

# Chapter XII

## Converged Networks and Seamless Mobility: Lessons from Experience

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### ABSTRACT

*Convergence in the communication industry is a reality – networks are being integrated, digital devices are being unified, and organizations seeking to take advantage of the breadth of opportunities are moving into neighboring industries. These ground-shifting changes have precipitated the emergence of what has come to be known as the Next Generation Network (NGN). Bridging the fixed and mobile divide, that enables the “always connected lifestyle”, where all electronic equipment can be connected to each other in a seamless manner, and users access a wide range of services free of any time, location, and device constraints, stands out as the most notable manifestation of an NGN proposition. This is also known as the Fixed Mobile Convergence (FMC). Given the general confusion and uncertainty that characterizes the rapidly integrated communications industry, this paper seeks to assess whether an integrated bundled network can itself become the gateway for the efficient delivery of multimedia applications and services. Applying the Resource Based View (RBV) theory, on the recent developments in the FMC space, this paper concurs with industry-wide skepticism and provides guidelines for the fulfillment of the NGN promise.*

### HISTORICAL CONTEXT

According to what has come to be known as the Telecommunications Old Paradigm, the telecommunications industry rested on three structuring principles: first, protected franchise. Domestically incumbent telecommunications operators enjoyed steady revenue flows stemming from the exploitation of their own (mainly monopoly controlled) networks (see Table 1).

The second structuring principle was quarantined Operators. Public Telecommunications Operators (PTOs) were restricted from the conduct of any affairs outside their pre-determined sphere of control and as such, were

Table 1. International competitive regimes (selective) (Owen, 1991:53)

Country	Local	National	International
USA	Limited	Yes	Yes
Japan	Yes	Yes	Yes
UK	Yes	Yes	Yes
Germany	No	No	No
France	No	No	No
Other EU	No	No	No

further barred from exporting their experience and influence into adjacent and more competitive markets. The third structuring principle was what the industry referred to as the “*cradle to grave*” regulation. Based on a bilateral framework (see Figure 1), prices, terms, and conditions of the PTOs service had to be sold to the regulators before they could be sold to the customers.

Technologically, under the old paradigm, PTOs by and large operated within an industry that consisted of three layers (see Figure 2).

In the first layer of the old paradigm, switches, transmission systems, and customer terminals were produced and were combined to form the telecom networks.

Within the natural monopoly hypothesis that underpinned most of the PTOs, the equipment layer was less regulated. The production of telecommunications equipment varied in its organization. On the most liberalized end of the scale, there was a pattern of vertical integration. On the less liberalized end, PTOs of smaller countries were less integrated in their operations. For most of them, equipment was procured from a handful of globally competing suppliers. The middle ground was covered by industrialized nations, whose domestic markets were sufficiently large to cover their equipment needs (see Figure 3). It is not surprising that from the 1950s and onwards, most of the technological developments occurred in this layer.

In the second layer, although individual countries did vary significantly, they all shared a common underpinning technology. Namely, dedicated circuits that connected the sender to the information recipient or to the circuit-switched networks. It wasn’t until the 1970s that the first commercial packet switched data network (PSDN) made a shy appearance and slowly started to change the nature of the products and services offered. Under the old paradigm and towards its later years, the main services (Layer 3) that monopoly network operators offered and pretty much defined the industry, were to a large extent confined into voice, fax, and enhanced services (i.e., toll free numbers).

## Shifting Sands: Emerging Paradigm

The liberalization of the European telecommunications industry was a gradual process that begun in 1984 and underwent four phases:

- Preparation for harmonization (Green Paper publication)
- Transition from monopoly to phased competition (White Paper on the single market and competition rules)
- Implementation of asymmetric regulation (imposition of restrictions to the former monopolies and a directive for opening up access to their networks)
- Application of EU-wide competition law (regulatory framework for electronic communications network)

Next to the politically driven institutional reforms, a quiet yet rapid ‘convergence’ started to take place and radically reshaped the global telecommunications field. The term itself is an *ex post* construct which aims to

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