure, if left to its own devices, is a reflection of the underlying interaction of communication users with each other within an all-encompassing user coalition, which we call the public network, or in several smaller user groupings along other dimensions.

Thus, we should not see deregulation and divestiture as a policy of primarily liberalizing the entry of suppliers. Just as important, it is the liberalization of an exit by some partners from a previously existing sharing coalition. Telecommunications are only one instance for widespread ascendancy in recent years of centrifugalism in previously shared social arrangements. Wherever you look, people break up all kinds of networks of interaction and form new ones. Examples abound – the public school system, the mass transit system, public safety, dispute resolution, health provision, to name a few. The departure from the public school system, for example, cannot be explained primarily by the supply of new options or by new technology but rather by an increased demand to exit. In a similar sense, recent centrifugal development in independent electric power generation had very little to do with new technology.

Perhaps it is useful to ask ourselves why it seems that there is usually only one public telephone network in each country. It is not the interconnectedness of all participants or else we would have only one large bank for all financial transactions. Interaction does not usually require institutional integrations, and this was one of Adam Smith's major insights. To distinguish telecommunications from this observation by labeling it 'infrastructure' requires us to define that term, which is almost impossible to do.

No explanation is natural monopoly. Maybe it exists for a local exchange area, but the examples of the United States, Canada, Denmark, Finland, and several other countries show that this does not prove that a widespread horizontal integration of local exchange areas is required. And if it were, why do they miraculously have national frontiers? If we

look at the birth of the monopoly system in the sixteenth and seventeenth centuries and the establishment of European postal monopolies, we see that the monopoly was unnaturally caused by politics of the revenue needs of the state, rather than by second-order conditions of production functions.

Perhaps the best way to look at the network is as a cost sharing arrangement among several users. If fixed costs are low, a new participant C can help A and B to lower the costs. This situation could be compared with the economics of swimming pools or national defense, both of which may be regarded as a public good. But although there is only one national defense system, there are many swimming pools – some of them public communals, others private communals, and still others exclusive ones.

There is a wide spectrum between the pure private good and the pure public good. We may want to share the pool with a few dozen families but not necessarily with thousands. A few might admit everyone; some maybe only admit one. The many cases in between include the telecommunications network. It is not a private good, yet it does not meet the two conditions for a public good, namely non-excludability and non-rival consumption. Indeed, non-excludability had to be established by law, and we call it universal service obligation.

What has been happening in recent years to telecommunications is what goes by the more dramatic label of 'divestiture.' Deregulation is merely a shift in the degree of intermediateness – of the intermediate position between public and private. The formation of such intermediate collective consumption and production arrangements is carefully analyzed by theorists of clubs. One can apply economic club theory to networks and show that different user groups tend to cluster together in associations according to dimensions of price, interactive density, and ease of internal decisionmaking, provided that they have mobility of choice. This can be called voting with one's telecommunications node. A reasonable assumption is that economically optimal association size will not encompass the entire population. Alfred Kahn used to put it as follows, 'People who don't have a telephone, I don't want to talk to.'

It is generally inefficient to attempt income transfers by integrating diverse groups and imposing varying cost shares according to some equity criteria. It is more efficient to allow homogeneous groups to form their own associations and then redistribute by imposing charges on some groups and distribute to others. The incentives to group formation can lead, where legally permitted to do so, to arrangements shared by alternative network associations. The process could be called the

tragedy of the common network because it is not the failing of the traditional arrangement but, ironically, its success that undermines it. The success of communalism creates the forces of particularism. In the early stages, the first network participants affirmatively seek additional participants to share costs and enhance their reach. They try to prevent new arrangements, but in time they pay a price for it because democratizing participation leads to democratizing of the control of cost sharing in a way that is redistributory. And over time the redistributory burden grows.

Furthermore, in time, the volume of the first users, who ultimately become the largest users, has risen so high that they can account for much of the cost savings of sharing just among themselves. They therefore try to form alternative network associations for large parts of their communication needs – first in-house and later with their closest suppliers, customers, and market participants. An illustration of this is found in Wall Street's 1987 Black Monday, where one would expect an enormous increase in communications traffic but the public network in lower Manhattan and the financial district increased its usage by only 10 percent over normal.

In the United States, the Golden Age of the public network, in which substantial universal service coincided with group substantial monopoly, was as brief and romanticized as the cowboy era; it lasted about twenty years from 1950, but in the mid-1960s centrifugal forces began their assault. This time-span coincides with the beginning of computer data communications as a major form of usage. In Western Europe and Japan, universal service was behind that of the United States; but it was achieved in the last ten years or so and now centrifugal forces have begun to gather there too.

Where does this all lead? It leads to normalization – nothing dramatic. Normalization simply means that telecommunications network provision will resemble much of the rest of the economy. The network environment will be essentially a pluralistic network of user associations, a network of networks that are partly overlapping and partly specialized along various dimensions such as geography, price, size, performance, virtualness, value added, ownership status, access rights, kind of specialization, extent of internationalization, and so forth.

This is not to say that domestic economies of scale and scope will become irrelevant. There still will be broad-based public networks, powerfully integrated networks with broad-band capability. But just as important will be economies of group specialization, economies of clustering, and economies of trans-nationalism.

Where does such normalization lead future regulators? It would be naive to expect less regulatory tasks. To the contrary, many disputes become less intramural and more public in that they form the regulatory realm. The main regulatory tasks that normalization raises are as follows: protection of interconnection and protection of access; establishment of new mechanisms of redistribution; prevention of oligopolistic behavior and of cyclical instability; establishment of new global regulatory arrangements to match the global scope of networks. None of these tasks is beyond our grasp in relation to their complexity or political feasibility, but they require us to end the palpable nostalgia for the simplicity of the Golden Age, and to imagine a very different environment – one in which the public network is replaced by the pluralized network.