

BOOK REVIEW- THE JOURNAL OF ASIAN STUDIES

*Telecommunications in the Pacific Basin: An Evolutionary Approach.*

Edited by Eli Noam, Seisuke Komatsuzaki and Douglas A. Conn.

New York and Oxford: Oxford University Press, 1994. xvii, 514 pp.

According to the International Telecommunications Union's *World Telecommunications Development Report* (Geneva: 1994) the Asia-Pacific region experienced the highest average annual growth rate (nearly 12 per cent) of mainline telephone circuits in the world over the decade 1983-92. Yet this still leaves countries like China and Indonesia, which are home to one-quarter of the world's population, with less than two telephone lines per one hundred inhabitants. At the other end of the regional scale, by 1992 Canada, the USA and Japan could boast of sixty, fifty-six and forty-eight telephone mainlines per one hundred inhabitants respectively, basically one for every household that wanted one, or universal service.

Periods of sustained economic growth bring societal changes, and the area of the Pacific Basin is no exception. Indeed, because the region includes some of the fastest growing low-income countries, and many of the world's newly industrializing countries, the term social change is inadequate, social transformation being nearer the mark. In the 1990s telecommunications are part and parcel of this process, and governments throughout the region, as well as business and social users, are alive to this fact. As a result, in the developing economies traditional state-run posts, telegraph and telephone bureaucracies (PTTs) are giving way to commercially-oriented, but regulated, telecommunications enterprises, and increasingly their monopoly is being replaced by selective competition. This is even true of Communist China. In the developed industrial economies, Australia, Canada, Japan, New Zealand and the USA, the process has gone further. New types of networks, such as Internet, X.400 information service providers using X.25 networks, cable TV networks, satellite and mobile networks, closed-user group corporate networks, and so on, are eating into the previously exclusive domain of telecommunications operating companies.

Change in the region is clearly dynamic, not least because the technology is changing so fast, and countries building out their networks from scratch today can leapfrog directly into the digital age. Until now no single academic publication has been available which sets out to survey these developments systematically from a public policy perspective. This one does, and it is to be welcomed. Its topic is timely, unfortunately its publication is a little less so. The book consists of twenty-five essays divided into four sections, the first three essays providing theoretical insights into network evolution, the next eight providing accounts of network developments in China, Indonesia, Malaysia, the Philippines, Thailand and the Pacific Islands, and the next seven examining the four tiger economies (Hong Kong, Singapore, South Korea, Taiwan) and Australia, and the final seven devoted to the remaining industrialized countries, and a round-up. The first problem that strikes the reader is that they mostly refer to events before 1992. It is understandable that editing a book of so many contributors is bound to encounter delays, but

this seriously outdates a number of the contributions, very notably those on China, Hong Kong, Indonesia and the Philippines.

The location of Australia alongside the tiger economies is explained by the editors' central thesis, which is spelt out in the opening essay of Eli Noam who argues a model of network evolution. Initially, when the network is small subscribers gain little utility from joining the system, so finance is mainly through subsidy. But as the network expands, average costs fall ("cost sharing") and subscriber utility rises until a critical mass is reached when, in principle, the network can be self-financing. At some point average costs start rising and the utility brought to existing subscribers by the marginal subscriber diminishes. The "private optimum" point of network growth has been reached and the phase Noam calls "self-sustained growth" closes. Continued expansion of the network increases social utility (universal service objectives) but increasingly the allocation of resources for network expansion and tariffing policy becomes redistributive, driven by social policy. Noam calls this "entitlement growth." Average costs eventually rise above the value derived by a sub-set of existing subscribers by further network expansion. This sub-set then has an incentive to opt out of the public network into stand-alone private networks. This is the "exit point." The drive to universal public service then requires renewed subsidy. According to the editors, Australia is a vast sparsely populated country still at the stage of "entitlement growth." New Zealand, by contrast, has already reached the exit point.

The idea seems neat, and the structure of the book imposes an apparent conformity to the model. But do these economies, and their policy regimes, really conform so neatly? One problem with the book is that most of the essays do not actually address this question openly. Another problem is that in the developing and newly-industrialised economies most of the dramatic policy changes, and certainly the most dramatic policy changes, have taken place over the past two years. This is unfortunate for some of the essayists. Ken Zita's otherwise excellent insights into China's telecoms industry, unequivocally pronounces that the State Council will allow no competitors to the Ministry of Posts and Telecommunications "at any time before 2000" (p.89) and is "unlikely to accept" (p.100) loans, and therefore strings, from the World Bank. China has done both. Equally seriously out-of-date are the essays on Hong Kong, Indonesia and the Philippines.

But there is a problem with Noam's model. It is too linear. And it seems to ignore the outstanding element of rapidly changing telecommunications technologies. Whether average costs did or did not tend to rise under the old electro-mechanical and semi-electronic technologies is arguable, but the revolutions in micro-electronics, optical fibre technology, and digital-compression radio techniques, to name just a few, have shifted the position and changed the shapes of the costs curves. On the one hand, this strengthens Noam's assertion that the stand-alone costs of new entrants who offer a sub-set of the main carrier's services will be a competitive incentive for many users to leave the system (providing, of course, interconnection with the public network is available). On the other, it enables developing economies to invest in state-of-the-art digital and high-speed switching and transmission technologies, leap-frogging

earlier stages. This creates conditions in these economies which allows them to introduce multi-networking at a much earlier stage, but less motivated by providing an exit point for sophisticated end-users, who are still rather scarce in many Asia-Pacific economies, than as a means of mobilizing local capital to finance public network expansion.

This raises the further issue of what is really driving telecommunications development and policy in the region? A purely evolutionary approach would suggest a natural projectory of developmental stages, but by being catapulted into the global economy many of the developing countries of the region are finding their development being unevenly spread between the regions that trade with the world and the more isolated, especially rural, regions which remain domestically oriented. The vital role of telecommunications in international production, distribution, exchange and finance. is pressurising governments to accelerate its development, while at the same time find ways to maintain social and political goals of more equitable access to telecommunications. Several stages of Noam's model would seem to be manifest in one and the same country.

Each eassayist has been given a template, which involves an historical, mostly but not totally, descriptive narrative, and a current overview of the industry, including its relation to equipment manufacturing