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**THE CHANGING ROLE OF TELECOMMUNICATIONS IN THE ECONOMY:
GLOBALISATION AND ITS IMPACT ON NATIONAL TELECOMMUNICATION POLICY**

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Paris 1995

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FOREWORD

This report was prepared for the ICCP Committee by Yoshiko Kurisaki, then of the Secretariat. The Committee for Information, Computer and Communications Policy agreed, at its meeting of 20-22 October 1993, that the report should be made available to the public on the responsibility of the Secretary-General of the OECD.

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EXECUTIVE SUMMARY

Since the end of the 1980s, the increasing globalisation of corporate activities (in both the manufacturing and service sectors) in OECD Member countries has spilled over into the telecommunication sector, thus creating fundamental changes in the paradigm of international telecommunication service provision. A growing number of public telecommunication operators (PTOs) are extending their business activities, either explicitly or implicitly, to countries outside their home territory. Although a relatively new phenomenon, these activities have expanded dramatically.

Increasingly, the target market for services is expanding beyond those to whom national telecommunication policy is addressed. In the past, both telecommunication policy and services were addressed to national users. Services are being extended to include both national and foreign users in national and foreign markets. A number of policy issues thus arise. Asymmetry in the level of liberalisation between OECD countries adds to the economic impact of PTO globalisation. Thus, national telecommunication policy has broader cross-border implications than was the case in the past.

New forms of PTO activity in the international market are increasing, and include: *i*) telecommunication services (*e.g.* discounted voice telephony services through the simple resale of leased circuits and third-party calling services); *ii*) foreign direct investment; and *iii*) off-shore services provided by PTOs (*e.g.* so-called "one-stop-shopping" and "outsourcing"). These activities will place competitive pressure on PTOs and generate many issues in the current vacuum of national telecommunication policy.

PTOs will compete with each other for both national and foreign customers; however, geographical constraints on their ability to provide services will, at the same time, force them to co-operate. Existing national network facilities continue to be the basis of PTO expansion beyond national boundaries. Such a business environment may eventually create market oligopoly in international telecommunication markets.

PTO globalisation, which originally started in some of the countries in which the telecommunication sector was liberalised, puts competitive pressure on all PTOs in Member countries, even those that may have no intention of obtaining profits from international markets (the "incoming" dimension of globalisation). The economic significance of this dimension should not be overlooked.

Ongoing liberalisation in the use of leased circuits and globalisation activities by PTOs are creating competition between PTOs and large users of corporate global networks. In fact a country that does not liberalise telecommunication regulation will miss out on economic benefits for want of locational attractiveness to large users. PTOs and users will develop two-way relationships, with advantages and disadvantages for both sides.

Few policy instruments in national telecommunications correspond to PTO globalisation. Rules for the control of foreign direct investment in national PTOs are a rare example. Although an increasing

number of Member countries are formulating such rules, the aforementioned asymmetry in the level of liberalisation in telecommunications between Member countries gives rise to several international policy issues. These include the possibility of subsidised competition between PTOs with different statuses, appropriate beneficiaries of PTO investment, and the level of transparency in market access to the telecommunication sector.

Increasingly complex interrelationships are created between telecommunication, trade and competition policies as PTO activities abroad increase. An examination of these different policies needs to be undertaken in order to find a possible framework for telecommunication policy that can adjust to the globalising economy. The chapter of the North American Free Trade Agreement (NAFTA) dealing with telecommunication services is a pioneering example that suggests a possible formulation for service trade agreements in this sector.

The current scene in international telecommunications is becoming "chaotic", and the existing framework of international telecommunications is increasingly undermined, a situation triggered by market liberalisation. Globalisation may be seen as a way for PTOs to adjust to ever-increasing competition on both domestic and international markets.

Problems arise concerning the direction of the adjustment. Neither free competition supported by transparent rules nor a government monopoly is desirable. The former will not solve the distortion problem in a market that was, until recently, legitimately ruled by a monopoly service provider. The latter is obviously undesirable, since the benefits of competition are clear. A realistic policy option may be to formulate a set of rules that ensure fairness in market competition.

Ongoing PTO globalisation is likely to create a challenge for smaller PTOs. Those PTOs that do not have large national markets or a number of multinational enterprises in the home country must -- whether they take the initiative or are forced by events -- sooner or later compete with large PTOs based in large foreign markets. Policy-makers in the smaller countries need to recognise this fact.

The international dimension of national telecommunications policy is increasing. No one country may be able to solve the problems that have arisen from PTO globalisation. International dialogue should be continued in order to meet the challenge.

I. Introduction

A change in the paradigm

The increasing globalisation of corporate activities (in both the manufacturing and service sectors) in OECD Member countries has spilled over into the telecommunication sector since the end of the 1980s, thereby creating fundamental changes in the paradigm of international telecommunication service provision. A number of public telecommunication operators (PTOs)¹ are extending their business activities, either explicitly or implicitly, to countries outside their home territory. Although these activities are a relatively new phenomenon, the speed of this expansion has been dramatic. In monetary terms, investment in global activities may be relatively small when compared to total PTO investment covering installation and improvement of network facilities. Its strategic importance should, however, not be overlooked.

PTOs traditionally restricted their activities to domestic markets. International telecommunication services did exist in the past, but the role played by the PTOs was different. International telephony services were operated as an extension of domestic services under bilateral agreements between PTOs. The PTOs' role in international services was to interconnect domestic networks in different countries. The International Telecommunication Union (ITU) has been serving as a forum for PTOs to formulate commonly-needed technological standards and other operational rules (such as principles of international tariffs). Under this system, each PTO was considered to represent each country's interest, and did not share its customers with other PTOs. There was very limited competition between PTOs in international telecommunications, although a certain level of competition exists in some cases, such as for transit traffic.

PTO globalisation in its current forms is different in nature from the traditional international telecommunication services described above. Many PTOs in OECD Member countries are extending their geographic coverage of service provision beyond their national boundaries. New services are increasingly available to customers outside the home country. Such services go beyond the simple interconnection of domestic networks between two different countries. Many PTOs are developing distinctive features as global, rather than as local, enterprises. As a result, they increasingly compete with each other on international markets.

PTO globalisation includes activities separate from trade and foreign investment. Most globalisation in fact occurs between those two, as the example described below indicates:²

"One of the largest French insurance companies (A) has a corporate network system over 14 locations in seven countries in Europe and North America to transmit and process various data, such as insurance, accounting and financial reports. This system was operated on a number of X.25 public networks based on agreements with PTOs in seven countries. Company A, when it upgraded the network, awarded a contract to British Telecom (BT, the United Kingdom) to use its Global Network Services (GNS). GNS is an international value-added network that consists of communications processors connected by a network of leased circuits, microwave links and

satellite channels. British Telecom has installed communications nodes in major cities in Europe, North America and Asia. Company A is now freed from the complicated task of negotiating with PTOs in seven countries and handling many different standards. British Telecom's contract includes a further update of the corporate network system that includes voice and image transmissions."

There are a increasing number of similar examples with other combinations of nationalities of PTOs and their users. The example above illustrates the following changes in international telecommunications which have significant policy implications:

- the nationality of the PTO does not matter to the customer;
- the nationality of the customer does not matter to the PTO;
- PTO are both customers of, and competitors with, each other.

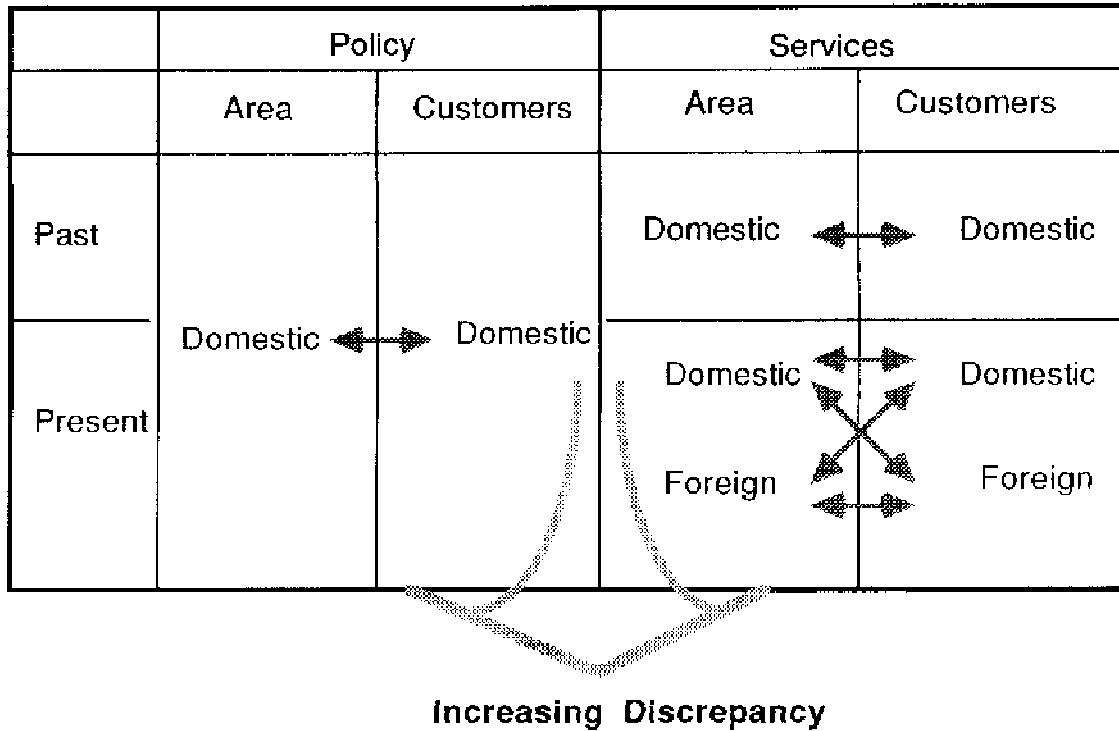
What matters to customers is the quality of services and costs. If a service-provider satisfies customer requirements, its nationality will not matter to the customer. This is economic logic. On the other hand, national telecommunication policies are concerned with the nationalities of users since they are originally formulated for the welfare of the national public. This is political logic. A possible contradiction between the two systems of logic is emerging from the sphere of global telecommunications.

PTOs are increasingly adopting contradictory roles in relation to each other. In service provision to customers in foreign countries, a PTO is both a customer and a competitor of the PTO in the host country. In the example of British Telecom's GNS, British Telecom is a customer of the French PTO France Telecom since the former leases circuits from the latter in order to provide GNS in France. British Telecom is, at the same time, competing with France Telecom in pursuing customers located in France, such as company A.

There is a growing discrepancy between recipients of national telecommunication policy and recipients of telecommunication services (Figure 1-1). In the past, both telecommunication policy and services were addressed to national users. This still holds true for policy, but services are being extended to include both national and foreign users in national and foreign markets. A number of policy issues arise from this discrepancy. Asymmetry in the level of liberalisation between OECD countries adds to the economic impacts of PTO globalisation, giving birth to a set of policy issues relevant to all countries. Thus, national telecommunication policy has broader cross-border implications than was the case in the past.

This report is intended to provide empirical data regarding PTO globalisation and users' interests, and to formulate policy questions regarding the implications for current national telecommunication policy in Member countries.

Figure 1-1
Mismatch between Recipients of
National Telecommunications Policy and Services



The report focuses on PTOs because they are traditionally highly domestic institutions and play a significant role in the shaping of national telecommunication policy. International telecommunication consortia that provide international transmission routes to PTOs and large users, such as INTELSAT and IMMARSAT, are excluded from this analysis. While these institutions are instrumental in shaping competition in international telecommunication markets, their impact on national telecommunication policy is relatively indirect when compared with those of national PTOs. A major message of this report is that even national policies for the domestic sector of national telecommunication services -- which were until now considered to be more or less removed from international dynamics -- are feeling the direct impacts of economic globalisation.

The focus of the analysis is on telecommunication services, not equipment. This is because most Member country governments traditionally considered telecommunications to be an important public service. Its provision (tariff, options, etc.) and regulation have been of major importance in telecommunication policy in all Member countries. The impacts of globalisation on the telecommunication equipment sector will, however, be discussed in connection with the international implications of market liberalisation.

It should be noted that this report is a preliminary assessment of a rapidly-evolving area. Although this area is important to all Member countries, there is not yet a consensus on the direction or meaning of key trends and developments regarding PTO globalisation. The OECD is contemplating further survey and analysis of various subjects related to the globalisation issue.

Structure of the report

Following the introductory discussion in this section, Section II examines new PTO globalising activities, including: *i*) new service options in the provision of existing international telecommunication services; *ii*) foreign direct investment (FDI); and *iii*) off-shore services provided by alliances between PTOs (*e.g.* so-called "one-stop-shopping" and "outsourcing"). National and international policy implications are identified. The interests of users of global telecommunication systems are also examined in order to clarify the policy implications of PTO globalisation as viewed from the point of view of the receiver of services. However, the distinction between user and supplier appears to be evaporating in global corporate network markets.

Section III analyses the main factors that have motivated major PTOs to extend their business sphere on a global scale in the economic, technological and political contexts. These factors include: the ever-growing dependence of nations on the economy beyond their national boundaries; the decreasing profit margin of PTOs in their domestic market due to competition in telecommunication services; and the increasingly diverse nature of PTO competitors due to the convergence of information and telecommunication technologies.

The implications of PTO globalisation for national telecommunication policies will be assessed in Section IV; the focus is on policy instruments for the control of foreign ownership of PTOs. Market liberalisation in an increasing number of countries has opened investment opportunities abroad; explicit, as well as implicit, policy instruments for control are analysed. Views of countries whose PTOs are investing in foreign countries, as well as those of countries receiving investment from foreign PTOs, are included in the analysis.

In Section V, conceptual analysis of interrelationships between telecommunicatins and two orginally different, but closely related, policies, *i.e.* trade and competition policies, is undertaken in search of a possible framework for telecommunications policy that can adjust to a globalising economy. A possible framework for the analysis of these policies will be proposed. New movements in the formulation of rules for the integration of telecommunication services in a regional trade agreement are discussed, drawing upon trends observed in two recent experiences in North America, specifically the Free Trade Agreement between Canada and the United States in 1988, and the North American Free Trade Agreement (NAFTA) between Canada, the United States and Mexico in which took effect on 1 January 1994.

Section VI summarises national and international policy issues arising from international telecommunication markets.

II. Globalising Activities by PTOs

Increasing globalisation

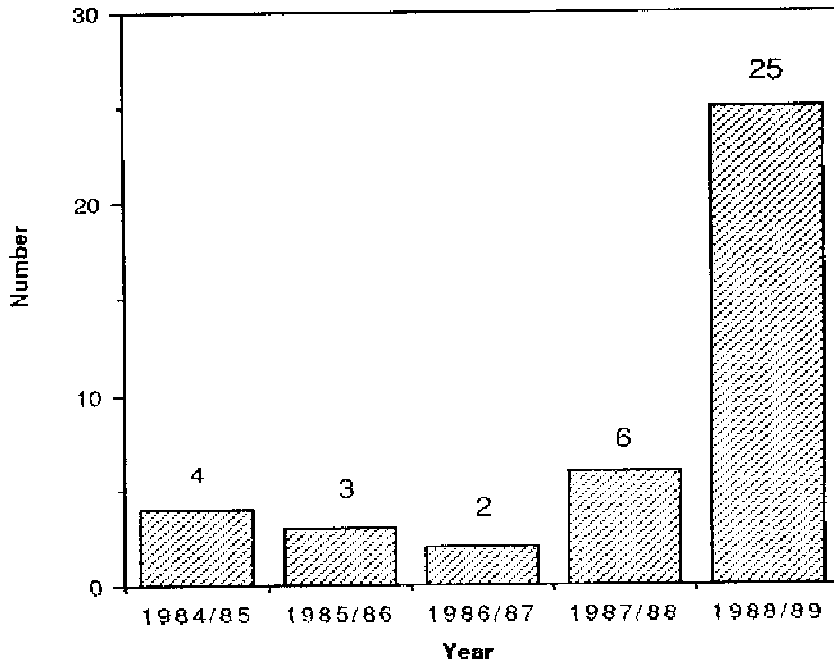
Rapid growth in the level of international investment by PTOs in telecommunications and in the number of options in international services has occurred only in the past few years, but has been dramatic. The major PTOs in Member countries are becoming increasingly dynamic and outward-looking, regardless of their status (*i.e.* government, private, or owned by both). FDI by PTOs is not necessarily a new phenomenon. There are many earlier examples of investment by European PTOs in the telecommunication sector of countries in the Asia-Pacific, Caribbean and African regions. Recent FDI, however, is different; PTOs accord it strategic importance as an extra source of revenue and/or a foothold for further development in service provision in the host countries.

For example, the data in Figures 2-1 and 2-2³ below indicate a rapid increase of FDI by PTOs since the end of the 1980s. According to estimates made by a consulting firm, there were 25 cross-border acquisitions by PTOs and other telecommunication firms from 1988 to 1989, while there were six in the previous year. The total value of the same acquisitions was over US\$2.1 billion in 1988-89, from US\$120 million in the previous year. The value per investment has rapidly increased since the end of the 1980s. In 1989 and 1990, PTOs invested more than half of the total investment that occurred between 1986 and 1990. This was true for both the number of investments and their value. It may be reasonably estimated that the acquisition of shares of New Zealand's PTO (Telecom Corporation of New Zealand Limited, TCNZ)⁴ in 1990 and of Mexico's PTO (Telmex) in 1991 were larger than the value of all acquisitions made in the five-year period indicated in the figures.

International expansion is thought by major PTOs to be a prerequisite for long-term success. For example, AT&T, in its annual report for 1991, announced that it intended to enhance its international activities.⁵ While 15 per cent of AT&T's revenue was generated from those activities, the goal was to obtain 25 per cent of sales performance from international markets by 1995, and 50 per cent by the year 2000. Although the source of this increase was not specified (*e.g.* existing international telecommunication services, newly-developed services, the sale of equipment or other businesses), the company's intention to further pursue international market opportunities well represents general intentions in globalisation commonly observed among major PTOs. The 1991 purchase of NCR, one of the major computer manufacturers based in the United States, accords with the promotion of globalisation of AT&T corporate activities, allowing the company to provide a high level of system integration services with a wide geographical coverage.⁶ Similar examples are found in a number of PTOs in Member countries. AOTC (Australia -- now known as TELSTRA), in its annual report for 1991, stated that the company should increase its revenue from its global business from around A\$ 70 million in 1989-90 to A\$ 800 million by 1994-95⁷. It is an ambitious requirement, it is stated, but necessary if the company "were to have serious aspirations to be a more significant global carrier by the mid-1990s". The same applies to PTT Telecom Netherlands. The necessity of its development in both national and international markets was repeatedly emphasized with equal importance in the statement of the Chairman of the Board of Management of its shareholding company, the Royal PTT Nederland.⁸

Figure 2-1

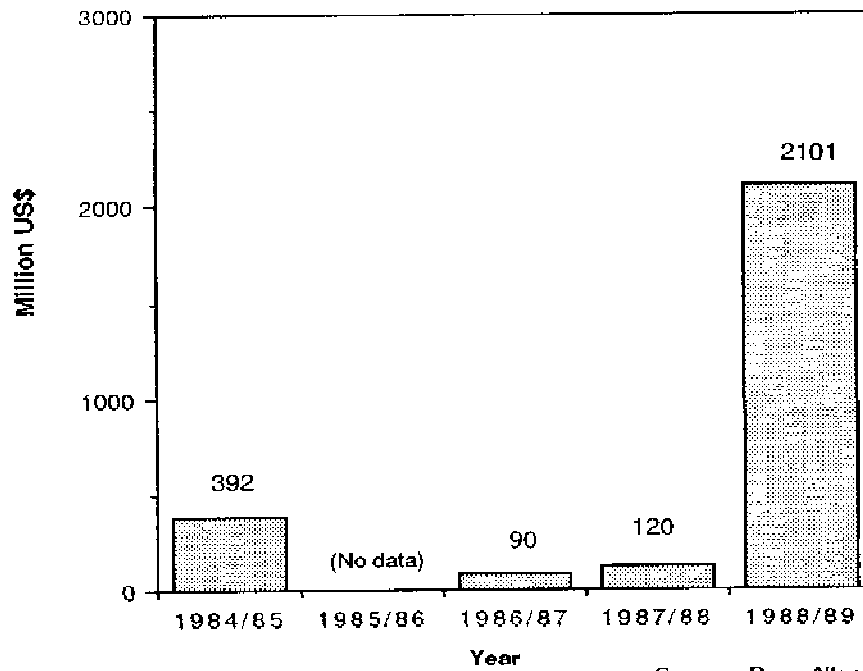
Number of cross-border acquisitions by PTOs/Telcos (1984-1989)



Source: Booz, Allen & Hamilton (1991).

Figure 2-2

Value of cross-border acquisitions by PTOs/Telcos (1984-1989)



Source: Booz, Allen & Hamilton (1991).

New forms of internationalisation and possible policy issues

New service options

A number of options are being made available in voice telephony services. PTOs are developing a variety of options as well as increasing their geographic coverage. Discount in voice telephony services through simple resale of international leased circuits is the simplest example of a price option.⁹

PTOs are offering various options in billing and call set-up services to facilitate customer use of international toll free services (such as "International Green Numbers" by PTT Netherlands, "OTC Country Direct" by AOTC (Australia), "Japan Direct" by KDD, and "US Direct Service" by AT&T). These are all developed from existing credit call services (*i.e.* reverse charge call services).

Calling card services have opened more possibilities to users. Automated credit call services, such as "OTC Call Card" by AOTC, "Calling Card" by AT&T (and similar services by MCI and Sprint) were developed to enable users to charge the price of calls originating in foreign countries to their account in their home countries. Some US PTOs are, furthermore, providing third-country calling services. Technologically, this service is simply an extension of the calling card service; "World Connect Service" by AT&T and "MCI Card" by MCI are examples. Using this service, a holder of the calling card in Country A may call from Country B to Country C *via* Country A (Figure 2-3). The card holder first calls Country A, then has the PTO in Country A call Country C. The calling procedure is the same as an automated credit call to a number within Country A, but instead the call is forwarded to a destination outside, not to a number within, the country.

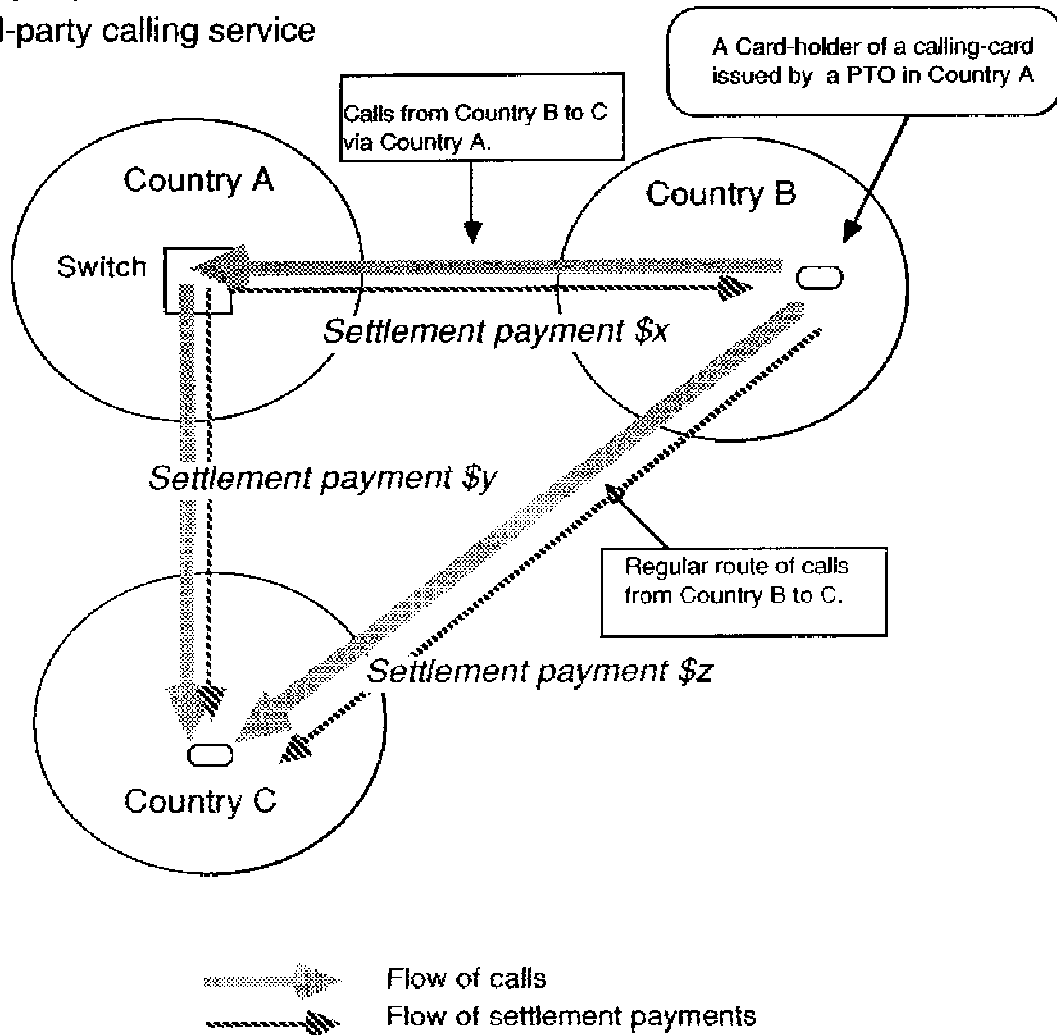
In this service, the flow of payment between PTOs in Countries A and B goes in the opposite direction to the call. The PTO in Country A pays the accounting rate to the PTO in Country B for those calls originated by calling card holders in B and addressed to the third country *via* A. This is due to existing international telecommunication regulations, according to which credit calls originating in a foreign country are treated as outgoing calls from subscribers in the service's home country, Country A in the example given above. The regulations also state that the accounting rate must be paid by the country which originates traffic over a route not previously agreed in the same example, a call from B to C routed *via* A. In this way, benefits of existing PTOs are safeguarded.

The market size of the third-party calling service is, in fact, estimated to be negligible in relation to the total volume of international traffic between any pair of "by-passed" countries (such as Countries B and C in Figure 2-3). Customers to whom this service would appeal most are those who subscribe to the calling service and who are travelling abroad. It is unrealistic to assume that the volume of international traffic generated by such customers is large enough to result in a significant loss of revenue for the "by-passed" PTOs.

However, the third party calling service has some potential elements of competition:

- The service enables a PTO in Country A to participate in telephony service markets between B and C, which it could not do in the past. The PTO may obtain revenue from collection charges for calls from B to C *via* A. If the accounting rate from B to C (\$z in Figure 2-3) is higher than that from A to C (\$y in Figure 2-3), C may lose some income opportunities.

Figure 2-3
Third-party calling service



- Impacts of the third-party calling service on the corporate image of PTOs may be substantial. The idea of a service involving credit card calls would appeal to customers who are used to encountering problems in preparing coins or prepaid telephone cards when making an international call from foreign countries. The effect may be psychological, but it does make a difference to the "brand image" of a PTO.
- Expansion of the number of card holders outside the issuer PTO's home country is, in theory, possible. Alternatively, the PTO may link this service to existing commercial credit cards issued by financial service firms (e.g. VISA, Mastercharge, American Express, etc.).¹⁰ If calling cards are made widely available to customers regardless of nationality, telephone users may wish to hold cards that enable them to use the PTO offering the lowest price.

All these effects may create some competitive pressure on the "bypassed" countries (B and C in Figure 2-3), despite the fact that third-party calling is operated as credit call services based on bilateral agreements in the framework set by International Telecommunication Regulations. Discrepancies in the interests of PTOs will arise.

An increase in the number of countries allowing simple resale of international leased circuits will give rise to carriers that do not own facilities but lease international circuits and provide the same service as PTOs.¹¹ PTOs will then no longer be the only players in international telecommunications. The situation described below is possible with simple international resale:

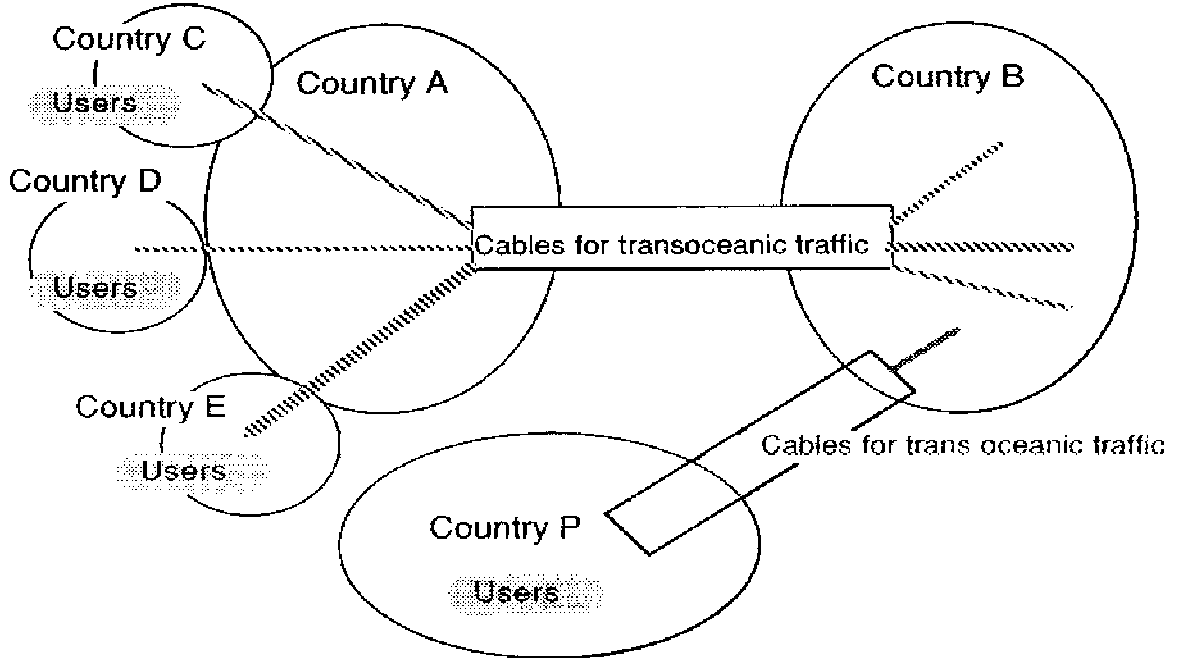
In the original condition exhibited in Figure 2-4 (1), a PTO in country A has a cable for transoceanic traffic between Countries A and B. The PTO obtains profit by providing toll call transmission services to international calls from Countries C, D and E to Country B through the cable. The PTO in Country A thus obtains markets for international traffic from both its domestic market and foreign countries. In the new situation illustrated in Figure 2-4 (2), a telecommunication operator (TO) Z enters the trans-oceanic telecommunication market. Z leases a large capacity of the cable built by a PTO in Country P, uses an international reverse-charge service to attract users in Countries C, D and E, and provides international telecommunication services between these three countries and Country B. In this case, Z is competing with PTOs in Country P and A, since users in Country P may also take advantage of the same service. The operator Z may further aggressively try to attract more users in Countries C, D and E by using international toll-free services for customers to access its switches, located in Country P.

Simple resale will place *downward pressure* on the charges of existing international telephone services. In the example above, country A has to reduce the transit charges to maintain traffic from C, D and E. Furthermore, the initiation of reverse charge services (such as the 800 Number and "Green Number" services provided in the United States and many European countries in their home markets), plus international simple resale services, as illustrated in an example above, provides additional examples of new patterns in international service provision for telecommunication operators to consider adopting.

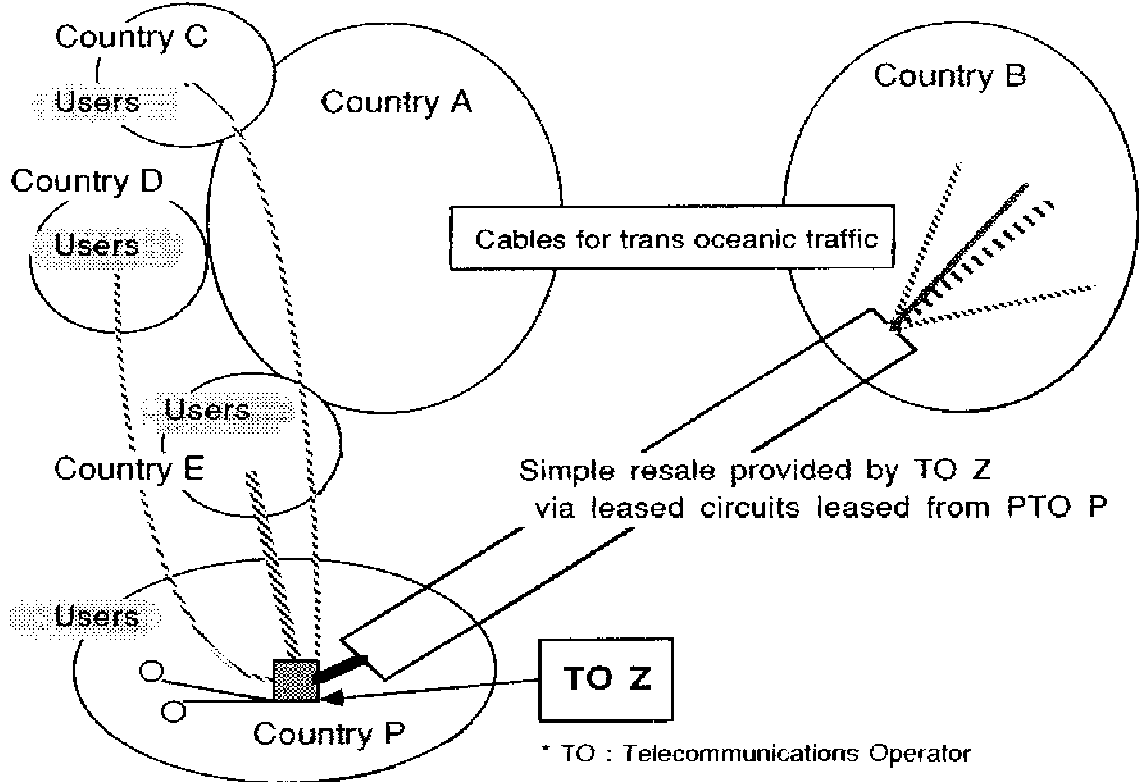
Foreign direct investment

Foreign direct investment (FDI) by PTOs is increasing in terms of both the number and the level of investment. FDI takes various forms: purchase of shares of TOs (both PTOs and other service-providers), establishment of joint ventures (JVs), obtention of franchise for the operation of telecommunication services, and mergers and acquisitions (M&A) of providers of enhanced communication services other than TOs. Tables 2-1 and 2-2 below list major FDI recently undertaken by PTOs in Member countries.

Figure 2-4 Simple resale
 (1) Original condition



(2) Potential competition between PTO A and a TO in Country P



* TO : Telecommunications Operator

Direct investment has an advantage for PTOs in that it becomes globally known (*i.e.* global presence) in a relatively short time and is a means of rapidly entering the telecommunication market. Examples of large-scale direct investment include the purchase of shares of the PTO in New Zealand (Telecom New Zealand) in 1990 by a consortium of Ameritech and Bell Atlantic (both from the United States), and the purchase of 49 per cent of the shares (with voting rights) of Mexican PTO, Telefonos de Mexico (Telmex) by a consortium including South Western Bell (a Regional Holding Company in the United States) and France Telecom (FT, France) in 1991.

Observation of the cross-border movements of investments in terms of geographical origin and destination reveals several distinctive features (Tables 2-1 and 2-2). For example, foreign PTOs invest more in countries where the level of liberalisation is high, such as the United Kingdom and the United States.

Many of the investments by European PTOs in Asian, Pacific and African countries are derived from traditional ties between Europe and these countries (Table 2-2). Investments such as those by Cable & Wireless (C&W, the United Kingdom) in PTOs in the People's Republic of China, Hong Kong and Macau, and those by France Telecom (FT, France) in the Central African Empire and Chad reflect historically close relationships between these countries and the home countries of the PTOs.

Foreign direct investment gave rise to several policy issues in an interface between existing rules for trade and international capital movements (an external factor) and telecommunications regulation that controls the level of openness of domestic markets (an internal factor).

One issue is the foreign ownership policy of PTOs. For those countries that receive investments (host countries), the level of foreign ownership of PTOs and entry of foreign-owned service-providers in various services [*e.g.* Public Switched Telephone Network (PSTN), cellular, value added services, etc.] have to be considered in relation to the purpose of market liberalisation and national interests in telecommunications. This issue will be further elaborated in Section IV.

Foreign direct investment is, in the light of trade policy, a market access issue. The question arises as to whether or not or to what extent telecommunication policy should draw upon free trade rules. Many issues arise from the existence of asymmetry in national telecommunication policy. This point will be further elaborated in Section V.

Alliances and outsourcing

Co-operation between PTOs can greatly enhance service to customers via geographical coverage. Co-operation began in the form of joint account management (JAM) agreements in the late 1980s between major PTOs in Member countries, and evolved into more extensive forms.

Under JAM, two PTOs in different countries take care of each other's corporate customers, *i.e.* those having branches in the other country. Under this system customers may construct and maintain international corporate network systems only with the support of their home country's PTO. Concentration of billing of all worldwide telecommunication expenses to the customer's headquarters (*i.e.* so-called "one-stop billing") is also made possible. The home PTO co-ordinates in satisfying the requirements (technical, legal, etc.) of the other PTO, an otherwise complicated task for the customer.

Table 2-1 Major out-going investments by FIUs -- 10 Member Countries

To From	North America	OECD Europe	OECD Pacific
<p>Canada BT --> Mtel Corp. (Equipment, 51%)</p> <p>The US BT --> Tymnet (VAN, '89) BT --> BT North America (VAN, Equipment, 100%) BT --> BT US Paging (Paging, 80%, '88) BT --> Syncordia (Outsourcing, 100%) C&W --> CWCommunications (Long distance, 100%, '73) C&W --> Data America (Network services, 100%, '90) FT --> Cylix (Data com., 80%, '90) FT+ DBP Telekom+ Telefonica+KDD --> Infonet (VAN, '88)</p>	<p>France BT --> BT France (Services, Equipments, 100%)</p> <p>Germany C&W --> Mannesmann Mobilfunk (Cellular, 5%) FT --> Infa AG. (Public switched packet nw., controlling interest)</p> <p>Greece Vodafone(80%)+FT(10%) --> Cellular operations</p> <p>Ireland FT+Telecom Eireann --> JV (Mintel)</p> <p>Italy FT --> Olinet (Public switched packet nw., 51%)</p> <p>Sweden C&W+Others --> TELE-2 (PSTN, 39.9%, '91) FT+SKD-Forstagen --> JV in public switched packet nw.)</p> <p>Switzerland FT --> Comco (Public switched packet nw., controlling interest)</p> <p>The UK FT+DBP Telekom --> Phone Point (PCN, 10% each, '89) FT --> Transpac Network Services (Data communications, '91) FT --> Martin Dawes Communications (Wireless, 40%) DBP Telekom --> Unitel (Mobile, 15%)</p>	<p>Australia Bell South+C&W --> Optus Communications (Long-distance and international, Cellular, 24.5% each, '91)</p> <p>Japan C&W (17.17%) + Pacific Telesis (10%) --> IDC (International, '92) C&W --> Fair-way Communications (domestic data com.)</p>	
<p>The US FT+ DBP Telekom+ Telefonica+KDD --> Infonet (VAN, '88)</p>			

Source: Various industrial journals and news letters.

Table 2-1 Major out-going investments by PTOs -- To Member Countries

To From	North America	OECD Europe	OECD Asia-Pacific
North America	<p>Canada AT&T --> AT&T EasyLink Service (EM, '91) GTE --> BC Tel. (PSTN, 100%)</p>	<p>Denmark Bell South --> Densik MobilTelefon (GSM Cellular, 29%)</p> <p>France Bell South --> SFR (Cellular, 4%, '89)</p> <p>Germany Pacific Telesys --> Mannesmann Mobilfunk (Cellular, 26%, '89)</p> <p>Italy AT&T+Iracable+STET --> Astea (Telemarketing, 33%)</p> <p>Norway Amentech+Singapore Telecom --> NetCom GSM (GSM Cellular, 49.9%, '93)</p> <p>Portugal Pacific Telesys --> Telechamada (Paging, 23%), Telecel consortium (23%)</p> <p>The UK AT&T --> Istel (VAN, 100%, '90) Bell South --> Air Call Communications (Paging, 100%, '89)</p> <p>US West --> United Artists, Cable Corp., Cable London, Birmingham Cable (CATV, Telephone NYNEX --> Phone Point (PCN, 10%, '90) BCE --> East London Telecommunications (CATV, Telephone, 75%, '91)</p>	<p>Australia MCI+AAP Communications --> JV for circuit resale ('91) Bell South+C&W --> Optus Communications (Long-distance and international, Cellular, 24.5% each, '91) Bell South --> Link and Skypage (paging)</p> <p>Japan AT&T+Others --> AT&T Jans (VAN, 60%) Pacific Telesys+Others --> Tokai Digital Phone (Cellular, 46%) Pacific Telesys (10%)+C&W(17.17%)+Others --> IDC (international, '97) Sprint --> Nippon Sprint (international VAN, 100%)</p> <p>New Zealand Bell Atlantic+Ameritech+others --> TCNZ (PSTN, Cellular, VAN and directory services) Bell South --> Permission to construct a digital cellular system 100%, '90</p> <p>MCI+BCE+Others --> JV, CLEAR (Long-distance and international, 25% each, '91)</p>

Source: Various industrial journals and news letters.

Table 2-2 Major out-going investments by PTOs -- To Non-Member Countries

	Central and East Europe, Baltic States and NIS.	Central and Latin America	Asia/Pacific	Africa	
OECD Europe	<p>Estonia Swedish Telecom+ Telecom Finland+ Estonian Telecom --> a joint stock company (PSTN)</p> <p>Poland Amertech(50%)+FT(50%) --> JV (Cellular, '90)</p> <p>Russia C&W --> Sovam Teleport C&W+Intertelecom(Russian PTO) --> Metropolitan Communications (Long-distance and international telecommunications from and between major cities in Russia) C&W('91) --> JV in digital overlay networks in Nakhodka and Sakhalin DBT Telekom --> Packet-switched network in Moscow.</p> <p>Ukraine DBP Telekom+PTT Telekom(NL)+ Telekom Denmark --> JV (Cellular)</p>	<p>Argentina Citibank+ Telefonica+ Techint(Italy) --> Telefonica de Argentina S.A. (Telco Sud) (PTO, 60%, '90) Morgan Guarantee(10%)+FT(32.5%) +STET(32.5%)+Perez Compac --> TELECOM ARGENTINA (Telco Norte) (PTO, 60%, '90)</p> <p>Barbados C&W --> BARTEL (PTO, 75.2%) C&W --> BET (International, 85%)</p> <p>Belize BT --> Belize Telco. (PTO, 25%)</p> <p>Jamaica C&W --> TOJ (PSTN, 79%)</p> <p>Chile Telefonica --> CTC (PTO for domestic, 34%, '88) Telefonica --> ENTEL-CHILE (PTO, 30%, '90)</p> <p>Mexico FT(5%)+Others --> Telmex (PTO, 49%, '91)</p> <p>Puerto Rico Telefonica --> TLD (Long distance, International, 80%, '92)</p> <p>Trinidad Tobago C&W --> TSTT (PTO, 49%)</p> <p>Venezuela AT&T+Telefonica+GTE --> CANTV (PTO, 40%, '91)</p>	<p>Hong Kong C&W --> Hong Kong Telecom (PTO, 58.4%), Asia Satellite Telecommunications Co. (Satellite, 83.3%) C&W (16.18%)+Pacific Telesys --> International Data Corp. (International FT --> STIN (International, 23%))</p> <p>Macau C&W (51%)+GTIC(20%)+OPRM(28%)+ CTM(1%) --> Companhia de Telecomunications Macao (PTO)</p> <p>Peoples Republic of China C&W --> Shenda Telephone Company(Regional PTO)</p> <p>Pakistan C&W --> Pakel (Cellular, 80%)</p>	<p>Hong Kong AOTC --> Chevalier Ltd. (CT2 Cellular, 49%, '91)</p> <p>Peoples Republic of China AT&T+KDD+MPT(PTC) --> JV (private circuits, '92)</p> <p>Philippine AOTC --> International Communications Corp. (VSAT, 40%, '91)</p> <p>Thailand AOTC --> Smart Telecom. (Data Com. 40%) NIT --> TT&T (PTO in rural area, 20%, '92)</p>	<p>Central African Empire FT --> SOCIATEL (PTO, 40%) Chad FT --> Societe des Telecoms Int. (International, 43%)</p> <p>Nigeria FT --> STIN (International, 23%)</p> <p>Sierra Leone C&W --> Sierra Leone External Communications (International, 49%)</p>
OECD Pacific					

Note: * Of those shares that have a voting right

Source: Various industrial journals and news letters.

Table 2-2 Major out-going investments by PTOs -- To non-Member countries

	Central and East Europe, Baltic States, and NIS	Central and Latin America	Asia/Pacific
North America	<p>Czech/Slovakia US West+Bell Atlantic+Czech and Slovak PTTs --> Eurotel Cellular Service (Cellular, public-switched packet nw., 49%)</p> <p>Hungary US West+Hungarian Telecom. Co. --> WESTEL Radiotelefon (Cellular, 49%, '90)</p> <p>Poland Ameritech(50%)+FT(50%) --> JV (Cellular, '90) Sprint --> Packet-switched data network for Polish railways</p> <p>NIS Russia AT&T+ PTT Telecom (NL) + DBP Telekom --> JV in Ukraine (Long distance, international, '92) US West --> JV in Moscow (Cellular, 22%, '90); JV in St. Petersburg (Cellular, 40%, '91) US West+Ericsson --> Nordic Mobile Telephone (Cellular, '92)</p> <p>Ukraine AT&T (19.5%)+DBP Telekom (19.5%)+PTT Telecom Netherlands (10%)+Ukraine Telephone Co. (51%) --> UTEL ('92)</p> <p>Lithuania US West+Lithuanian PTT --> JV (international gateways)</p>	<p>Argentina Bell South --> GRM (Cellular, 42.4%, '89)</p> <p>Chile Bell South --> (Cellular, 100%)</p> <p>Jamaica AT&T (35%)+C&W+TOJ --> Jamaica Digiport International (PSTN to and from Montego Bay Free Trade Zone)</p> <p>Mexico Bell South --> Comcel (Cellular 36.37%, '90) Millicom --> (Cellular, '90) MacCaw Cellular --> (Cellular, '90) South Western Bell (10%)+FT(5%)+Others --> Telmex (PTO, 49%, '91)</p> <p>Uruguay Bell South --> Abiatar (Cellular, 35%, '91)</p> <p>Venezuela AT&T+ Telefonica+GTE+Others --> CANTV (PTO, 40%, '91) AT&T+COMSAT--> Transporta Digital de Informacion (private networks) Bell South --> TelCel (Cellular, 44%, '91)</p>	<p>Hong Kong AT&T --> Hutchison AT&T Network Services (VAN, 49%) MacCaw --> Smartcom (Cellular, 30%)</p> <p>India Millicom+Compagnia Generale des Eaux+Bharti Telecom -->(Cellular, '92)</p> <p>Indonesia NYNEX --> A network expansion project with PT Telekom.</p> <p>Peoples Republic of China AT&T+KDD+MPT(PPRC) --> JV (private circuits, '92)</p> <p>Philippines AT&T --> Cellular operations NYNEX --> A network expansion project with PLTD Millicom --> Cellular operations</p> <p>Thailand NTT +Others --> (PSTN, 20%, '92) NYNEX --> TelecomAsia (PSTN, 10%, '92) Pacific Telesys --> JV (Paging, 40%, '91)</p>

Note: * Of those shares that have a voting right.

Source: Various industrial journals and news letters.

Keys to the tables:

- a. Information is listed as follows in each column:

ex. AT&T - - > Istel (VAN< 100%, '90)

PTO's name - - > Name of the invested firm (service, share owned by the PTO, and the year of investment).

- b. Abbreviations:

AOTC -- Australian Overseas Telecommunication Corporation

BCE -- Bell Canada Enterprises

EM -- Electronic messaging services

FT -- France Telecom

International -- International telecommunication services

JV -- Joint Venture

Cellular -- Cellular telecommunication services

NL -- The Netherlands

Paging -- Paging services

- c. Names of the parent/sister companies, instead of subsidiaries, are indicated in the tables above. For example, activities by France Cable et Radio (FCR), a subsidiary of France Telecom (FT), are indicated as those by France Telecom.

JAM soon grew to form a more organised form of PTO alliance, so-called "one-stop-shopping" (OSS). A PTO that becomes a one-stop-shop (co-ordinating carrier) takes all actions required for corporate network systems on behalf of a customer firm. While JAM is a bilateral agreement for the customers of the countries concerned, OSS providers are less concerned about customers' nationalities. Examples of such action include the provision of communication channels over territories of different PTOs, monitoring their interconnection, and providing one bill that includes all the services provided by other PTOs and maintenance of the entire network. In this way firms may avoid the lengthy and complicated problems stemming from the different regulations and standards of PTOs in different countries.

"Outsourcing " services became a more strategic option for PTOs when the inefficiency of OSS in network management became evident. The concept of outsourcing includes various levels of involvement of users' networks, from the simple management of data communications to the entire handling of information network systems, including planning, construction and operation of networks, and information processing (Figure 2-5) A variety of services are included in outsourcing, such as the so-called "managed data network service" (MDN), global virtual private network (GVPN), international frame relay service and "bandwidth-on-demand".

Outsourcing may or may not imply ownership of communication nodes and switches. Some PTOs install such equipment which they own in major sites of global corporate networks, and thus build a single network, whereas others provide the service through networks provided by other PTOs. For example, Unisource Business Network, a branch of Unisource (the Netherlands, Sweden and Switzerland, as explained below) has installed nodes in Paris and Brussels, and BT has installed them all over the world for the provision of its MDN, Global Network Service (GNS). For AOTC, Australia, in contrast, MDN is a consultation service that does not involve the construction of its own facilities abroad.

Regardless of the ownership of nodes and switches, many PTOs seem to feel the need for alliances with other PTOs in order to ensure geographical coverage envisaged by targeted users, and in fact have developed partnerships with each other. Examples of such partnerships are EUNETCOM (FT and DBP Telekom, each owning a 50 per cent stake, started in 1992), Syncordia (BT, started in 1991)¹² and Unisource (PTT Telecom in the Netherlands and Swedish Telecom, started in 1992 and joined by Swiss PTT in 1993). The alliance between MCI (the United States) and Stentor (Canada) to serve corporate network systems of the Chrysler Corporation, (an MNE in automobile manufacturing based in the United States) is also aimed at outsourcing services.¹³

A number of PTO alliances have been formed to date, including those listed in Table 2-3 below. There is a wide variation between these alliances in terms of objectives and level of PTO involvement. Some alliances are tighter than others; Unisource is relatively tight and Joint Network Initiative is relatively loose. Some are intended to serve a specific sector such as the Financial Network Association.

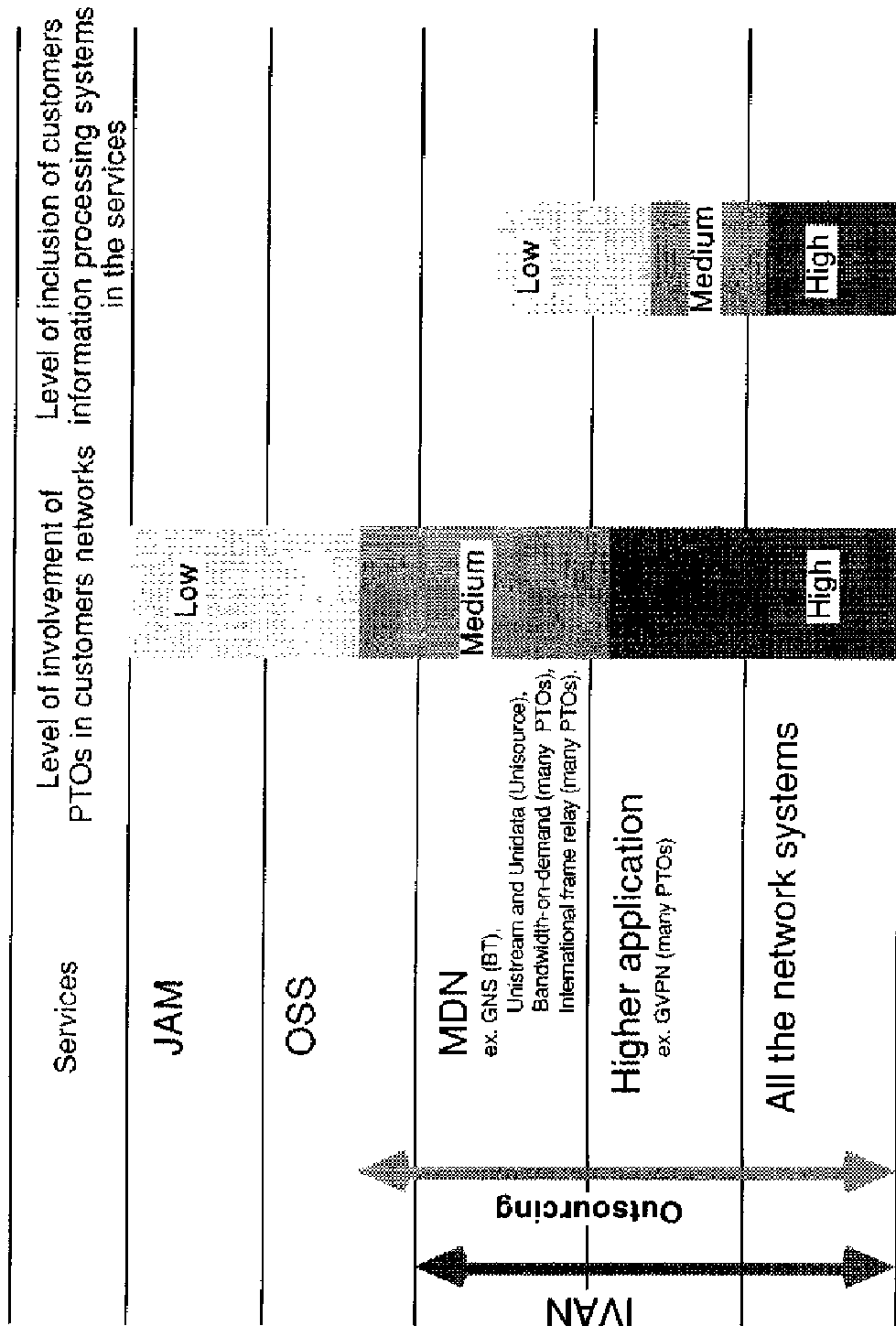
PTOs are increasing their involvement in international value added network services (IVANs) by acting as integrators of various voice and data communication systems (Figure 2-5 below). Large-scale corporate networks are usually multi-purpose and transmit both voice and data. A processing system for a large volume of data, such as a Computer-Aided Design (CAD) system, is sometimes interconnected with, and transmitted over, international private networks. In providing outsourcing for these customers, PTOs are enhancing their function as IVAN providers.

Table 2-3 Major PTT Alliances

Carriers	FNA	GCS	Infonet	Eunetcom	Unisource	JNI	Global FON
AOTC (Australia)	*	*	5.38%				*
RTT Belgacom (Belgium)	*	*	5.38%				
Stentor (Canada)	*	*					
Teleglobe/Unitel (Canada)	*	*					*
France Telecom (France)	*	*	16.17%	50.00%		*	
DBP Telekom (Germany)	*	*	16.17%	50.00%			
Italcable (Italy)	*	*					
KDD (Japan)	*	*	5.00%			*	
IDC (Japan)		*					
ITJ (Japan)		*					
PTT Telecom Netherlands (NL)		*	5.38%		33.30%		*
Telefonica (Spain)	*	*	5.38%			*	
Swiss PTT (Switzerland)		*	5.38%		33.30%		
Swedish Telecom (Sweden)		*	5.38%		33.30%		
BT (United Kingdom)		*				*	
Mercury (United Kingdom)	*	*				*	*
Cable & Wireless (UK)		*					*
AT&T (United States)		*				*	
Sprint (United States)		*					*
MCI (United States)	*	*	25.00%				
Hong Kong Telecom (HK)	*	*					*
Korea Telecom (Korea)		*					
DACOM (Korea)		*					
Singapore Telecom (Singapore)	*	*	5.38%				

Note: FNA -- Financial Network Association; GCS -- Global Communications Services; JNI -- Joint Network Initiative. Source: Adapted by the Secretariat based on Yankee Group (1992).

Figure 2-5 Evolution of PTO alliance



There are, however, a number of IVAN producers that originated in sectors other than telecommunications. PTOs are only one of these competitors. Other examples include: specialised firms (e.g. Electronics Data Systems Corp.), computer system vendors (e.g. IBM and DEC), VAN providers (e.g. Philips¹⁴ and geis) and subsidiaries of accounting firms (e.g. Andersen Consulting). Some large users have established firms for System Integration (SI) services. Scitor, set up in 1991 as a branch of the Société Internationale de Télécommunications Aéronautiques (SITA), an association in the airline sector created to meet the telecommunication needs of the industry, is an example of an SI producer originating from a large telecommunications user.

Policies that ensure a fair playing field of *inter-sectorial competition* will have to be developed. There is a possibility of abuse of competition if those IVANs providers originally in the private sector have to compete with PTOs that have advantages derived from their original or current monopoly (or near-monopoly) status in the markets. The possibility of cross-subsidisation of competitive business from revenue obtained from monopoly markets, such as the monopoly market for voice telephone services, is an example of such a possibility. Other possible elements that may lead to market abuse include PTOs' control over the majority of infrastructure, which allows them to maintain information on customers and network systems. As the nature of telecommunications services is "end-to-end", and the entry costs to the telecommunications sector is high, PTO competitors may not be entirely free from PTO control. An interdependence between competitors in IVAN is thus inevitable, and hence appropriate regulatory safeguards are necessary.

Outsourcing services in which a PTO owns facilities, as described above, may have implications for *telecommunication infrastructure policy*. PTOs providing outsourcing services have their own switches and/or nodes in countries, even those that are not members of the alliance. MDN is a penetration of foreign PTO infrastructure in the host country. Users, however, do not care about the details of infrastructure ownership. It is a well-recognised fact that users' priority for the selection of a service-provider is best quality at a low price, not the nationality of the provider.¹⁵ Thus the reasoning that "the government should own telecommunication infrastructure in order to guarantee the quality of service" -- may need to be reconsidered.

If a large number of PTOs form an alliance, *anti-competitive concerns* may arise in international markets.

An additional observation arises from the analysis above: the *representation system for user interests* in international telecommunications for technology standards and rule-setting of services, such as the International Telecommunication Union (ITU), will have to be reconsidered. In monitoring user interests within global corporate networks, it has become apparent that the perception supporting the ITU system that one country's PTO represents the interests of that country's users is no longer commonly held.

These issues are not a question of good or bad, but represent the facts. It should be recognised that the ITU is becoming obsolete. Changes in market structure in international telecommunication services are increasing their economic impacts on all players in the international economy. Adjustment of existing policies to the new market environment is urgently needed.

Where are PTOs heading?

Close examination of the globalisation patterns of PTOs leads to the following observations:¹⁶

A common factor observed in various types of globalisation is that many PTOs in Member countries are developing a full line of service options for users, such as GVPN, MDN, outsourcing and a number of telephone services. Although these options are not mutually exclusive, PTOs need to be prepared to provide that range of services in order to win customers through competition by best meeting their individual needs.

Another common factor is that existing network facilities are the basis for PTOs' expansion in international markets. Although PTOs are increasingly pursuing foreign-based firms in addition to national ones, their domestic networks are a platform for the expansion of services beyond national boundaries. GVPN is a typical example of this. In alliances, PTOs share domestic networks. The quality and size of those networks are taken into consideration when forming alliances. BT's infrastructure for its MDN services may also be considered equivalent to its domestic network in the sense that the company owns network nodes installed in other countries.

In fact, so far no PTO is truly global in terms of its geographical coverage, despite the idea of outsourcing. Geographical factors still continue to matter to PTOs in the development of international business. Regional differences in the orientation of global activities appear to be among major PTOs, coupled with differences in existing corporate resources, *i.e.* the location of home markets, strength in technology, size of the home market, existence or non-existence of manufacturing capability, etc.

Some PTOs intend to take advantage of existing regional footholds as the basis of their international development. AOTC (Australia), for example, undertakes major foreign direct investment and provision of consulting in East and South-East Asian countries while continuing to try to enter European markets. Unisource, in contrast, seems to intend to make Europe its home base, from which network connections with other major cities in the world are to be developed.¹⁷ The basis of Telefonica's (Spain) international activities in FDI seems to have a similar nature. Traditionally close relationships and cultural familiarity appear to be integral to the company's foreign investments, as was seen in its acquisition of shares of the newly privatised PTOs in Latin America (refer to Table 2-2 above for details).

Other PTOs seem to have different orientations in their activities depending on the regions. Cable and Wireless (the United Kingdom), for example, plays the role of a monopoly PTO in those regions where the company holds a franchise in public switched telephone services (PSTN), such as the countries of the East Asian and Caribbean region, including Hong Kong, Barbados and Jamaica. In other countries where the company is a new entrant to liberalised markets, as is the case in Sweden,¹⁸ it acts as a competitor of existing PTOs in the host country.

The same applies to those PTOs that have relatively wide geographical coverage of services. AT&T (the United States), for example, places different priorities on its activities abroad corresponding to regional differences in the business environment. In Eastern Europe, the NIS and East Asia, as in the People's Republic of China (PRC), direct investment in equipment and infrastructure is its major activity. In those regions, renewal and installation of infrastructure is a priority, before the provision of a variety of services. Investment in equipment is expected to pave the way for the entry to service markets in the future. Ownership of a manufacturing branch, AT&T Network Systems, enables the company to obtain profits through investment in equipment. In industrialised countries, on the contrary, provision of services

is the focus of its activities. AT&T follows US corporate customers requiring the same services they use in the United States, such as the Global Software Defined Network (GSDN, the commercial name of its GVPN).

BT also has relatively wide geographical coverage in the provision of MDN services, but the intended targets are industrialised countries and major cities in other countries where branches of MNEs are located. This is part of a strategy to take on large firms as major customers. BT's coverage is especially intensive in the United Kingdom and United States, where the company has its own infrastructure for MDN.¹⁹

Regionalisation in this international development is, however, a natural result. Telecommunication services are highly dependent on physical infrastructure. Telecommunications was originally a regional business and is likely to remain so, at least until some point in the future when technology innovations will have made personal and mobile communication systems available at affordable prices. Further development of satellite communications, for example, may enable PTOs to be "location-free". There are some indications of a potential development in this direction, such as the "Iridium" project launched by Motorola in 1993.

Because of geographical constraints, PTOs need to maintain a double relationship among themselves in order to continue their global development, *i.e.* one involving both competition and co-operation. PTOs are, on the one hand, competing in international markets, seeking customers regardless of their nationalities. On the other hand, co-operation is necessary since no PTO has the global coverage of facilities needed for service provision. More importantly, the provision of emerging international services is based on a number of existing bilateral and multilateral agreements. Examples of the former are rules for landing rights of transoceanic cables and transmission rights of cables; the latter include a variety of agreements established at ITU on international service provision, *e.g.* accounting agreements on both private and public circuits, credit call services, etc. These agreements remain the basis for the current development of various international services by PTOs. In addition, the fact that ex-monopoly PTOs have obtained benefits from these rules should not be overlooked. Mutual familiarity and credibility developed through long-lasting relationships between PTOs are still substantial assets, useful and indeed necessary for further development of international activities. In short, PTOs are to some extent leaning away from the ITU regime towards competition in international markets, while trying to maintain existing benefits.

Two related questions arise:

- What will happen in the international telecommunication market as a result of the half-competing and half-co-operating relationships between PTOs?
- Are PTO alliances leading to the eventual formation of market monopolies (or oligopolies) at the regional level?

The importance of the second question should not be overlooked. If international telecommunication markets are left as they are, this is likely to happen in the near future. If monopolies are to reappear in the telecommunication sector -- this time on an international scale -- will this have been the outcome of market liberalisation in each country? It would be ironic if liberalisation ultimately resulted in a regional monopoly. What should governments do to maintain the benefits of liberalisation while avoiding the creation of regional monopoly markets?

It should be noted that international activities by the Regional Bell Operating Companies (RBOCs, United States) do not necessarily indicate movement towards a regionalisation of PTO markets. Prohibition from entry into international telecommunications services by the Modified Final Judgment in 1984 has led them to have little interest in outsourcing their global activities. RBOCs should be analysed in a different context from that for PTOs providing both domestic and international services. The companies' foreign activities are mainly investments in telecommunications and their related markets, such as cable television (CATV), cellular and computer services in Europe, the NIS and the Latin American countries (refer to Tables 2-1 and 2-2 above for details). These projects are services that remain inside the country concerned; and do not go beyond national boundaries.

Two dimensions of globalisation

Global activities by PTOs discussed above have two dimensions: one in which a PTO stretches its service provision to other countries, *i.e.* an "outgoing" dimension; and another in which PTOs are potentially in competition with each other, an "incoming" dimension. The "outgoing" dimension refers to PTOs' visible globalisation activities -- investment in the telecommunication sector abroad, provision of service abroad and corporate alliances are examples.

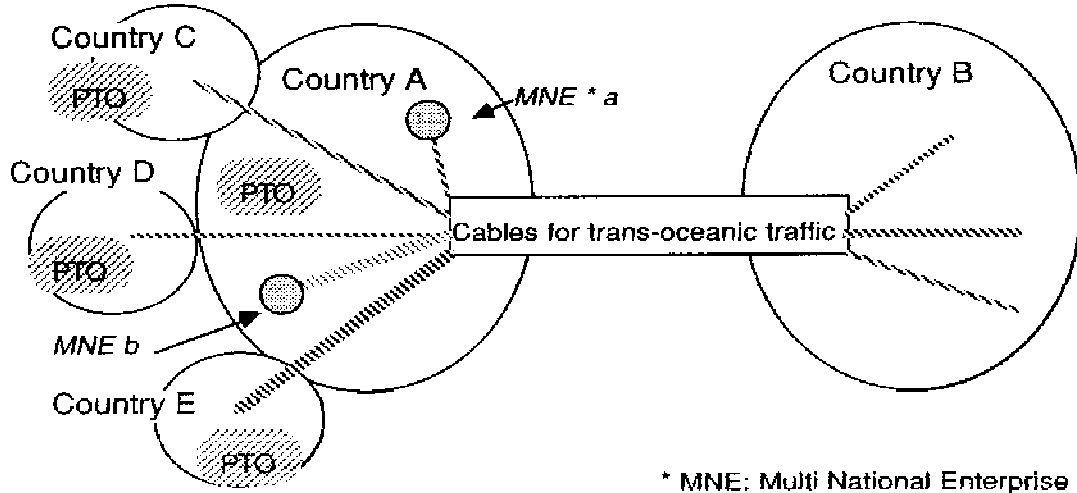
The "incoming" dimension, although not always visible, is created by the penetration of effects of other PTOs' globalisation into domestic markets. The "incoming" dimension, in other words, refers to a situation in which one PTO is eventually placed in competition with another. In this case, one PTO's gain is another PTO's loss.

The efforts which are currently being made by many PTOs to invite international corporate network users to locate their hubs in the PTO's home country are an example of the "incoming" dimension. The PTO expects to obtain high profit from the lease of circuits with large capacity and increased international traffic. Economic gain from activities associated with the installation of the hubs is also expected, since hubs are often located in the regional centre of user firms' corporate activities. Several PTOs are, in fact, competing with each other by advertising their advantages to customers: level of liberalisation, low price, quality of services, geographical locations, etc.²⁰

Another example is the offer of competitive rates in transmission charges. In Figure 2-6 (1), the original condition is the same as the one illustrated in Figure 2-4 (1) above. For MNEs, the location of the transoceanic cables offers incentives for them to locate their communication hubs in Country A. What happens if another country, Country P, constructs its own cable to connect with Country B, and offers a transmission rate that is less expensive than that paid to Country A [see Figure 2-6 (2)]? PTOs in Countries C, D and E may wish to route their international outgoing traffic *via* Country P, rather than *via* A. MNEs may locate their communication hubs in Country P, not A. PTOs in Countries A and P are competing to obtain traffic from Countries C, D and E, and MNEs. This example may look similar to the example of simple resale above. The major points of this transmission charge example are that: *i*) even though both Countries A and P prohibit simple resale of leased circuits, competition between the two may take place; and *ii*) PTOs in A and P compete for other PTOs in neighbouring countries (C, D and E), not individual users.

Figure 2-6 Incoming dimension of PTO globalisation

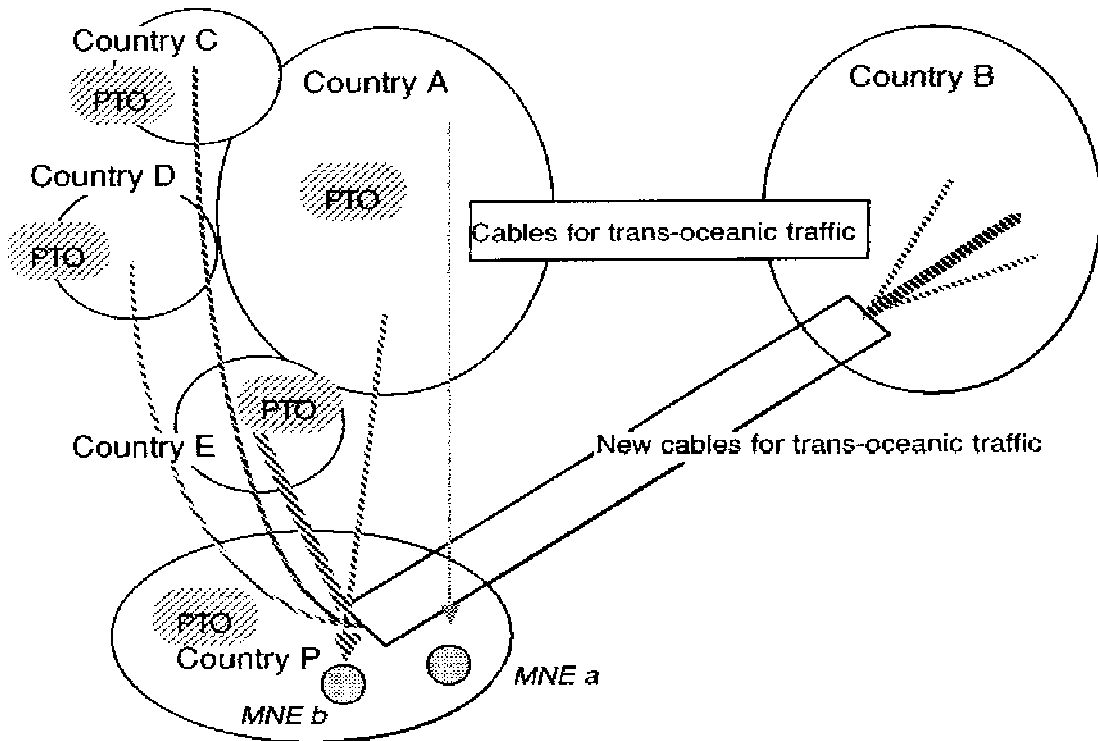
(1) Current condition



* MNE: Multi National Enterprise

Figure 2-6 Incoming dimension of PTO globalisation

(2) Potential competition between PTOs A and P



The above examples indicate that PTOs are increasingly in competition, regardless of their interest in stretching their activities abroad. All these phenomena will put pressure on PTOs to secure their customers. In the hub example above, if a PTO wishes to obtain benefits from hubs, telecommunication policy-makers and the PTO will have to further liberalise usage of leased circuits, improve service quality and reduce service price. In other examples, downward pressure will work on collection and transmission charges of international telecommunications. If PTOs and policy-makers do not respond to the "incoming" effects of PTO globalisation originating in other countries, costs for the maintenance of current regulations will be paid by the loss of both existing and potential incomes.

Globalisation of economic activities, PTO activities and the ongoing liberalisation of telecommunication policy will interact with each other to an even greater extent in the future. The implications of international competition between PTOs for national telecommunication policy is substantial. Regardless of their interest in globalisation, all PTOs must to an increasing extent enhance the attractiveness of the domestic telecommunication market for corporate customers. Telecommunication tariffs have to become competitive. Regulation on the usage of leased circuits has to be reduced and the waiting time for the preparation of circuits reduced. Type approval systems for telecommunication equipment have to become simpler, more rapid in providing approval, and liberalised. Interconnection with public switches has to be non-discriminatory between domestic and foreign-owned carriers, and the procedure to obtain permission for interconnection has to be comprehensive, simple and less time-consuming. If PTOs continue to make such efforts, this will eventually lead to the liberalisation of telecommunications in all countries.

User observations and requests

Users of global corporate networks have mixed interests in the current development of PTO international services such as outsourcing.²¹ Their opinions reveal the level to which PTO service has improved.

From the users' point of view, outsourcing is not necessarily an entirely new idea. The demand existed long before PTOs increased global activities. In fact, demand for true "one-stop-shopping" (OSS) or truly global "outsourcing" -- *i.e.* seamless network services with high-quality international leased circuits provided worldwide at reasonable prices -- has always been strong. However, in the past, when there was no competition in the telecommunication sector, PTOs were unwilling to respond to this demand. Only after the introduction of competition in the telecommunication market did major PTOs begin to advocate the advantages of OSS or outsourcing, as if these were new services responding to new demand. According to one representative of corporate users, "OSS and outsourcing PTOs are merely one process of the evolution of services, rather than brand new ones."

Outsourcing is seen rather as an idea formulated in the improvement process of PTO services to users of large-scale global corporate networks. Users also seem to feel that the idea is too idealistic, since PTOs may not be able to ensure services of a high quality and reliability at a good price worldwide.²² Nevertheless, outsourcing remains a goal towards which PTOs develop and reorganise existing services and resources.

The above arguments do not mean, of course, that demand was not the initial impetus, but the nuance lies in the fact that competition forced PTOs to change their strategy, and this change is resulting in globalisation. In other words, it is more reasonable to put weight on both changes in the market

environment in the telecommunication sector and on the globalisation of corporate activities, rather than to overemphasize customers' demand for globalisation.

Large users, however, recognise the potential usefulness of outsourcing and are watching its development with great interest. For example, one-stop-billing, a service included in outsourcing, attracts users because paying different PTOs (often in different currencies) for telecommunication services is a burdensome task. Some users are using MDN services on a trial basis, applying the services to less critical parts of their corporate networks, such as regionally limited networks or intra-corporate applications.

The distinction between large users and PTOs is becoming unclear due to ongoing liberalisation in the usage of leased circuits. Some large users are partly (but increasingly) in competition with PTOs in both data and voice telephony services. Users of large corporate networks are aware of emerging inter-sectoral competition. For example, SITA, as a provider of data communication services to airline companies throughout the world, *i.e.* IVAN -- has been a large user of international leased circuits provided by PTOs in many countries. The organisation is increasingly in competition with those PTOs who intend to obtain customers in the airline sector. The same relationship between PTOs and large users applies to voice service in those countries where simple resale of leased circuits for the service is allowed. Some large users are starting to provide voice telephony services to users outside the companies on a commercial basis by using their own corporate networks, such as many of the Type II carriers in Japan.²³ Large users are not longer mere users of PTOs.

A major conclusion derived from the priority users place on service quality is that, if a country does not liberalise its telecommunication market, it will miss out on potential economic benefits. It is evident from observing user behaviour that users will avoid locating the centre of their communication facilities where restrictions on circuit and equipment are heavy, and service quality is less than satisfactory. The increased importance of information systems in corporate activities therefore leads to competitive pressure between different countries, and thus momentum towards further liberalisation.

III. The Changing Market Environment

Factors in PTO globalisation

This section discusses the background influences that have driven PTOs to extend their activities abroad. Interacting economic, regulatory and technological factors have contributed to this global development (Figure 3-1).

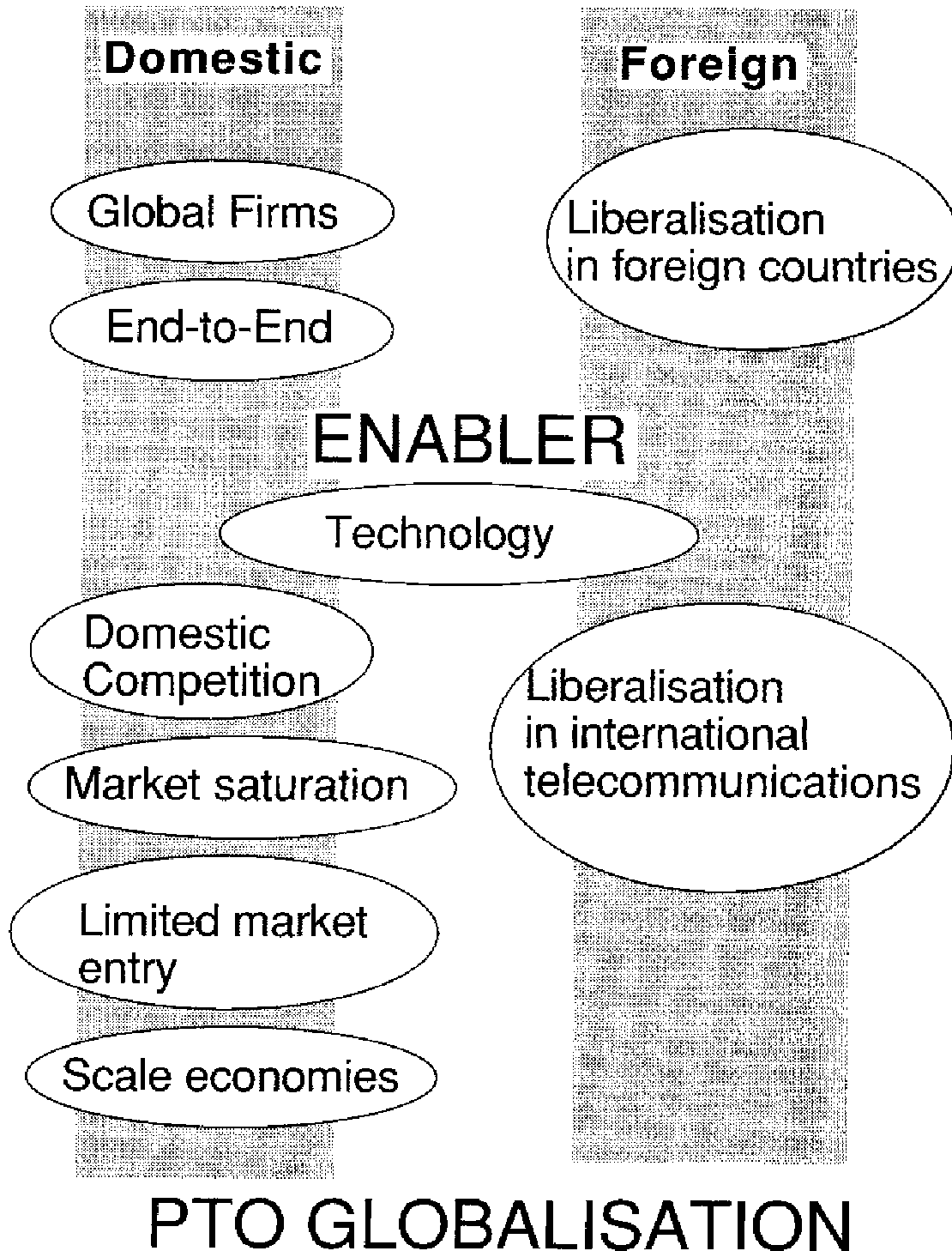
Globalisation of large firms

An ever-increasing number of firms in OECD Member countries are extending business activities beyond national boundaries. Examples of sectors active in global networking now include finance and banking, manufacturing and transportation. Communication networks are critical for the management of those firms active in a number of countries. Cost-effectiveness, reliability and enhanced communication functions to support specific requirements of their individual sectors are essential to their networks. Computer-aided design (CAD) and Computer-aided manufacturing (CAM) systems interconnected with telecommunication systems, for example, play a critical role in reducing the time between a product's conceptual stage and its materialisation on the market. International Electronic Data Interchange (EDI) systems also contribute significantly to the improvement of business transactions -- such as order-entry between manufacturing, transportation, merchandise and financial firms -- by reducing response times, risks and losses in each firm.

Globalisation of corporate activities has brought new market opportunities to PTOs such as outsourcing and hubs, described above. Market growth is expected to be high, following the globalisation of corporate networks.²⁴

The fact that major globalisation movements by PTOs in the late 1980s originated in the United Kingdom and the United States (as indicated in Table 2-1) provides evidence of the close linkages between economic and PTO globalisation. These countries have a number of multinational enterprises (MNEs); the development and upgrading of their corporate networks across the globe made it necessary for PTOs in the United States and the United Kingdom to increase their involvement in global activities. PTOs in other industrialised countries followed suit.

Figure 3-1 Major Factors of PTO Globalisation



Changing environment in domestic markets

Decreasing profit margins

The profit margin for basic telecommunication service is decreasing in most Member countries. The compound annual growth rate of subscriber lines between 1985 and 1990 was less than or remained at the same level as that between 1980 and 1984 in sixteen Member countries.²⁵ This indicates that the market is maturing. While many new services are emerging, such as enhanced telephone services and bulk discount options, they are providing relatively lower profit margins. Market liberalisation has, in addition, given birth to an increasing level of competition, that is leading to price rebalancing and cost-based tariffs. Such a market environment has created the increase in the cost to PTOs of a unit of revenue.

Regulatory prohibition to entry to certain business areas

Many OECD countries prohibit PTOs from entering certain business areas. Long-distance services for RBOCs (the United States) and CATV in many countries are examples of regulatory prohibitions. Because of the lack of new possibilities for increasing domestic revenues, PTOs have turned to new business opportunities abroad.

Preparation for possible competition in the home country

Some PTOs use foreign markets to prepare for the entry of new business areas in the home country which are likely to open to competition in the future. PTOs may obtain skills, management and operation know-how in this way.

In the CATV example for RBOCs above, they are investing in CATV operators in the United Kingdom. Once US regulation are relaxed to allow them to enter CATV markets, then the experience gained in the UK market may be transferable to the United States.

Economies of scale

PTOs may benefit from economies of scale by operating on a global scale. The costs of procurement, R&D for new technologies and the supply of financial resources are shared between domestic and foreign business activities. Intangible resources, such as management know-how in certain markets and the provision of a communication service, may also be shared. Telefónica (Spain) intends to obtain this benefit through FDI in Latin American PTOs. PTOs may conserve additional markets for new services and equipment by investment in foreign telecommunication markets.

The changing international environment

Increased opportunities for foreign investment

-- In OECD Member countries

Liberalisation in domestic markets in some countries invited the increase in investment opportunities by other countries' PTOs. In countries where telecommunication markets are liberalised, regulations affecting foreign ownership of telecommunication service providers tend to be more liberal. Value added network (VAN) service and mobile communication services are, for example, more widely open to competition and investment by foreign PTOs than are public telephony services.

The liberalisation of telecommunication policy in the United Kingdom in 1991, allowing cable television (CATV) operators to enter the telecommunication market, illustrates continued PTO interest in entry to voice telephony services. Both foreign and domestic PTOs have invested in CATV, such as BT (the United Kingdom), Bell Canada Enterprise (Canada) and US West (the United States). These foreign PTOs may plan to enter telephone services markets by using CATV facilities.

Basic voice telephony services are also a target for investment where the market is most liberalised and/or foreign ownership of the service provider is allowed. Australia, New Zealand and the United Kingdom, among Member countries, and Mexico and many of the Latin American countries among non-Member countries, provide examples of such markets.

-- In developing countries

Many countries need access to foreign capital and operational know-how for the development of telecommunication systems. Telecommunication infrastructure is considered to be indispensable for economic development and is needed in many countries in Asia, Latin America, Central and Eastern European countries (CEECs), the New Independent States of the ex-Soviet Union (NIS), and the Baltic States. Many of these are currently undertaking privatisation of formerly state-owned PTOs accompanied by liberalisation of telecommunication markets. They intend to facilitate the introduction of foreign capital through the sale of shares to international investors. The sale of the shares of PTOs in Mexico, Argentina, Venezuela, etc. to the North American and European PTOs illustrates this case (Table 2-2 above). Privatisation of the PTO is also being discussed in Hungary.

The telecommunication sectors of the above countries are expected to provide interesting investment opportunities for many Member country PTOs. The market is large. High levels of growth and high return on investment are expected in the long term. Even if some difficulties are envisaged at the beginning, foreign investors may expect possible opportunities for future development, such as franchise or licence obtention, etc.

Liberalisation of, and competition in, international telecommunication services

The allowance of resale and shared use of leased circuits in international telecommunications has triggered off competition between major PTOs. Pressure from large users and major PTOs that wished to provide competitive services in international markets has led to the liberalisation of the usage of

international leased circuits (changes to the CCITT D1 Recommendation in 1991). Pressure from regulators, such as OFTEL in the United Kingdom and FCC in the United States, to require PTOs to restructure tariffs based on costs is increasing. In addition, simple resale of leased circuits is increasingly allowed in Member countries, thus creating further downward pressure on tariffs. These movements in turn accelerates competition in international service markets.

Technological possibilities

Transmission channels

The capacity of transoceanic (*i.e.* both Atlantic and Pacific Oceans) communication channels, facilitated by fibre optic cable, has increased rapidly, while cost per voice path has decreased over the past twenty years [Figure 3-2 (1) and (2)]. After the completion of the currently planned or ongoing construction of these channels in 1996, capacity of the transatlantic channel will be 21.7 times higher than that of 1986, and that of the transpacific channel, 26.5 times higher, including both cables and satellites. The cost of the planned TAT-12/13 (a transatlantic cable to be completed in 1996-97) will be 1/556 of that of TAT-1 (built in 1956), and the cost of TPC-5 (a transpacific cable to be completed in 1996) will be 1/189 of that of Hawaii 1 (built in 1957)²⁶.

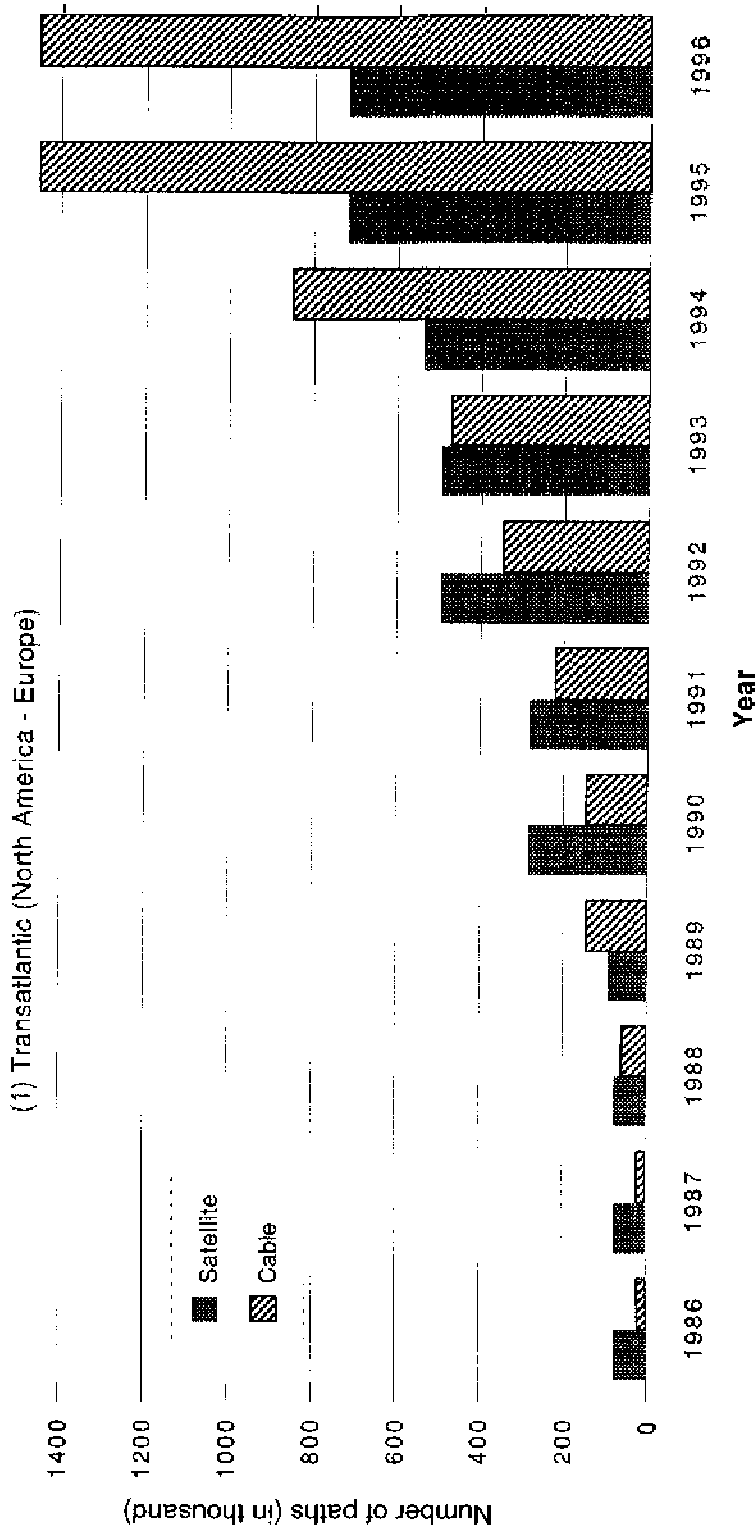
Excess capacity in international trunk-lines available with lower prices has provided an incentive to PTOs to continue price competition to obtain more international traffic to fill it. The more capacity is used, the quicker PTOs obtain pay-back from the initial investment in the channels.

Development of networks beyond national boundaries

Technologies needed for the operation of enhanced global corporate network systems are increasingly becoming available on a commercial basis.²⁷ Synchronous Optical Network (SONET), Synchronous Digital Hierarchy (SDH) and Asynchronous Transfer Mode (ATM) are becoming widely used for a high bandwidth transmission system and will enhance interconnection between corporate networks built over a number of different countries (Figure 3-3). Technologies that allow access to network intelligence, such as the Services Control Point (SCP), Signalling Transfer Point (STP) and Services Switching Point (SSP), are growing out of national networks to the global sphere.

An increasing number of PTOs are introducing various new services based on these technologies for users of global corporate networks. International virtual private networks (VPN) and managed data networks (MDNs) are examples of such services. Their users do not have to be constrained by locations of communication partners worldwide as long as they are in the same network. In international VPN, operated on the basis of agreements between PTOs, users use worldwide private numbering systems and dynamic routing of networks in the same manner as they do in a national VPN. Users may take advantage of billing systems to charge certain numbers, regardless of the origin of the call. Similar functions are available for data communications in MDNs. Thus, national boundaries no longer exist in corporate networks, *i.e.* technology does not differentiate between nationalities of users and providers.

Figure 3-2 Estimated capacity of trans oceanic cable and satellite systems
(1986-1996)



Source: International Institute of Communications (1992)

Figure 3-2 Estimated capacity of trans oceanic cable and satellite systems

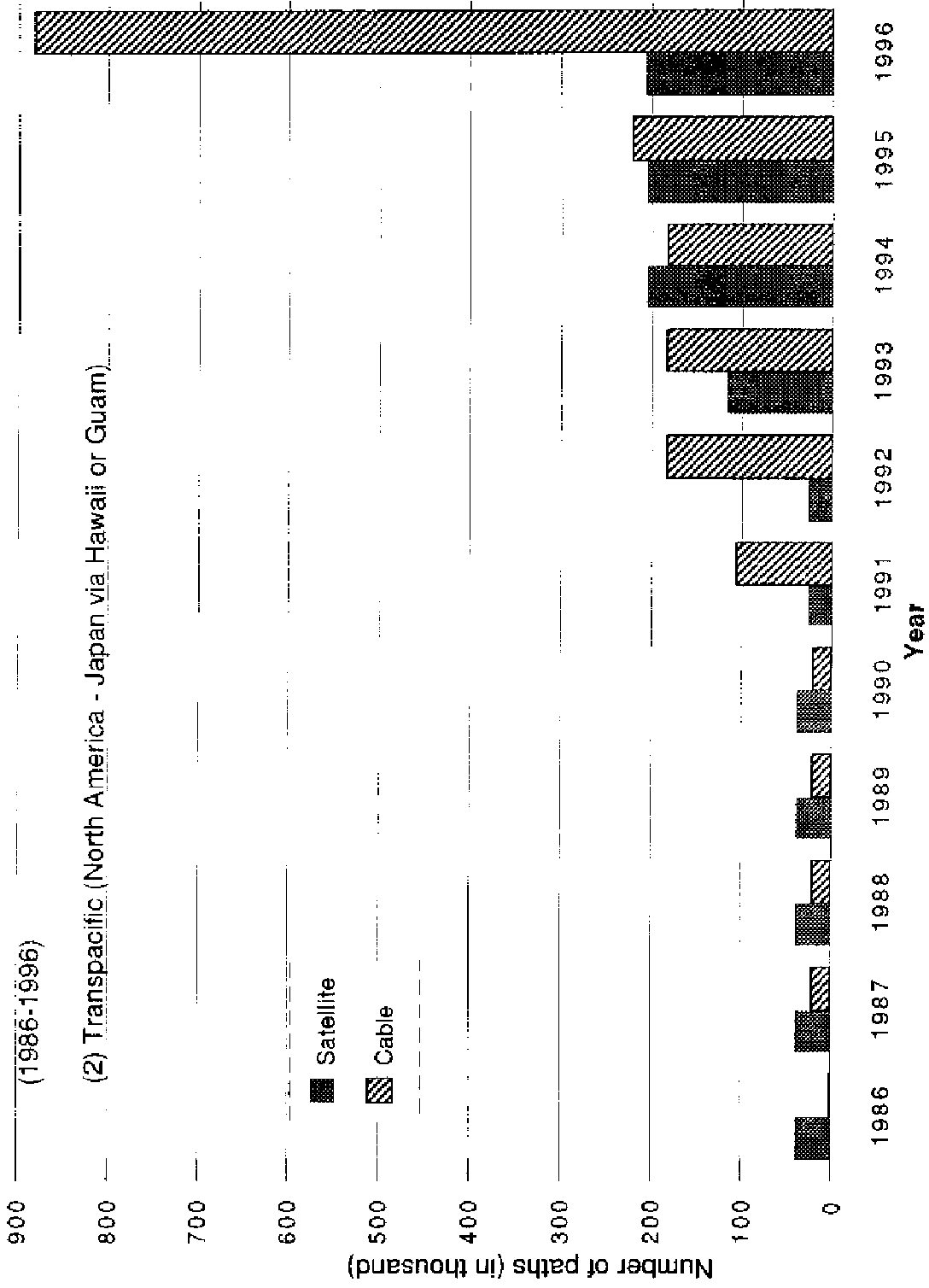
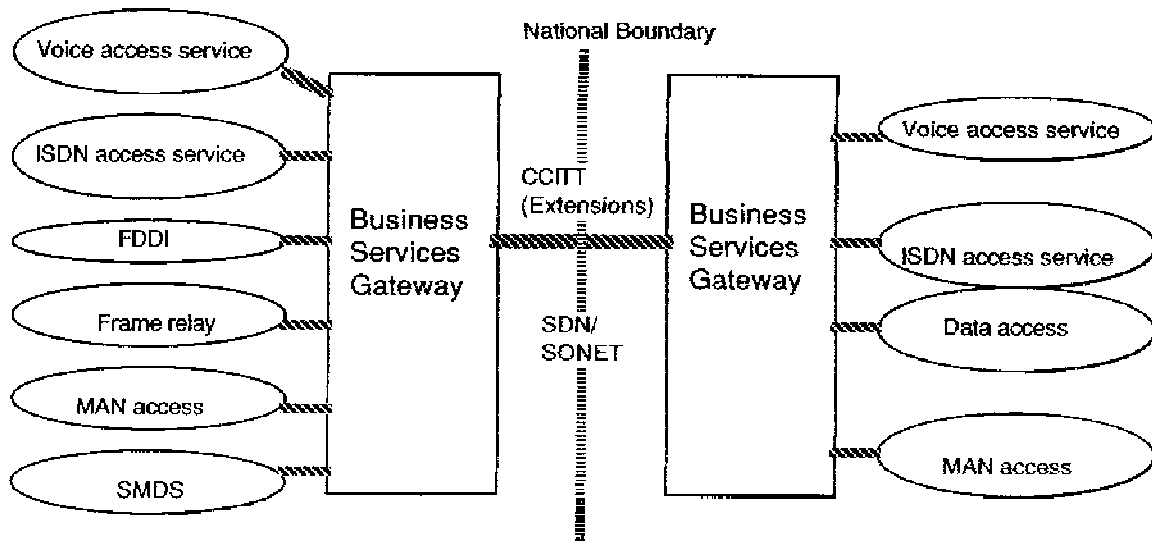


Figure 3-3
Conceptual Model of Global Corporate Network Systems



Source: Uhlig, et. al. (1992).

Development of international VPN may *undermine regulatory distinction between voice and data communications*. Current communication technologies have enabled voice, data and images to be transmitted by the same system, as is seen in the development of broad band integrated services digital network (B-ISDN). If such a mixed handling of communication modes (*i.e.* multimedia communication) is allowed within VPN and is not allowed in the public network in general, regulatory distinction between voice and non-voice services is artificial. Technological legitimacy in this regulatory distinction between voice and other services has ceased to exist.

Increase in transmission capacity, development of intelligent terminals, and increasing modularisation of network functions and their controlling systems enables *separation of ownership of transmission facilities and ownership of service providers*. This is allowed in the domestic telecommunication sectors of an increasing number Member countries, such as Canada, Japan, the United Kingdom and the United States. The same may apply to international telecommunications. At least technology development is leading to a decrease in the justifications for the prohibition of the separation between owners of facilities and service providers on an international basis.

Technical requirements

The high level of need for so-called "end-to-end systems" in telecommunications accelerated the growth of need for global coverage of PTO services. The larger the information system, the more crucial the compatibility between various systems and operations in order for a variety of functions in the system to work consistently well. High levels of interoperability between gateway switches, for example, are required for the operation of large-scale and complex systems. Consequently, corporate network users

increase the demand for services that assisted in the planning, construction and operation of the highly specialised and large-scale systems, provided by a single network provider. This has given the incentive to PTOs to develop services in which the PTO alone looks after the customer's entire network, rather than simply providing the services based on PTO co-operation. International "TRANSPAC",²⁸ provided by FT (France) is an example of this type of service, intended to help users take advantage of the full range of functions available through the network. Although international standards do exist for data communication networks (such as X.25 for packet switching), many PTOs and other network operators recognise that existing standards do not necessarily guarantee the provision of the full service options made available through one PTO's network when interconnected with another provider's network, even if both networks are based on the same standard protocol.

IV. Policy Instruments Related to Foreign Direct Investment -- Foreign Ownership of PTOs

The policy instrument that has the most direct international interface with investments by PTOs is the regulation of the foreign ownership of domestic PTOs. Although, in theory, two policies should exist, i.e. one for incoming, and another for outgoing, investments, most Member countries have rules only for incoming investment. Regulation on foreign ownership of PTOs is instrumental in many Member countries who feel that they need some regulatory safeguards to maintain control of national PTOs. This is the case even if, at the same time, governments see positive interests in outgoing foreign direct investments by national PTOs. Asymmetry in government attitudes is seen here.

Market liberalisation and emergence of foreign ownership issues

Changes in the telecommunication sector associated with market liberalisation gave birth to the need to establish rules for foreign ownership of PTOs. In many countries, liberalisation involved the corporatisation and/or privatisation of formerly government-owned PTOs, notably in Australia, Denmark, Japan, the Netherlands, Sweden and the United Kingdom. This gave birth to the necessity of considering the possibility of foreign ownership of PTOs and its limitation.

The regulation (or deregulation) of foreign ownership of PTOs is currently under discussion in many OECD countries. New rules have been established in countries such as Australia and New Zealand. Foreign ownership restrictions on NTT and KDD in Japan were relaxed at the beginning of 1992. The former is part of the reorganisation of the regulatory framework associated with the introduction of competition. In the latter case (Japan), the government has amended NTT and KDD laws in such a way as to reflect the rapid increase of globalisation in the economy.

In theory, market liberalisation, PTO corporatisation and privatisation are independent issues. Monopoly by privately-owned (or mixed) PTOs exists, such as the Regional Bell Operating Companies in the intrastate markets in the United States and Telefónica in Spain.

Many Member countries, however, have chosen to undertake liberalisation, corporatisation and privatisation together, either at the same time (*e.g.* Australia, Japan and the United Kingdom) or within a certain time range (*e.g.* Denmark and the Netherlands). Many of these corporatised PTOs became joint stock companies, *i.e.* the shares are owned. This gave birth to the possibility for a foreigner to purchase the shares when they are traded on stock exchange markets. In addition, new entrants in liberalised markets are private corporations whose shareholders may include foreigners. Consequently, the need arose to consider the percentage of shares in PTOs that may be owned by foreigners (including foreign legal persons), and the services they may provide.

Table 4-1 Restrictions of foreign ownership:
Matrix showing the principal PTO and its competitors in the domestic market (as of August 1992)

		Foreign ownership of competitors to the principal PTO	
		Yes	No
Foreign ownership of the principal PTO	Yes	<p>Canada* Denmark* Finland* Japan* New Zealand* UK US*</p> <p style="text-align: center;">(A)</p> <p style="text-align: center;">*: With some restrictions/exceptions.</p>	<p>Italy (SIP, Italcable) Portugal (CPRM) Spain</p> <p style="text-align: center;">(C)</p>
	No	<p>Australia (PSTN, M, V) Belgium (V) France (M, V) Germany (M, V) Italy (M, V) The Netherlands (M-, V) Norway (M, V) Sweden (PSTN, M, V)</p> <p style="text-align: center;">(B)</p> <p>() -- Services open to competition. PSTN: Public Switched Telecommunications Services Network M: Mobile Services M-: The second mobile operator not yet selected. V: Value Added Network services</p>	<p>Austria Iceland Ireland Italy (IRITEL, Telespazio) Luxembourg Portugal (Telecom Portugal, TLP) Switzerland Turkey</p> <p style="text-align: center;">(D)</p>

Source: Adapted from country responses to the OECD questionnaire (1992).

Market liberalisation and foreign ownership are also independent issues. Examination of foreign ownership of the principal PTOs and their competitors makes this point clear (Table 4-1 above). In some countries, foreign investors may invest in the principal PTO and provide telecommunication services, including voice telephony services (those countries listed in box A in Table 4-1). In others, foreign ownership is limited to new market entrants, but not the principal PTO (box B in Table 4-1). In other countries, foreigners may purchase shares of the monopoly PTO, but entry to its telecommunication market is prohibited (box C in Table 4-1). In the remaining countries where the PTOs are fully owned by the state and enjoy monopoly status, no foreign ownership is possible (box D in Table 4-1). The countries listed in box B above indicate that liberalisation is not necessarily a prerequisite for the relaxation of restrictions on foreign ownership, while in box C the opposite is true.

It is, nevertheless, true that liberalisation in telecommunication markets, even if it is partially undertaken, inherently necessitates relaxation of restriction on foreign ownership. It has been empirically observed that the introduction of foreign capital serves the purpose of liberalisation, in the sense that it facilitates the financial supply of competitors. Differences between Member countries lie only in the level and speed of relaxation of limitations to foreign ownership.

New Zealand's case deserves attention as an example of the most relaxed form of telecommunication policy in areas of competition and foreign ownership. In that country, the government monitors the PTO in the light of anti-monopoly policy, rather than a special policy for telecommunications. No restrictions exist on the ceiling of foreign-owned shares, except for the special share ("Kiwi Share") which the government owns. Although this choice may not be applicable to all Member countries for the moment, New Zealand's case should be seen as an option that strives toward the new principles of telecommunication policy.²⁹

One question arises: what matters more for government interests, maintenance of a certain level of government control of a PTO by owning shares, or limiting the percentage of shares owned by foreigners? These two issues may appear similar, but have different consequences on the level of government control.

It should be noted that some Member countries regard ownership of a PTO as having little importance to the regulatory structure. In Sweden, for example, corporatisation of the PTO has been of prime importance since this entails the separation of a regulatory institution from an operator.³⁰ The country considers that privatisation of the PTO (*i.e.* sale of its shares) and, consequently, its foreign ownership is of only secondary importance in ensuring the effectiveness of the regulatory system that accommodates competition.

Explicit limitations

General rules

The level of restriction on foreign ownership vary according to the basic framework of regulation in each country. Table 4-2 below presents a summary of the current rules.³¹ Those countries which have Public Switched Telecommunications Networks (PSTN) operators which are joint stock companies, have rules on ownership. This applies, at present, to eleven countries (Australia, Canada, Denmark, Finland, Italy,³² Japan, New Zealand, Portugal, Spain, the United Kingdom and the United States). Foreign

ownership of the main PTO is, on the contrary, impossible in some countries even if they do not have specific rules, notably where the state continues to control the assets and operations of a monopoly PTO.

Different levels of concern on the issue of foreign ownership are observed among the practices in Member countries.

Some countries, such as Denmark and Italy, do not make a distinction between national and foreign owners of PTO shares. For these countries maintaining majority ownership by government is a policy concern, but less importance is placed on the nationalities of share holders. Such a rule has an advantage in that it allows PTOs to obtain wider investors, including foreigners. This may be particularly important where the buying power of domestic investors is not sufficient in relation to the value of the shares to be traded.³³

The same may apply to some PTOs even if they impose ceilings on foreign ownership. For example, shares of Telefónica in Spain are traded on the major international stock exchange markets at a ceiling of no more than 25 per cent of shares owned by foreign nationals. Once the shares are put on the stock exchange market, there are, in practice, no or at least only limited ways, to monitor the nationalities of the owners of the shares traded every day. This experience indicates that the effectiveness of regulation on foreign ownership of PTOs may have to be questioned.

In some countries, as is the case in Australia and Canada, regulation on foreign ownership is *not* law but managed in a "softer" way, *i.e.* as a part of government administration. In Australia, for example, the ceiling on foreign ownership is not stated in the Telecommunications Act 1991, but is currently determined on a case by case basis by the government. Foreign ownership restriction was part of the requirements to bidders for the second PTO (Optus Communication Ltd. was selected) and stated in the Information Memorandum on the sale of AUSSAT.^{34,35} In Canada, the foreign ownership rule is government policy until such time as the proposed Telecommunications Act³⁶ is passed by the Canadian Parliament.

The above observations lead to the question of effectiveness and necessity of foreign ownership rules. If ensuring the control of the national PTO by the government is the reason for maintaining these rules, its necessity may have to be reconsidered. As is observed above, in some countries rules of government ownership may be more meaningful than control of foreign owners. Foreign ownership rules do not have much effect. With adequate regulatory safeguards, there is no particular reason for maintaining foreign ownership restrictions.

Services

The type of services provided by those PTOs which are fully or partly owned by foreigners differs from one country to another (Table 4-1 above). The restrictions on voice telephony services *via* fixed link networks are generally more strict than those for mobile, satellite or value added services. In some countries competition is allowed in all services including PSTN (*e.g.* Australia, Canada, Japan, New Zealand, Sweden, the United Kingdom and the United States).

Table 4-2. **Summary of rules applied to foreign ownership of public telecommunication operators¹**

Country	
Australia	The Government currently limits foreign ownership to a maximum of 49 per cent for the second carrier (there is no legal restriction.)
Canada	<p>a. The Government currently limits ownership and control of carriers by foreign owner(s) to 20 per cent (there is no legal restriction.) As for Teleglobe Canada Inc., non-resident corporations may not own more than 20 per cent of the voting shares, while non-residents may own up to 30 per cent. Grandfather clause does not affect ownership of B.C. Tel. and Québec Tel., both 51 per cent owned by GTE Corporation (US).</p> <p>b. Acquisition of control of a Canadian firm with assets exceeding C\$ 500 million must be approved by Investment Canada.</p>
Denmark	Ownership up to a maximum of 49 per cent is allowed for any body (including foreign nationals) outside government.
Finland	No limitations, but the company must be registered in Finland.
Italy	The government shall own more than 50 per cent of STET, SIP and Italcable. IRITEL (a holding company) shall be 100 per cent owned by the government.
Japan	Foreign ownership is allowed up to less than 20 per cent of the shares of NTT and KDD. The ceiling is one-third of the shares for other Type I carriers. There are no restrictions for Type II carriers.
New Zealand	<p>a. No restriction on the ceiling of the share owned by foreigner(s), except that any single foreign owner is allowed a maximum of 49 per cent of the shareholding.</p> <p>b. The original shareholders (Ameritech and Bell Atlantic) are required to resell TCNZ's shares to reduce their aggregate ownership to 49.9 per cent of the total shares by 12 September 1993.</p>
Portugal	Planned privatisation of both Telecom Portugal and TLP with a restriction on foreign ownership of 10 per cent maximum. CPRM is majority private-owned.
Spain	State ownership in Telefónica is currently 35 per cent. Foreign capital must not exceed 25 per cent and remains subject to the provisions in Spanish law governing foreign investment in specific sectors of the economy.

Table 4-2. **Summary of rules applied to foreign ownership of public telecommunication operators** (cont'd)

Country	
Sweden	<ul style="list-style-type: none"> a. Swedish Telecom: <i>De facto</i> no foreign ownership (100 per cent owned by the government). b. Other PTOs: No rule for foreign ownership. TELE 2, the second operator of long distance and local voice telephony services starting from January 1993, is owned by Cable and Wireless (UK) for 39.9 per cent.
United Kingdom	No restrictions on foreign ownership, except that any single owner, regardless of his/her nationality, is allowed no more than 15 per cent of the shareholding.
United States	<ul style="list-style-type: none"> a. Radio licences: Those PTOs owned by foreigners by more than 20 per cent, or which include one or more foreigners among the Board members are prohibited from the granting of a radio license used for the provision of a common carrier broadcast and certain aeronautical services (Section 310 of the 1934 US Federal Communications Act). Section 310, however, gives the FCC greater flexibility to grant a common carrier radio license to a foreign-controlled applicant when that applicant invests through a subsidiary that holds the license. In such a case, Section 310 states that the foreign ownership of the parent corporation can rise to 25 per cent and gives the FCC discretion to allow foreign ownership to exceed 25 per cent. b. Imposition of regulation on the dominant carrier status: The FCC imposes dominant carrier tariff and reporting requirements on those international routes where a US carrier's foreign affiliate has the ability to discriminate against unaffiliated US carriers through control of bottleneck facilities and services in the foreign market. c. Comsat (Satellite carrier): Maximum of 20 per cent of shares may be owned by foreigners.

1. For those countries not listed in the table, there is generally 100 per cent state ownership of the main PTO and therefore a *de facto* restriction on any foreign ownership exists.
2. Those carriers determined as dominant in the provision of international services (whether US or foreign-owned) must obtain FCC approval before adding circuits on certified routes; file cost support with their tariffs, which are effective only after 45 days' notice; and report quarterly on traffic and revenues. In contrast, non-dominant international carriers merely notify the FCC of circuit additions on a semi-annual basis; may implement tariffs on 14 days' notice and need not file cost support; and file annual traffic and revenue reports.

Source: Adapted from country responses to the OECD questionnaire and other supplementary sources (1992).

The ceiling on ownership is different among countries. For example, France allows less than 20 per cent of foreign ownership in mobile and value added services,³⁷ while Germany has no restriction. Given different degrees of market opening, there is as yet no harmony with regard to foreign ownership among the member States of the European Union (EU).

Percentage of foreign-owned shares

Eight countries have specific rules regarding the percentage of shares that may be owned by foreigners. This level differs widely, from no restriction (New Zealand³⁸ and the United Kingdom³⁹) and 49 per cent maximum (Australia for the second carrier and Denmark) to less than 20 per cent (Canada, Japan and the United States).

Countries also vary in their categorisation of PTOs. Some countries impose different rules depending on whether ownership concern is on network infrastructure facilities (Canada and Japan), or on radio transmission facilities only (the United States), while other countries make no distinction between PTOs (New Zealand and the United Kingdom).

Implicit limitations

Telecommunication policy instruments

Governments apparently intend to maintain minimum levels of safeguarding national interests through both direct and indirect control of PTOs, although the levels differ among countries. Imposing limitations on foreign ownership of PTOs is an explicit means of doing so but other, implicit, means are also adopted to supplement the effectiveness of these policy measures.

The "Kiwi Share" held by the New Zealand government, and "Golden Share" held by the UK government, provide examples of safeguards other than restrictions on foreign ownership. The former is intended to guarantee the implementation of minimum national interests, and the latter provides veto power in decision-making for critically important issues. More than two measures are used in most cases, such as using both restrictions on nationality of the members of the Board of Directors and ownership of the shares (Table 4-3).

Corporatisation of a PTO does not necessarily lead to an opening of its shares to foreigners. Even if a PTO is a joint stock company that does not have specific rules for government ownership, in the case where its share is not floated on the stock market, foreign investment is impossible. The current status of shares of PTT Netherlands (the Netherlands) is an example. Such an example, however, may have to be interpreted as an indication of cautiousness on the part of government, rather than as a rejection of foreign ownership. The timing and manner of the sale of shares to investors are under discussion in the country concerned.

Licensing systems may be used as another means to limit foreign ownership. Imposing the limitation comes under the domain of national policy. The possibility of foreign investment, however, may be vulnerable in countries where the criteria for issuing licences to telecommunication operators are not clear and transparent. Such a practice can in fact have the effect of discouraging foreign investment in the telecommunication sector concerned.

Table 4-3. **Rules affecting limitation of foreign control of public telecommunication operators**

Japan (NTT and KDD)

No foreign national is allowed to be a member of the Board of Directors.

The Netherlands

Shares of the PTO are not traded on stock exchange markets.¹

New Zealand (NZTC)

The government owns the "Class B" share ("Kiwi Share"). Unless the holder of the "Share" otherwise consents, TCNZ is required to satisfy four conditions concerning the level of charges and universal service obligations.

The United Kingdom (BT)

- a. Board of Directors
 - One or two member of the Board of BT may be appointed by the government.⁴⁰
 - No foreign national may hold the position of chief executive officer (CEO).
- b. The "Special Share"
Prescribed changes to the Articles of Incorporation are subject to approval by the government which owns the "Special Share" (so-called "Golden share").
- c. No party is allowed to own more than 15 per cent of BT shares.

United States

Board of Directors

- No radio station licence shall be granted or held by any corporation of which more than 20 per cent of the share is owned by foreign nationals or foreign entities, or of which any officer or director is a foreign national.
- All the members of the Board of Comsat shall be US citizens.

1. The sale of shares to the public is planned in 1994.

Source: Compiled by the Secretariat.

General restrictions on foreign investment

Many Member countries apply rules on foreign direct investment to telecommunications: Australia, Canada and Finland are examples mentioned above. In the United States, the Exon-Florio provision in the 1988 Omnibus Trade Act authorises the President to prevent purchase of a US corporation by a foreign corporation in order to protect national security. The president has the authority to secure communications indispensable to national security in time of war (The Federal Communications Act, Article 606). In France, different treatments are applied to citizens of the European Union (EU) and citizens of non-EU countries. From 1 January 1993, citizens of the EU receive the same treatment as citizens of the country concerned for investment in the Union. This means, in France, that a simple declaration to the Minister of Finance is sufficient. A different procedure is required for investments made by non-EU nationals, depending on the level of investment.⁴¹

The application of the general rules for foreign (incoming) direct investment may allow the Minister of Finance (or National Treasurer) to formally intervene in the sale of shares of PTOs, thus playing a role in telecommunication policy-making. For example, in Australia, the Foreign Acquisition and Take-overs Act is applied to the control of foreign ownership of the second PTO. Once the Act is enacted by the sale of the shares of Optus in the stock exchange market, the Treasurer would then have the ability to either "un-approve" the sale or divest shares in the case where the ratio of shares owned by Australians is discovered to be lower than 51 per cent.

Regulatory conditions on outgoing foreign investment

Some Member countries have restrictions on outgoing investment by PTOs but these rules are vulnerable. In Germany, for example, the current law defines DBP Telekom as the Federal Administration body and for this reason limits its activity to within the boundary of the country. It is, however, expected that, after the amendment of the law that is currently under discussion, foreign investment by the PTO will become possible through its subsidiary.⁴² The Japanese Government is, on the contrary, cautious. Although the NTT law is silent about outgoing foreign investment by NTT, the company consults with the regulatory authority, the Ministry of Posts and Telecommunications (MPT), to obtain its opinion on foreign investments on a case by case basis. This is partly because of the separation of domestic and international telecommunication services providers in its regulatory system. NTT's activities are limited to telecommunication services to domestic markets, and KDD, to international markets. MPT is concerned about the possibility of erosion of the NTT and KDD laws⁴³.

The pros and cons of the control of foreign ownership of PTOs

Difficulty in assessment of country interests lies in the following difficult and unrealistic dichotomy between those countries that *invest in* the telecommunication markets of foreign countries, and those that *receive investment* from abroad. Some countries may have an interest in both making and receiving investments.

National interests to protect

Those countries that *receive* investment from abroad tend to be concerned for the following reasons:

National security

Governments primarily try to maintain autonomy of PTO management to ensure national security. This originates from a lack of confidence in the control of foreign-owned PTOs. The restriction on foreign ownership is considered as a means to impose some limits on foreign control of PTOs. This applies, more or less, to countries that have specific rules on foreign ownership, such as Japan, the United Kingdom and the United States. In Japan, national security was the major reason for placing a ceiling on the share of PTOs owned by foreign investors.⁴⁴ In the United Kingdom, where control on foreign ownership is most relaxed, the Minister of Trade and Industry may issue an appropriate order to PTOs, regardless of ownership, in the case of needing to protect national security. In the United States, the need to keep national control of radio transmission systems was felt after an experience during the Second World War during which the US government could not control radio broadcast systems because of foreign ownership.

Research and development

The need to maintain control of PTOs is also viewed from the requirement of research and development (R&D) in information technology (IT) and industry. Major PTOs in Member countries have played a critical role through the provision of both financial and human resources and markets for IT R&D and industries. The same is true for both those PTOs that have manufacturing branches and those that do not. PTOs in the former case, such as AT&T (the United States), undertake R&D and produce equipment. The same applies to BCE (Canada) that (either directly or indirectly) owns Bell Canada (PTO), Northern Telecom (manufacturer) and Bell Northern Research (R&D). PTOs in the latter case, such as France Telecom (France), NTT (Japan), and Swedish Telecom (Sweden), undertake R&D in collaboration with equipment manufacturers in their home countries. These PTOs have used telecommunication markets in the home country as the seed-bed and test-field to improve newly developed technologies and applications. Thus, PTOs have fed the development of the national IT sector. Securing the domestic market is crucial against a background of fierce competition in the IT sector in international markets.

Positive factors

For the investing countries

Trade interest is a key factor for those countries where the government give support to PTOs to invest abroad. An improvement in the country's trade balance is expected in the long term from PTO revenue from international activities. A statement by an official in the US State Department indicates this point:

"The international trade interests of the United States are obviously served when domestic telecommunication firms, such as the regional Bell companies, compete effectively in these foreign restructurings. The export of telecommunication products, services, and investments contributes directly to improving the US balance of trade ..."⁴⁵

Trade interest is also sometimes the reason for a country hosting the entry of foreign PTOs. PTOs in the host country may expect to enter foreign markets in exchange for the acceptance of foreign PTOs in the home market. Reciprocity has been applied to international value added services (VANs) in the telecommunication sector. A portion of markets taken by foreign-based PTOs is seen as part of the costs of globalisation of PTO activities.

For countries that receive investment

-- Access to capital

The ease of access to needed capital by PTOs is one of the significant advantages of foreign ownership for the host country. It is a means by which government promote competition in the telecommunication market by facilitating the creation of competing service providers. This was the case for Australia, Japan and New Zealand when their telecommunication markets were liberalised.

Access to capital has prime importance in those countries that suffer from a shortage of financial resources for the development of infrastructure. This applies to many non-Member countries, such as CEECs, the NIS, the Baltic States, (some) Latin American countries, and (some) Asian and African countries.

-- Increased options for users

The entry of foreign PTOs in the home market will create competitive incentives for both existing PTOs and new entrants to diversify services and price options. New services developed in foreign countries may be provided. For example, users in Mexico may obtain benefits from the development of international services by US PTOs. Three major US-based common carriers have started various competitive services between Mexico and the United States. Those services such as "Accunet" by AT&T, "800" long-distance toll-free service by MCI, and international private line service *via* fibre optical cables by Sprint⁴⁶ provide more options to both Mexican and US users. From the Mexican users' point of view, globalisation of US PTO activities in fact accelerated competition in international services available in Mexico. The same is true for price reductions. In Japan, for example, foreign PTOs purchased shares of international telecommunication service providers, such as IDC (C&W) and ITJ (BT). Competition between service providers, the existing carrier KDD and two new entrants, resulted in a rapid reduction in charges.⁴⁷

-- Incentives to management

Participation of foreign PTOs in the management of a domestic PTO may introduce innovative ideas and habits in management. This will stimulate and revitalise existing PTO management to adjust to

a competitive environment, thus leading to an efficient distribution of corporate resources and better ways to provide services.

Policy issues arising from foreign direct investment

Asymmetric regulation in foreign ownership and competition gives birth to some policy issues. For example, some PTOs are investing in telecommunication services abroad for which they have monopoly status in their home country. France Telecom, *via* its sister firm, France Cable et Radio (FCR), purchased 5 per cent of the share of the Mexican PTO, Telmex, and 32.5 per cent of the share of one of the major PTOs in Argentina, Telecom Argentina, in 1990. In France, however, foreign ownership of France Telecom is not possible. Telefónica (Spain) owns shares of PTOs in several Latin American countries, such as Puerto Rico (80 per cent in 1992) and Venezuela (40 per cent with AT&T and GTE in 1991). Foreign ownership of shares of Telefónica is limited to no more than 25 per cent in its home country.

Effectiveness of privatisation

Would the purposes of privatisation be achieved if the new (major) owner of a PTO is owned, either fully or partly, by the foreign government? Would it guarantee the benefits of privatisation, such as improved management and quick response to customer needs, for the host country?

Possibility of subsidised competition

An asymmetrical international regulatory environment may create *subsidised competition* between foreign PTOs investing in the same country. Where do monopoly (or near-monopoly) PTOs obtain financial resources to invest abroad? Let us take an imaginary situation in which two foreign PTOs enter the market of a third country (*i.e.* a country that *receives* investment). What happens if one PTO has monopoly status in its home country and the other does not? Is there a possibility of "subsidised competition"? Is there a role for governments to avoid possible abuse of competition in telecommunication markets?

Who are the beneficiaries of foreign investment by PTOs?

Viewed from the point of view of the *investing* countries, can PTOs use profits from the home country to invest abroad, instead of using them to improve services and reduce tariffs to domestic users?

Viewed from the point of view of countries *receiving* investment, what mechanism is needed for the public to take the best advantage of profits from telecommunication markets in the home country? Is there a need for a mechanism to prohibit profits from going abroad?

Transparency in accessing the market

The same level of accessibility to the market in the country concerned should be assured for both domestic and foreign PTOs. This issue is also a question of *national treatment* of foreign PTOs. The transparency of current regulatory systems *vis-à-vis* foreign-owned PTOs can be tested by examining whether the information needed to access national markets is as freely available to foreign as it is to domestic PTOs. Rules to ensure transparency in market access are being considered by regulators in the context of network interconnection, such as Open Network Architecture (ONA) in the United States and Open Network Provision (ONP) in Europe.

Implications for trade in telecommunication equipment

The opening of the market to foreign PTOs inevitably requires the opening of the market for telecommunication equipment. Limitations or constraints on the introduction of certain telecommunication equipment may, if there is no reasonable explanation, be considered as a *de facto* entry barrier to the service market. Market opening should be associated with the opening of the equipment market. Although it has been a fact that PTOs often had certain manufacturers that provided network equipment almost exclusively to them, such practices will have to end. Taking into account the fact that a variety of service functions have to conform precisely to the functions of telecommunication network, the policy of maintaining monopoly in telecommunication infrastructure may need to be formulated in a way that accommodates network interconnection of other PTOs at the higher layer of the network.

V. Towards a New Framework of Telecommunication Policy

-- Telecommunications, Trade and Competition Policies

Inseparability of the three policies

As PTO activities abroad increase, an increasing level of interrelationship is created between telecommunications, trade and competition policies. Requests made by globalising PTOs reveal that these three policies are inseparable from each other in an international interface of telecommunication policy.

Market access issues for foreign PTOs are the same as competition issues for national competitors of the PTO (referred to as telecommunication operators or TOs to distinguish from PTOs in this paper). A striking similarity exists between requests made by TOs and foreign PTOs in pursuit of rules for fair competition. The PTOs in major economies wish to ensure non-discriminatory access to foreign markets, *i.e.* equal accessibility for foreign PTOs to network facilities, minimum customer data, network information, type approval procedures, etc.⁴⁸ The dual roles currently assigned to many PTOs, *i.e.* as the telecommunication authority and as an operator, will have to be questioned. Those PTOs pursuing investment in foreign markets may request some safeguards, both structural and non-structural, to avoid possible disadvantages from countries where separation does not yet exist between regulation and service provision. Some foreign PTOs may question restrictions to foreign investment⁴⁹ in seeking for fair competition. Policy-makers should eliminate any possibilities of abusing competition by either domestic and foreign telecommunication operators. At this point, both domestic and foreign TOs share an interest in national telecommunication policy.

How do we set the framework?

The challenge to policy-makers is to formulate the right framework for telecommunication policy to accommodate the globalisation of the economy. Existing asymmetry in policies among Member countries has to be overcome. This task may include the reform of national telecommunication policy based on internationally-agreed rules as national and international policies are becoming increasingly inseparable in telecommunications.

Major questions, mutually related to each other, underlying the analysis in this section are:

- Is it possible to deal with the issue of PTO globalisation in the framework of telecommunication policy, or should it be examined in the broader trade agenda, such as general rules for free capital movements and international investment?
- To what extent do existing policy instruments for general trade and competition pick up telecommunication issues?; and
- What policy options are available in the application of the broader trade agenda to the telecommunications sector for the formulation of internationally-applicable rules?

Trade rules and telecommunications policy

In 1989 the OECD undertook an extensive review of items of telecommunication policy in the light of the free trade rules discussed in the context of trade in service at the Uruguay Round of the General Agreement on Tariffs and Trade (GATT).⁵⁰ The task for policy-makers, in practice, would be to examine the levels of applicability of the three major principles in GATT, such as National Treatment (NT), Most Favoured Nation (MFN) and Transparency, to each items of telecommunication policy that have high level implications for international trade (Table 5-1).

Efforts to introduce agreed practices as common trade rules to be applied to telecommunication services are currently being made in the context of the General Agreement on Trade in Services (GATS) in connection with the GATT Uruguay Round. Rules for telecommunication services are included in the Annex of the proposed agreement on GATS. If agreed by its member countries, GATS will set down a framework for progressive liberalisation of the telecommunication service markets, perhaps eventually including facilities and reserved services.

International capital movement rules and telecommunication policy

International capital movement issues are discussed as foreign ownership issues in the telecommunication policy domain. A variety of policy instruments exist in Member countries for dealing with the rules of foreign ownership of PTOs.

Restriction on foreign investment in telecommunications is not always as rigid as it appears. In fact, governments relax restrictions on foreign investment subject to case-by-case approval, or where needed. This leads to a question as to justification of prohibition of foreign investment in telecommunications. In the United States, for example, foreign ownership rules are administered with some flexibility. Although the country broadcast and common carrier licences cannot usually be issued to foreign nationals and entities and those firms owned by foreigners by more than 20 per cent, there is an exception. Foreign-controlled domestic corporations may obtain licences subject to FCC approval:

"Aliens, representatives of aliens, foreign governments or their representatives, or foreign registered and foreign-owned corporations are prohibited from receiving broadcast or common carrier licences. ...

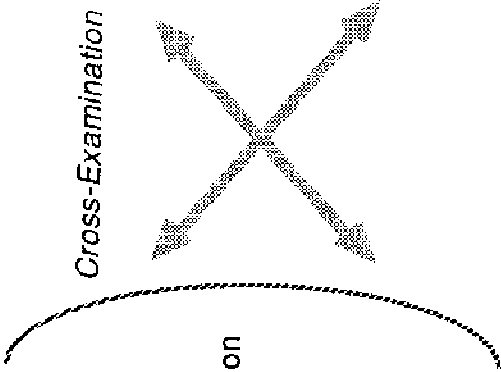
Regulations do permit foreign-controlled domestic corporations, however, to hold broadcast or common carrier licences when the Federal Communications Commission finds approval of such a licence to be in the public interest."

Governments relax the rules in cases where a large amount of capital is urgently needed. In Germany, provision of voice telephony services *via* fixed link network facilities and the construction and operation of telecommunication transmission facilities (including switching facilities) are kept under state monopoly because the government wishes "to guarantee the quality of services in all parts of the economy".

Modernisation of telecommunication infrastructure in the eastern part of Germany, however, justifies the introduction of foreign investment as an exception to the monopoly rule discussed above:

Table 5-1

Cross-examination table of principles of free trade and items of telecommunications policy

TRADE PRINCIPLES	TELECOMMUNICATIONS POLICY ITEMS
National Treatment	
Most Favoured Nation	
Non-discrimination	
Transparency	
	<ol style="list-style-type: none"> 1. Market Access <ol style="list-style-type: none"> 1.1 Access to Networks 1.2 Other Issues Related to Access to Markets 1.3 Infrastructure: Construction and Operation 1.4 Responsibilities of Monopoly Facility Operators 1.5 Satellite Facilities 2. Technical Barriers 3. Tariffication 4. National Regulatory Objectives 5. Service Monopolies <ol style="list-style-type: none"> 5.1 State-Sanctioned Monopolies 5.2 Non-Competitive Markets and Positions of Economic Dominance at the International Level 6. Exceptions and Safeguards 7. Developing Country Concerns 8. Compatibility with Existing Agreements 9. Decentralisation of Competence in the Field of Regulation of Activities 10. Procurement of Equipments

Source: Modified based on OECD (1990)

"As to the contribution of foreign investment to the modernisation of the telecommunication facilities of East Germany, the German experts confirmed that foreign firms have been invited to participate in this endeavour in the same conditions as German private firms. For instance, the firms have been authorised to provide, during a transitional period ending in 1997, satellite-based telephone services which are reserved in Western Germany to the TELEKOM monopoly."

With growing recognition of the economic implications of telecommunications, a possibility of the review of these restrictions is suggested by some countries:

"... particularly in view of the scope of the restrictions in this area, which cover a growing variety of activities and technologies (e.g. data transmission, residential computer communication linkages, etc.) in a field of major economic importance, it would be helpful for the United States authorities to review current legislative provisions with a view to determining whether all the restrictions on foreign investment are justified by considerations of public order and essential security interests."

The following two factors will have to be taken into consideration simultaneously:

a) *Why do we need safeguards?*

What are the appropriate criteria for the national interest for the telecommunication sector? Is there evidence that foreign investment in telecommunications may undermine national interest? Is the foreign ownership issue a rational concern, or a concern composed of both emotional and rational factors?

b) *Definition of "foreign-owned"*

The definition of "foreign-owned" is not always clear in Member countries. The United States has provided an example of a relatively clear definition:

"A corporation is considered foreign-owned if any director or officer is an alien, or if more than 20 per cent of its capital stock is owned by aliens, a foreign government, or a foreign-registered corporation."


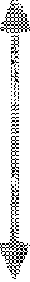
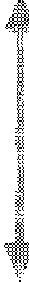

Current movements in the development of regional economic co-operation, such as the unified market of the European Union and the North American Free Trade Agreement, are likely to necessitate reconsideration of the rules that differentiate "foreign-owned" corporations from national ones.

Competition rules and telecommunication policy

Table 5-2 presents a possible framework for examining the principles of telecommunication policy in the light of the rules governing free market competition.

Table 5-2

Framework for cross-examination between the idea of free competition and major telecommunications policy principles

TELECOMMUNICATIONS	COMPETITION	LEVEL OF REGULATION
Universal service	Leave it in market competition	<p>Low  High</p> <p>ex. Canada, Japan, New Zealand, Japan, UK, US, etc.</p>
Infrastructure (Public network)	Leave it in market competition	<p> ex. Austria, Belgium, France, Germany, etc.</p>
National security	Level of its importance differs from a country to another	<p> Level of its importance differs from a country to another.</p>
Common carrier	Leave it in market competition	<p>Private sector  Public sector</p> <p>Canada, New Zealand, UK, and US. Australia, Japan, Sweden, Spain, Austria, Belgium, France, Germany, Switzerland, etc.</p>

Different countries have different levels of liberalisation for different reasons. As long as some services are allowed in some countries, but not in others (*i.e.* competition in PSTN services, ownership of infrastructure, etc.), criteria for the limitation or prohibition of competition in these areas have to be made clear.

New movements -- telecommunications in FTA and NAFTA

Some Member countries have undertaken to put telecommunication service in the trade agenda.

Free Trade Agreement

The Free Trade Agreement (FTA) that came into force in January 1989 between Canada and the United States was the first bilateral trade agreement that included telecommunication services. The FTA deserves attention as it brought telecommunication services into a trade regime for the first time and applied the national treatment principle to parts of the sector. Computer services and telecommunication-network-based enhanced services were one of the three services contained in the Sectorial Annexes.⁵¹ Under the terms of FTA, it may be said that the *status quo* in existing telecommunication policy frameworks in the two countries was preserved in the sense that free trade rules were confirmed for enhanced telecommunication and computer services and for any new services in these categories introduced on the market after the Agreement came into effect. The types of telecommunication services included in the Agreement was limited, and excluded voice telephony services. The underlying intention in the telecommunication Annex of FTA was, however, to preserve existing levels of market access opportunities between the two countries. Maintenance of the existing regulatory framework was meant to ensure the same level of openness in the two markets, envisaging a possible further opening in the future, rather than a backwards move to more restrictive market access.

North American Free Trade Agreement

A mutual market opening was agreed to (on a draft basis) between Canada, Mexico and the United States in the telecommunication sector in the North American Free Trade Agreement (NAFTA).⁵² NAFTA will create a more competitive environment for telecommunication equipment firms and will establish common North American "rules of the road" for providers and users of telecommunication and computer services. All custom duties will be eliminated for telecommunication and computer equipment within ten years. With respect to services, NAFTA goes beyond the general approach in trade agreements for goods in that it applies to domestic regulatory regimes. The Agreement has three elements in this regard: First, it establishes "reasonable and non-discriminatory" conditions for access to and use of public telecommunication transport networks and services. Second, it established that the conditions for providers of enhanced telecommunication services reflect a competitive market approach. Third, it sets in motion a common approach towards standards for telecommunication equipment attached to public networks. The agreement does not apply to the provision of basic or public telecommunication networks or services. Clear safeguards are, however, placed to prevent the monopoly system of PTOs from giving birth to anti-competitive effects.

There will be a greater burden of adjustment on Mexico given that the introduction of competitive markets and liberalisation has occurred at a more recent date than in Canada and the United States. Thus, Mexico will open its enhanced telecommunication and computer services markets to 100 per cent foreign investment (from current levels of 49 per cent) and allow the provision of such services on a cross-border basis from Canada or the United States effective 1 July 1995.⁵³ These markets are currently open in Canada and the United States.

It should be mentioned that Mexico, however, has established a more liberal foreign ownership regime (with up to 49 per cent permitted) for basic telecommunications than either Canada or the United States.

One remarkable achievement in NAFTA was the allowance of cross-border service provision, i.e. right of non-establishment, in trade terms.⁵⁴ This means for enhanced or value added service providers that they may reach each other countries' markets across national boundaries. Services such as those provided to users in Mexico using facilities located in the United States are allowed. This agreement facilitates the entry of TOs in telecommunication services markets. NAFTA is intended in this way to stimulate competition in telecommunications.

The Agreement facilitates the development of private networks by providing a non-discriminatory approach to the use of the telecommunication infrastructure within and across national boundaries in the three countries. NAFTA, in this way, supports increased economic activity within a more integrated North American economy.

From the point of view of users of private networks, mostly large firms, NAFTA guarantees them the most advanced information systems available for their businesses with no locational constraints. Agreements on telecommunications in NAFTA are thus designed to support the increase of economic and information flow in North America.

Observations

Two observations can be made drawing upon experiences from FTA and NAFTA:

- countries that are less liberalised will face greater adjustments from the inclusion of telecommunication services in free trade rules, as is the case for Mexico; and
- in order for telecommunication services to form part of free trade agreements, some adjustments in the regulatory and legal framework of participating countries may be required.

VI. Challenge to Telecommunication Policy-makers: Paths to Telecommunication Policy in the Globalising Economy

The current scene in international telecommunications is becoming "chaotic", in that the existing framework of international telecommunications, based on the assumption that one country is served by one PTO, is being increasingly undermined. Many PTOs are developing the scope of their services regardless of customer nationalities and national boundaries.

Market liberalisation triggered the growth of the "chaos" through PTO globalisation. Globalisation thus may be seen as a way for PTOs to adjust to ever-increasing competition in both domestic and international markets. Once started in some countries the impacts of market liberalisation are integrated in the globalising economy, and put pressure on other countries for (further) liberalisation.

Problems arise as to the direction of the adjustment. Can PTOs manage competition? Is there not a possibility of a new style of monopoly arising? Will the world telecommunication market give birth, after the current period of fierce competition, to a new form of market oligopoly on a worldwide basis rather than to true globalisation of PTOs. What are the implications of this movement for national telecommunication policy?

The challenge to policy-makers is to reorganise existing telecommunication policy to accommodate the globalisation of economic activities. Such a reorganisation should serve both national and international interests. One of the difficulties of PTO globalisation resides in the fact that it can not be solved in a framework of "foreign *versus* national interests". Users of telecommunication services in all countries benefit (and lose) from the globalising activities of foreign PTOs. International implications should be taken into account in the development of national telecommunication policy.

What policy options are available for a set of new rules for domestic and international telecommunications?

Imagining two extreme situations may be useful in elaborating possible options. One option is to allow free competition in all telecommunication markets based on transparent rules; the other is to maintain PTOs under the sole control of government.

The first option may look to be a fair rule of competition, but in fact it will not work in this way. The peculiarity of the telecommunication market is the existence of a dominant PTO in each country. Existing nationally-dominant PTOs could use their existing dominance, the revenues derived from this dominance, and intangible assets built up during the past monopoly era (such as human skills and facilities) to enhance their competitive edge. National PTOs hold all the information needed for entry to the market, such as network and customer information. Relatively small and new TOs are therefore not on the same par from the beginning of competition. Transparency rules alone are insufficient in a market that was until recently legitimately ruled by a monopoly service provider.

The second option is evidently undesirable. Governments should maintain the benefits of competition experienced by almost all Member countries.

A realistic option exists somewhere between the two policy options discussed above. Such an option should be in accordance with the rules for free markets and with trade rules.

Transparency rules should be supplemented by a set of rules ensuring that the new competitive market is a fair market. Governments need to impose effective safeguards against possible market abuse by PTOs at the national level. Such rules should include clear separation of reserved and competitive markets, transparency of accounts, safeguards to avoid cross subsidisation by PTOs and separation of operational and regulatory bodies of telecommunication services. Transparency is also needed in technological issues, such as standards and procurement in telecommunication equipments. The ONA and ONP are examples of instruments that are intended to ensure equality in network interconnection.

The same applies to international markets. As discussed above, governments rarely have control on PTO investment abroad and service provision in international markets. One government alone is insufficient to monitor fairness of competition beyond national boundaries, even if some possible adverse effects on national economies are foreseen. International commonly-accepted rules on services, such as those negotiated in the context of General Agreements on Trade in Services (GATS), are awaited.

What options are available for PTOs? Those PTOs that do not have large national markets and that do not have a number of multinational enterprises in the home country will have to compete with large PTOs based on large foreign markets. This is the question that should be asked of small PTOs. Large PTOs are likely to survive the competition. Although this question is primarily a managerial one, policy-makers should also consider it. Many PTOs still come under government control for critical decision-making, even when the market is liberalised and the PTO privatised. Price control and regulation of market entry are, for example, subject to government policies. Governments thus have substantial influence on PTO corporate strategy planning.

Economic interdependence has become an irreversible fact of life for virtually all governments. The international dimension of national telecommunication policy is increasing. International dialogue should be continued in order to meet the challenge arising from the globalisation of the economy.

NOTES

1. A PTO in this paper is an operator and provider of public switched voice telephone services on local, long-distance and international levels. Providers of services other than this service, such as sole providers of value added and/or mobile services, are excluded.
2. "Ensuring Global Communications", *Networking Management Europe*, pp. 47-48, March/April 1992.
3. Booz, Allen & Hamilton (1991), *International Diversification Strategies for Telecommunication Service Companies*, UK.
4. The original shareholders (in this case Ameritech and Bell Atlantic) were required to reduce their aggregate ownership of TCNZ's ordinary shares to not more than 49 per cent of total shares by 12 September 1993. This reduction in ownership of shares must include at least NZ\$ 500 million worth of shares made available by public offering on the New Zealand market (Ministry of Commerce, New Zealand and *Prospectus* of TCNZ).
5. AT&T (1992), *Annual Report, Strategies for Growth*, New York City.
6. "NCR, with its substantial presence in more than 130 countries, is also helping us to accelerate the globalisation of AT&T". (Quoted from *1991 Annual Report* of AT&T.)
7. OTC (1992), *Annual Report*, p. 88, Sydney.
8. Royal PTT Nederland (1993), *Annual Report, 1992*, p. 92, Groningen.
9. For example, it is reported that Televerket (Swedish PTO) has obtained an international simple resale licence from the UK authorities to provide voice telephony services from the United Kingdom and Sweden, and that Televerket plans to do the same with the United States ("Tariffs Undermined", *Communications Week International*, p.1, 14 December 1992, and "World Telecom News, 1 May 1993, Japan). The same application is under consideration between the United Kingdom and the United States (as of April 1993).
10. This point was discussed in Staple, G.C. (1992), "Winning the Global Telecoms Markets: The Old Service Paradigm and the Next One", *TeleGeography 1992*, p. 132, International Institute of Communications, London.
11. Such carriers are known as "Light carriers" as opposed to "Heavy carriers" which own facilities and provide services. See Staple G.C. (1992), *op. cit.*

12. Its partnering PTOs are yet to be obtained as of April 1993.
13. "Chrysler Maps out Traffic Route", *Communications Week International*, p. 25, 14 December 1992.
14. Philips Communications and Processing Services International, a Philip's VAN unit.
15. From interviews of major PTOs and users.
16. Observations in this section are mainly based on results of empirical information obtained from interviews, industrial journals and other related documentation.
17. "Unisource... will service the business customers on a European scale and with global reach" (Press release by Unisource of 15 January 1992).
18. Cable and Wireless holds 39.9 per cent of TELE 2, the second PTO in Sweden which started international voice telephone service in March 1993, in competition with the existing PTO, Swedish Telecom. TELE 2 also plans to provide local telephony services in Stockholm.
19. BT acquired in 1989 "Tymnet" and uses its network facilities as a platform for its MDN in the United States.
20. Such types of competition are currently increasing between major PTOs in the Asian-Pacific region and in Europe.
21. The primary sources of information for this section were interviews with major corporate users, users' associations, documentation provided by users, and other professional sources.
22. It is felt by many users that the quality of international circuits is not as good as that of domestic market circuits.
23. Many Type II carriers (those TOs that provide services by leasing circuits from Type I carriers) derive from the telecommunication service branch of large users of corporate network systems.
24. According to estimates made by OTC (Australia), "the corporate network hub market in (the Asia Pacific) region is worth around A\$ 480 million in terms of private network and IDD (international direct dialing) revenue, and is growing at a rate of more than 20 per cent each year" (*OTC Annual Report, 1991*, OTC, Australia).
25. OECD (1993), *Communications Outlook 1993*, Paris.
26. Calculated based on the data in International Institute of Communications (1992), *TeleGeography 1992*, London.
27. Uhlig, R.P. and J. Bartosewicz (1992), "The Evolution of Global; Networks and Intelligent Networking", paper presented at the Eleventh International Conference on Computer Communication.

28. A brand name for FT's public digital packet switching service.
29. In 1992 the Commerce Commission of New Zealand undertook a review of the development of competition in the telecommunication sector of the country, and the extent to which the existing regulatory framework assists this development. Although some insufficiency in the current regulatory structure was found which impeded the stimulation of competition, government decision for necessary action has yet to be taken. (For details of the inquiry, refer to Commerce Commission (1992), *Telecommunications Industry Inquiry Report*", pp. 96, Wellington.)
30. Swedish Telecom will be corporatised as of 1 July 1993, but its privatisation is yet to be discussed.
31. It should be noted that the information contained in this table involves a degree of simplification. For more complete information, please refer to the Annex of OECD (1993), *Communications Outlook 1993*, pp. 160, Paris.
32. Foreign ownership is allowed for STET, SIP and Italcable, but not for IRITEL.
33. This problem often arises at the privatisation of PTOs in small and medium-sized economies. As the size of a PTO is considerably larger than other ordinary incorporated firms, the value of its shares is very large.
34. The Information Memorandum advised bidders to achieve a majority of Australian ownership (51 per cent) within five years of sale. As Optus Communications satisfied this requirement from the outset, they are now required to maintain this level of Australian ownership. The Second Carrier Selection Team decided in 1991 that the Foreign Acquisitions and Take-overs Act would be applied to this control of foreign ownership of Optus Communications, rather than using a condition of contract of sale or a general carrier licence condition.
35. The Australian Government has adopted a criteria of majority Australian ownership (50.1 per cent) in the selection of the third mobile licensee (Section 7(1) of the Telecommunications (Allocation-Public Mobile Licences) Determination No. 1 of 1992). This request is stated in the licence conditions and is to be achieved within ten years of commencing operations.
36. Bill C-62, an Act with respect to telecommunications.
37. This regulation (L-33 Section 11 of the Law concerning the regulation of telecommunications of 30 December 1991) is not applicable to the member States of the European Communities or to those countries that have an agreement with France that includes a clause on reciprocity applicable to the telecommunication sector.
38. Refer to Table 4.2 above for details.
39. Refer to Table 4.3 below for details.
40. Since October 1991, BT has had one government-appointed Director.

41. A simple notification to the Ministry of Finance is required for investments of less than FF 50 million in a firm with a capital of less than FF 500 million. For investments exceeding this amount, prior authorisation by the Ministry is required (issued in the *Journal Officiel* on 16 January 1990).
42. Information as of May 1993.
43. In October 1992, NTT announced its investment in the PSTN in all areas of Thailand except Bangkok. It is the first FDI for the company in telecommunication operations. Prior agreement from MPT was obtained.
44. Telecommunications Council (1991), *Recommendation on 'Control Over Foreign Investments in NTT and KDD'*, original in Japanese, Tokyo.
45. Letter from Ambassador Bradley Holmes, US co-ordinator and director of the Bureau of International Communications and Information Policy, Department of State, to US Assistant Attorney General James Rill, reported in *Telecommunications Weekly*, "State Department Supports RHCs On Foreign Investment Waiver", 23 March 1992.
46. *FCC Week*, "Carriers Vie For Strategic Relations South Of The Border", 13 April 1992.
47. The cost of a three minute daytime call from Japan to the United States fell by 56 per cent between 1985 (the year of introduction of competition) and 1990.
48. For details of the argument, refer to International Chamber of Commerce (ICC)(1990a), *Recommended Principles to Ensure Non Discrimination by TOs in the Provision of Reserved Services and Infrastructures* (Position Paper No. 14); ICC (1990b), *Establishment of Regulatory Approaches to Ensure that TOs with Special or Exclusive Rights do not Improperly Cross-subsidise their Competitive Activities* (Position Paper No. 15); and ICC (1990c), *Separation of Operational Functions of Telecommunications Organisations from Functions of Regulatory Bodies* (Position Paper No. 16).
49. This point was, in fact, argued by the representative of the PTOs of the United States in the debate on competition in telecommunications under the North American Free Trade Area (NAFTA). Refer to M. N. Di Tosto (1992), "Presentation on U.S. Business Objectives in the North American Free Trade Area", draft for speech, US Council for International Business.
50. OECD (1990), *Trade in Information, Computer and Communication Services*, Paris.
51. There are three services that are the subject of separate Sectorial Annexes to which a more comprehensive set of rules is applied. These are: architecture, tourism, and computer services and telecommunication-network-based services [Janisch, H.N. (1989), "Canadian Telecommunications in a Free Trade Era", *The Columbia Journal of World Business*, Vol. XXXIV, No. 1].
52. North American Trade Agreement, text dated 7 October 1992.

53. According to estimates made by the Office of the United States Trade Representative (USTR), US investment in Mexico in value-added services will become more than US\$100 million by 1995, from US\$22 million in 1991. The export of services from the United States to Mexico (US\$27 million in 1990) is also expected to increase (USTR, August 1992).
54. Section 1 in Article 1 302 reads: "Each Party shall ensure that persons of another Party have access to and use of any public telecommunications transport networks or service, including private leased circuits, offered in its territory or across its borders for the conduct of their business, on reasonable and non-discriminatory terms and conditions, ...".