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The Important Links in Pacific Basin Telecommunications

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Although there are immense geographical distances between the countries of the Pacific Basin, economic and political forces have effectively reduced them. As the chapters of this book have repeatedly pointed out, these linkages have relied heavily on international telecommunications.

The past decades were a time of enormous vitality for the communications sector in the Pacific Basin, mirroring and supporting the rapid expansion of the economies in that region, with international telephone traffic growth rates of as much as 25 percent in some countries. In comparison, annual growth in the United States was about 18 percent and 15 percent in the European Community. The Pacific Basin is the fastest growing region for telecommunications investment and traffic growth.

The twenty-four preceding chapters have examined the myriad changes of the telecommunications sector in the Pacific Basin. This chapter first maps out the regional collaborations and interactions that have spurred liberalization. It then discusses common policy themes in the region.

25.1 International Links

The fast growing economies of the Pacific Basin are highly interdependent with the rest of world. Collaborations that facilitate these connections have become a necessity. They include:

- Trade agreements in telecommunications equipment and services
- Joint ventures and foreign investment in manufacturing and service provision
- Physical links via satellite, cables, or other transmission technologies
- Common policies towards both domestic and regional telecommunications.

National control over links, long a predominant concern, is no longer the first priority. International links have tended to raise the expectations of users and providers alike. For example, more Pacific Basin countries have opened up their international long-distance markets faster to competition than any other region in the world. This may be attributed to their need to meet the rising demand of the region to communicate and conduct business overseas.

There are many reasons telecommunications are undergoing change throughout the region. Some are due to each country's unique political and economic system, while others can be attributed to more general trends. Collaboration between countries (bilateralism), among blocks of countries (multilateralism), or among the regions of the world (interregionalism) have changed the topology of regional telecommunications networks and the agreements that both linked and separated them.

Pan-Asian bodies with working groups on telecommunications such as the Asia Pacific Economic Council (APEC), Pacific Trade and Development Conference (PAFTAD), and the South Pacific Forum (SPF), as well as the Pacific Telecommunications Council (PTC) and the Asia-Pacific Telecommunity (ATC), are attempting to forge a regional bloc that can encourage the rapid growth of advanced telecommunications, not unlike the transnational organizations of Europe (CEPT, RACE, etc.). Regional collaboration has already resulted in more open trade in equipment and services as well as, in some cases, in trade friction, both within the region and with other regions.

25.2 Trade and Foreign Investment

Trade in telecommunications equipment throughout the region has risen in step with the increasing liberalization of telecommunications markets. Large multinational manufacturers in Japan and Korea have created a trade surplus in telecommunications equipment between their countries and the rest of the world. However, many other countries in the region do not manufacture products and have noticeable trade deficits. The United States, which is a leader in equipment manufacturing has nevertheless realized a trade deficit in telecommunications equipment since 1983.

In terminal equipment, the countries of the Pacific Basin are by far the largest manufacturers in the world. The top five exporters to the United States, for example, are Japan, Canada, China, Malaysia, and Taiwan and the region overall accounts for nearly 90 percent of all U.S. customer-premises equipment (CPE) imports. In 1991, foreign imports captured some 60 percent of the U.S. market, with Japan alone accounting for some 30 percent. The United States continues to be successful in large-scale telecommunications equipment trade. In satellites, it holds almost two thirds of the world market.

Direct foreign investment in domestic markets for manufacturing and training has increased dramatically in the region over the past decade. Assembly plants for electronics and telecommunications equipment have been prevalent in low wage countries such as Malaysia, Indonesia, Thailand, and the Philippines.

In services, foreign operation, (and in some cases ownership), of domestic networks and local service is becoming a field of expansion for North American and European operators. The lack of Japanese presence in network services in foreign markets has been primarily due to de facto restrictions concerning overseas operations in domestic markets placed on NTT and KDD by the Japanese government.

25.3 Satellites and Undersea Cables

As international telecommunications networks have grown so have the minutes of international traffic. The international routes with the highest level of traffic in the Pacific region are between the United States and Canada, the United States and Japan, and, interestingly, between Hong Kong and China. More calls are made to China from Hong Kong than any other route except for the United States to Japan. This is all the more remarkable given China's relatively slow development of telecommunications.

The region holds many of the fastest growing international telecommunications carriers in the world. As Table 25.1 shows, of the top ten fastest growing international carriers of public switched service between 1986 and 1990, seven were carriers based in the Pacific Basin. The number would be eight, if Cable & Wireless (C&W) were included geographically—not an unreasonable proposition since a large share of its international traffic originates from Hong Kong, where it operates the local telephone company. The number would again be

Table 25.1. The Fastest Growing International Telecommunications Carriers *

Carrier	Cumulative Growth, 1986–1990 (%)
Sprint (U.S.)	686
MCI (U.S.)	649
Comm Auth of Thailand	570
Cable & Wireless (U.K.)	565
Embratel (Brazil)	196
Bezeq (Israel)	187
OTC (Australia)	159
Teleglobe Canada	153
China PTT	142
KDD (Japan)	139

Source: Staples 1991

*Determined by minutes of telecommunications traffic—public circuits only.

Note: Carriers not in service in 1986 are not included. Sprint and MCI traffic excludes traffic to Canada and Mexico. China PTT is for 1988–1990.

higher if Japan's two new international common carriers, International Digital Communications (IDC) and International Telecom Japan (ITJ) (which began service in 1989), were included. Regionally, about 40 percent of all outgoing international calls in the region are made within Pacific Asia, with approximately 20 percent made to North America and 10 percent to the European Community (see Staples 1991).

Satellites and underseas cable have been the primary linkage mechanisms. For satellites, the emergence of private carriers has meant that the politics of transborder flows of voice, data, and television is forever changed. For underseas cable, the multiparty ownership of individual cables has resulted in a plurality of public and private owners, users, and service offerings, previously unknown in the region, but prevalent in the Atlantic. As a result, the suboceanic cables are more and more perceived as dedicated rather than public networks.

In the past, international satellite communications were primarily the domain of Intelsat. Domestic satellite systems include JCSat and SCC of Japan, Palapa of Indonesia, and Aussat in Australia. The latter two have also offered regional service to neighboring countries' government-operated telephone companies.

The first major breach with the traditional ownership of satellites came with the launch in 1990 of Asiasat. Asiasat was literally an overnight success; its entire capacity was sold out by 1992. Owned and operated by a large Hong Kong firm, with equity stakes taken by C&W and the China Investment and Trading International Corporation, its footprint extended from the Pacific across Asia to the Middle East. Asiasat's crossborder transmissions raised cultural issues due to its English and Mandarin Chinese programming and real economic issues because it represented the first private carrier with the potential to compete directly with Intelsat and other domestic satellites in Pacific Asia.

Asiasat's de facto opening of the Asian skies sent encouraging signs to other carriers to enter the pan-Asian market. In addition to Indonesia's Pasifik Satelit Nusantara (PSN) (owned by Palapa), other smaller countries, such as Thailand and Malaysia, sought the autonomy and revenues that their own satellites would offer. A number of new private international satellite carriers with substantial non-Asian ownership have also emerged. These include Celestar, a subsidiary of U.S. McCaw Cellular, Pacific Satellite, Inc. owned by TRT Communications (a subsidiary of Pacific Telecom-U.S.) and a number of regional PTTs, Orbx, a subsidiary of U.S. Alpha Lyracom, and TongaSat, whose major funding would come from an American entrepreneur and other investors.

Private suboceanic cables are also a permanent part of telecommunications in the Pacific Basin. There has been much diversity in the ownership of cables; in fact, this is true to a much greater extent than satellite ownership. Submarine cables were traditionally owned and operated by government PTTs or monopoly telephone companies. However, since the first private link was introduced in 1989, the Pacific Region has witnessed a dramatic increase in the number of entirely private cables both constructed and under consideration. In 1988, the first major fiberoptic submarine cable, TPC-3, was installed. All installed cables

since then have used fiber, which offers much greater capacity, shorter response times, and lower unit costs per circuit.

Since 1989, some sixteen cables have either been constructed or proposed. There are a wide range of ownership models for many of these systems. Some are owned by as few as two or three carriers, but others are owned by many more. For example, the HJK cable, which links Hong Kong, Japan, and Korea, came on line in 1990 with some twenty-seven partners. Usually, the telephone operator in the landing country will have a stake, as will other private operators and large corporate users with a particular interest in a specific route. Large international carriers have actively participated such as C&W, France Telecom, AT&T, and Sprint.

Where these multinational cables converge is an important question. Several countries are vying to become high-tech hub sites where the region's international traffic is aggregated and then redirected, much like some countries that have established open ports of trade. The benefits that accrue to the hub site are major including substantial revenues from transiting traffic, siting advantages for multinational corporations, and more rapid technology transfer. Both Hong Kong and Singapore have positioned themselves as the primary hub sites for telecommunications passing in and out of the region. Tokyo is also bidding for the position, and with a strong market behind it—although its local costs for land, labor, and materials tend to be higher than either Hong Kong or Singapore.

As the number of international and regional satellite and underseas cables increase, they drastically lower prices, increase usage, and thus shrink the distance between and within countries. This further accelerates the policy and structural changes in the various countries. International links will push domestic liberalization and act as a transmission belt for an exportation in telecommunications liberalization across the region (Noam 1992).

25.4 Domestic and Regional Policies

The policy changes occurring in telecommunications in the Pacific Basin are common to the industrialized regions of the world. Market structure within the telecommunications sector of various countries is changing rapidly, national monopolies are being privatized, and firms are turning to global markets for growth while positioning themselves to compete on the international level.

Though the Pacific Basin is very heterogeneous, some economic, political, and social issues are common.

1. Wherever one looks, the telecommunications sector is receiving increasingly high national priority; however, this manifests itself in different ways. In some countries, the private sector is invited in as part of a rejuvenation. For example, the privatization of New Zealand Telecom was a means to stimulate economic growth. On the other hand, some countries strengthen the role of the state. In Singapore, for example, an activist government has dominated the

electronic sector and instituted various national initiatives in computers and telecommunications. It began to turn to privatization only after that mission was a success.

2. A liberalization and restructuring of the telephone monopoly is occurring simultaneously and rapidly throughout most of the region. New experiments in competition policy are often being developed outside the largest countries. For instance, Hong Kong has permitted a new entrant to provide cable television with the goal of creating competition in the delivery of all local telecommunications services. New Zealand has opened its entire market, both domestic and international, to competition.

3. Whatever the new policies, the emphasis by governments on the expansion or preservation of affordable universal service remains strong. In some countries like Indonesia, the Philippines and many of the Pacific Islands, basic telephone service penetration remains at low levels and the spread of basic telephony is therefore priority. In these countries, a primary concern is the financing of a basic network. In countries with more advanced telecommunications, such as Taiwan and South Korea, large and accelerating investments in universal service are taking place, too, as these countries reach higher stages of industrialization. In advanced countries such as the United States, Canada, and Japan, basic service is being actively protected by government policy from erosion, while the definition of universal service is being broadened beyond voice service.

4. There appears to be no significant reduction in the use of the telephone network for purposes of raising and distributing revenue for a variety of social goals. Cross subsidization remains an important factor everywhere as network development continues—including cross subsidization between operations, geographical areas, and governmental functions. In China, funds are shifted from the central Ministry of Posts and Telecommunications to provincial authorities as a means of redistributing income from economically revitalized eastern provinces to less developed western provinces. In the United States, poor people are subsidized through “lifeline” service at rates as low as \$1 per month, and rural users are supported in a variety of ways.

5. Large users—domestic and foreign, private and public—have become an effective lobbying force for change in telecommunications regulation. They have applied pressure for the introduction of new service and for restructuring of telecommunications institutions. In South Korea, the introduction of DACOM, a competitive carrier, was followed by increased lobbying of larger conglomerates to establish more competition in telecommunications. In several countries, private and public sector users have gone beyond political avenues and fashioned their own facilities-based private networks. Private networks based on dedicated leased circuits grew rapidly everywhere.

6. There has also been a trend toward network pluralism in access, provision, and ownership. As deregulatory policies were introduced, some sectors of the industry experienced a rapid increase in the number of providers. In Japan, South Korea, and Taiwan, for example, new entrants provide services through value added network services (VANs). In Japan, Korea, the United

States, Canada, Australia, and New Zealand, alternative facilities-based carriers operating their own networks compete with the former monopoly carrier.

7. Resistance to the introduction of competition in the highly profitable international telecommunications services is declining. The United States, Japan, and South Korea have permitted the entry of alternative carriers in their international long-distance market. This has paved the way for a number of countries to permit these new carriers landing rights to their national systems.

8. Domestic carriers whose own markets have become more open, have begun to branch out and increase their attention to overseas markets as a means of improving prospects for growth. This has often meant strategic international alliances. The American carrier BellSouth has a stake in Optus Communications Group, an Australian long-distance and cellular carrier. In New Zealand, two other Bell Companies, Ameritech and Bell Atlantic, have purchased a majority stake in New Zealand Telecom. Bell Canada and MCI have also invested there. NYNEX, an American Bell company, has a substantial stake in a fiber ring network in Thailand. NTT has ventures with local monopoly carriers in countries such as Indonesia, the Philippines, and Thailand C&W has a long-standing presence in the region, especially in Hong Kong and the Pacific Island nations.

9. As telecommunications activities have expanded overseas, trade frictions have developed, especially between countries that have liberalized their markets and those seeking to protect their traditional networks. Foreign pressure has played a considerable role in the opening of some markets. In the cases of Japan, Korea, and Taiwan, trade negotiations with the United States had an impact on the government's equipment procurement policies. In Japan, the cellular industry was restructured, procurement policies were changed, and partial foreign ownership was permitted of VANs. In both cases, concessions were made to guarantee reciprocity in U.S. markets.

10. Political constellations are shifting. The dynamics of the telecommunications industry in the Pacific Basin go well beyond technology. They are a reflection of many political and economic changes. Political institutions that were once tied ideologically to a strong central government and nationalized services, have often consented to a dismantling of the national telecommunications monopoly. The Labour Party in New Zealand is an example. The entire telecommunications sector there has been opened to competition and the national carrier has been privatized and sold to foreign entities. At the same time, Australia's strong trade unions and its Labour government played an integral role in slowing liberalization.

These observations indicate the breadth of change occurring in the region. The forces of globalization and their impact on economic development have caused economies to be more open to change and regional cooperation. As the more-industrialized countries in the region have opened their markets, and the less-developed have followed with their own initiatives, the rest of the world has begun to take notice. The lessons learned from these new developments will be valuable to those countries undergoing or anticipating economic and tech-

nological change. Telecommunications linkages will play a crucial role in the expansion of the world's most economically vibrant region.

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Bibliography

- Aronson, Jonathon and Peter Cowhey. 1988. *When Countries Talk: International Trade in Telecommunications Services*. Cambridge, MA: Ballinger Publishing Company.
- Barber, Richard. 1989. "Pacific Telecommunications: The Role of Regional Telecommunications." *Columbia Journal of World Business* 24(1): 101-3 (Spring).
- Conn, Douglas. 1992. "Domestic Telecommunications Policies in the U.S. and Japan: Their Impact on Trade Relations." In *United States-Japan Trade in Telecommunications: Conflict & Compromise*, Meheroo Jussawalla, ed. Westport, CT: Greenwood Publishing.
- Conn, Douglas. 1992. *Telecommunications Equipment Trade Between Japan and the United States: The Cases of Satellites and Cellular Telephony*. Working Paper # 478. New York: Columbia Institute for Tele-Information. Columbia University.
- Noam, Eli M. 1992. *Telecommunications in Europe*. New York: Oxford University Press.
- Poe, Robert, and Joyce Quek. 1990. "Projects Merged." *Communications Week International*, p. 6 (Sep. 3).
- Sato, Harumasa, and Rodney Stevenson, "Telecommunications in Japan: After Privatization and Liberalization," *Columbia Journal of World Business* 24(1): 31-41.
- Schwartz, Adam. 1992. "A Giant Stride." *Far Eastern Economic Review*, pp. 47-49 (Jan. 23).
- Staples, Gregory, ed. 1991. *The Global Telecommunications Traffic Report—1991*. Washington, D.C.: International Institute for Communications.
- Westlake, Michael. 1991. "Bed-time chats." *Far Eastern Economic Review*, pp. 52-53 (Mar. 21).