
Toward Efficient and Sustainable Development of Transportation Systems in Northeast Asia

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INTRODUCTION

The interest in regional cooperation and integration is a worldwide phenomenon, inspired by the success of experiences in both Europe and North America. It also reflects a growing appreciation of the benefits to be derived from regional cooperation and integration in meeting the challenges posed by increasingly competitive world markets.

Compared with any other region in the world, including Southeast Asia and South America, Northeast Asian countries today are the most weakly linked, even in economic ties, owing to decades-long ideological and political confrontations. For example, although Northeast Asian countries played a leading role individually in both the Uruguay Round and the World Trade Organization (WTO) negotiations on maritime transport services, it should be noted that they made no concerted effort toward a single or harmonized voice throughout the negotiations. By contrast, the Association of South-East Asian Nations (ASEAN) has taken a common position in negotiations with countries or institutions outside the ASEAN region.

Recent political, economic, and social developments in Northeast Asia have highlighted the need to intensify regional cooperation and integration. There have been numerous conferences and seminars on this issue, including this meeting of the Northeast Asia Economic Forum. Substantial efforts have been made in search of new ways of building an economic community in Northeast Asia—one that can fully achieve its potential as a major pole of the world economy. Regional cooperation or integration has been advocated as a solution for tackling multidimensional problems, not limited to the expansion of intra-regional trade. However, national governments have paid virtually no attention to regional integration matters until now.

Conceptual clarification may be useful before discussing the regional approach to increasing linkages in many respects among countries in Northeast Asia. Regional integration and regional cooperation have in common the involvement of neighboring countries in collaborative ventures, with common interests in a given issue. Regional cooperation implies that this is organized on an ad hoc and temporary basis through contractual arrangements of some sort, around projects of mutual interest. However, regional integration involves something more permanent and acceptance of certain obligations, which is

characterized by the establishment of joint institutional mechanisms and a degree of shared sovereignty. Consequently, regional integration is often perceived as a prelude to unification, understood to represent the existence of homogeneous rules and principles governing behavior in a given spatial area. Regional economic integration is more closely related to community-building for a common market, based on a strategic vision or perspective of a common future for the countries concerned.

In Northeast Asia, as in any other region, the regional arrangement to the level of the European Union (EU) may be an ultimate solution in its progress toward regional economic integration. NAFTA may afford an intermediate solution. Although the ASEAN countries have not effectively implemented an integration program, ASEAN seems to possess the institutional framework necessary to move forward on regional integration. However, regional institutional choices should take into account the specifics of the countries and region as well.

Indiscriminate copying of regional economic integration found in EU and elsewhere may be neither feasible nor practical at present in Northeast Asia, in the absence of an integration culture and given the political and ideological differences, historical conflicts, and uncertainty of economic or political gains from strong institutional arrangements in the region. Rather than taking comprehensive action involving all sectors of economic activity, it would be better to initiate regional cooperation in Northeast Asia based on a single issue, a field of activity, or a particular sector, and the contractual nature of cooperative arrangements that are time bound. Although regional cooperation may not necessarily lead to integration, cooperation is often considered to be the instrument or precondition for regional integration.

Most research in the area of Northeast Asian regional cooperation has been done at a sectoral level of analysis, on the agricultural, industrial, financial, energy, transportation, and telecommunications sectors. The focus in these sectoral approaches is the sustainable development of the respective sector through the harmonization and coordination of sectoral policies and action plans. Another approach in regional cooperation would be project-based perspectives. Limited to the identification and implementation of specific projects, it is the easiest and least burdensome approach for participating countries to adopt, although no significant effort to harmonize sectoral economic policies is involved.

No one disagrees that an efficient transport system plays a critical role in the economic and social development of any region. In response to the rapid increase in intraregional trade and movement of people, due to growing interactions in Northeast Asia, it is essential to have a reliable and efficient transport system, if the region is to reap the maximum benefits of the changing global environment. This paper is another addition to transport sector studies for Northeast Asia.

These studies, without exception, have taken an EU-type of grand planning approach. This paper differs from previous studies, in that its approach is two dimensional in search of a regionwide transport system characterized by interoperability, interconnectivity, and intermodality, which can pave the way to sustainable mobility of people and goods in this region. These dimensions are the development of a functional and efficient transport network, and the development of a free and competitive transport market. A comprehensive approach for examining the region's transport system, in terms not only of "software" but also of "hardware," has never been taken in this field.

CURRENT STATUS AND FUTURE PROSPECTS FOR THE TRANSPORT MARKET IN NORTHEAST ASIA

Until the late 1980s, in the absence of formal diplomatic relationships, many countries in Northeast Asia had either no regularly scheduled transport service or very limited service with each other. In response to increasing movement of people and goods during the 1990s, regularly scheduled transport services between Northeast Asian countries expanded dramatically, with the exception of services to North Korea. Countries in Northeast Asia differ greatly in the extent of their transport networks and in levels of transport market liberalization. However, the existing transport system in Northeast Asia is unable to accommodate the growing demands placed on it by all transport modes, because of a high degree of fragmentation and a great deal of variance in every aspect of the system. In this section, I provide a comprehensive analysis of the strengths and weaknesses of the present transport system in the region, as well as the opportunities and risks associated with environmental changes surrounding the region's transport system.

Maritime Transport

Growth in Maritime Transport Traffic

During the period from 1985 to 1996, the volume of container cargo in the world increased from 56 million twenty-foot equivalent units (TEU) to 147 million TEU, registering an annual growth rate of 9.2%. The annual growth rate in Northeast Asian ports was 12.6%. Furthermore, if we exclude Japan, the annual growth rate in the region was 17.1%.

Though some observers predict a slowdown in the rate of container traffic growth in the future, it is widely accepted that the growth rates of world container traffic during the coming decade will be very similar to those of the past decade. Particularly, owing to sustained economic growth and trade liberalization, Northeast Asia is expected to grow somewhat faster than it did in the 1990s, which should be translated into increased container flows. In a

recently published study on Asian container trade, it was forecast that, despite the Asian financial crisis, Asian container volume will continue to exceed the world average by a considerable margin. Consequently, Northeast Asia's share of containerized exports is expected to rise from 32% of the world total in 1996, to 36% in 2006; its share of containerized imports is expected to rise by a similar rate, from 30% to 34%.

Constraints in Container Ports

In 1980, Northeast Asian container ports handled only 7 million TEU. By 1990, this had grown to 22 million, and by 1997, 48 million (see Table 1). Northeast Asian ports now account for 27% of world container moves, compared with 20% back in 1980. Reflecting this growth, three of the world's five largest container ports and 8 of the world's top 20 container ports are located in Northeast Asia.

Table 1. Container handling in Northeast Asian ports, 1980–97 (thousand TEU)

Economy	1980	1985	1990	1995	1997
Japan	3,417	5,517	7,956	10,604	12,629
Korea	672	1,246	2,348	4,503	5,234
Russian Far East	114	130	307	104	111
Hong Kong	1,465	2,152	5,101	12,550	14,500
Taiwan	1,644	3,075	5,451	7,849	8,263
China	54	446	1,204	4,682	7,973
Total	7,366	12,566	22,367	40,292	48,710

Source: Korea Maritime Institute.

Note: 1 TEU (twenty-foot equivalent unit) = container size equal to 20 x 8 x 8 feet.

However, rapid growth of container traffic in Northeast Asia has led many ports in the region to demand substantial increases in handling capacity, which resulted in a serious capacity constraint, in spite of their continuous expansion. With the exception of Japan, every country in the region lacks adequate port capacity. Congestion problems are particularly conspicuous at many of China's ports and at a couple of Korean ports as well. Congestion problems have also arisen in terms of land access to ports, owing to insufficient infrastructure, including rail and road access, and rail and road system capacity. Although lack of adequate road infrastructure is a major constraint on the cargo flow through the ports in China, many other countries face the same problem. Congestion problems have also arisen from inefficient operational and regulatory procedures.

Inefficient administration and customs procedures are major contributing factors for delays in the clearance of cargo through most of the region's ports. Rigid government control over the operations of ports and inflexible labor

practices at ports are aggravating the situation. Consequently, aside from new investment in infrastructure, more efficient utilization of existing port capacity by resolving these problems should be given high priority, as a means of reducing port congestion.

Maritime Transport System

Over the past few years, major global shipping companies have focused their efforts on creating and strengthening global services networks to attract more traffic in increasingly competitive international markets. Major carriers in Northeast Asia are also developing global services networks covering the entire continental market, and expanding their market shares by creating multiple hub networks and acquiring majority or minority shares in feeder carriers. Northeast Asian container lines lead the world shipping scene, reflecting the fact that the Northeast Asian shipping market is the largest in the world, far surpassing Europe's share of global shipping. Five Northeast Asian container lines are ranked in the global top 10, and 10 are ranked in the top 20.

The recent noticeable development in the Asian shipping system is that the emergence of mammoth alliances has enabled the number of service routes to increase, which developed a blend of (1) services that call only at main hub ports and (2) services that call at second-tier hub ports as well. This has increased the importance of second-tier hub ports, which could lead present hub ports to play a somewhat less prominent role than so-called "hub port economics" expected. With this dispersed tendency, container liners' strategies will rely more on the use of multiple, overlapping service strings and less on a hub-and-spoke system through the major regional transshipment nodes.

The structural changes that are under way in maritime transport may have a significant impact on the current maritime transport system in Northeast Asia. Although most interregional traffic moves through Japan's Pacific-hub ports at present, the future looks bright for a new alternative route to develop. That is, there is a good possibility that the route passing through the Tsugaru Strait and making direct calls at ports around the Yellow Sea and Japan Sea will be established as a trans-Northeast Asia "backbone" route, owing to the continuing increase of container volume and the rapid rise in the number of interregional services.

Maritime transport within the Northeast Asian region is, however, still far from being free and efficient. A few of the region's countries still impose strict regulations and intervene in the market to protect their national carriers. Foreign vessels are often prohibited from entering certain routes, and their access to local cargos are blocked or discriminated against. Hong Kong, Taiwan, and the Republic of Korea have responded actively to the trends toward liberalization

and globalization in the maritime transport sector, while Japan and China continue to maintain rigid restrictions on this sector.

A range of restrictions—from limits on new entry and pricing, to limits on what carriers can and cannot do on the docks—impair competition at Japanese ports. The prior consultation system, restrictive government stevedoring licensing requirements, and Sunday work restrictions are practices that have burdened foreign carriers for years. These restrictions hinder access to Japanese ports for foreign carriers, and have resulted in threats by the U.S. Federal Maritime Commission to close U.S. harbors to Japanese container vessels.

China also has been noted for barriers that limit foreign carriers' access to ports, limit the opening of branch offices, and restrict inland transport operations within China. A very limited number foreign shipping companies have licenses to engage in basic shipping activities in China. Foreign shipping companies operating in China claim that they are subjected to a number of restrictions imposed by undue governmental regulations in the Chinese shipping market. As stated in *The Journal of Commerce* (27 October 1998): "These regulations both restrict operations of foreign lines and create a complex and uncertain environment in which to conduct commercial activity."

Furthermore, in most cases, shipping routes within the Northeast Asian region are regulated by bilateral agreements between the countries concerned. This results in subdivided and, therefore, inefficient and small markets. Consequently, freight rates along intraregional routes are significantly higher than those of interregional routes.

Air Transport

Growth in Air Transport Traffic

Air passenger traffic grew at an average annual rate of 6.7% from 1985 to 1997 and more than doubled during this period. Meanwhile, the traffic within, to, and from Asia was growing at an average annual rate of 13.8% and increased almost fivefold during the same period. Consequently, Asia accounted for 28.7% of the world total in 1997, compared with 13.3% in 1985. The growth in air cargo has also shown a similar trend. As a result, Asia's share of air cargo rose from 25.6% of the world total in 1985 to 46.2% in 1997.

The air transport market grew faster in Northeast Asia than in any other region in the world during the past two decades, both in terms of passengers and cargo, so that Northeast Asia now accounts for 11.5% of the global market. The major reasons for the region's high rate of growth in air transport over the past two decades are: the strong economic growth of Northeast Asia (and the resulting increases in personal income), the relaxing of overseas travel restrictions, and air transport reform and liberalization. At present, three Northeast Asian airports

are ranked in the global top 20 in terms of passenger traffic, and four in terms of cargo traffic.

Because of the financial crisis that has afflicted all the countries of the region, it is expected that over the next few years the Northeast Asian market will achieve a slower rate of growth (4.5%) than world average (5.5%). Total scheduled intraregional passenger traffic to and from China (including Hong Kong), Japan, and Korea is forecast to grow from 101 million passengers in 1997 to 127 million in 2002 (see Table 2). For the two decades following 2002, however, it is forecast that the strongest growth will be in Northeast Asia again.

Table 2. Intra-Northeast Asian international air traffic, 1997 and 2002

Economy	1997		2002		Annual Growth Rate 1998–2002 (%)
	Passengers (thousands)	Share (%)	Passengers (thousands)	Share (%)	
China	8,723	69.0	13,383	69.6	8.9
Hong Kong	13,889	50.2	18,219	51.8	5.6
Japan	15,224	33.5	18,520	33.4	4.0
Korea	8,366	53.8	10,355	59.2	4.4

Source: Korea Transport Institute.

As the region's strong economic growth is expected to continue, so too is its importance in the world's air transport market. Demand for airline services in Korea, Japan, Taiwan, and especially China is expected to increase so rapidly that the air transport market in this region is likely to approach the size of the U.S. transport market by 2010. In particular, Boeing forecast that China will be the region's dominant leader in the air transport market by the year 2007, as Japan has been in the past.

As Table 2 shows, international passenger traffic in Northeast Asia comes primarily from the intraregional market and represents more than 50% of the market of each country, with the exception of Japan.

Constraints in Airports and Airways

Air traffic in Northeast Asia has increased rapidly, in terms of both passengers and cargo. In spite of substantial investments in airport infrastructure, severe congestion problems have been experienced in both airport capacity and air traffic control systems at the major hub airports in the region. In particular, Beijing, Tokyo (Narita), Seoul (Kimpo), and Taipei (CKS) are currently experiencing serious capacity shortages such as runway slots, runway capacity, and terminal capacity. As is the case for seaports in the region, problems in land

access to airports contribute significantly to the road congestion at major airports such as Seoul and Tokyo.

Although new airports are being constructed and the capacities of existing airports are being expanded, there is still concern that the total capacity may not be sufficient to meet the ever-increasing demand for air transport, especially at the region's major international hubs such as Tokyo, Beijing, Shanghai, and Hong Kong. The reasons may be the long lead time to plan and complete a new airport or to expand an existing one. The causes include land acquisition, arranging funding, obtaining community support for development, and dealing with political issues. For example, Hong Kong's Chek Lap Kok Airport took 25 years from the initial site selection in 1973 to completion in 1998. Japan's Kansai Airport took 25 years from the beginning of environmental review and completion of its first phase. Therefore, capacity expansion has to be planned far in advance of the actual demand, if it is to be capable of sustaining the forecast growth in air traffic.

Air space congestion has also been identified as a major issue of concern to the international carriers and as the most serious threat to the growth of traffic movement in the region. The increasing air traffic leads to congestion in air space and strains the air traffic control system (ATC). According to ICAO, given the high growth forecast of air traffic in the region, the existing communications, navigation, and surveillance (CNS) systems will not be able to provide for flight operations at acceptable safety levels. As Northeast Asia is faced with a highly fragmented airspace network and a very wide variance in the sophistication of its ATC systems, there must be a regional approach to the problem.

Air Transport System

As described previously, the Northeast Asian market is the most important air transport market for many countries in the region. However, the air transport market in Northeast Asia possesses the following typical features: (1) There are significant differences in sizes and capacities among the airlines in different countries. (2) Unlike North America and Europe, the political systems and degrees of economic openness vary widely in Northeast Asia. (3) In particular, military use of air space and airports limits civilian use, thereby restricting foreign-carrier access.

Reflecting these features, Northeast Asia's major airlines have remained relatively small in terms of traffic volume, and their networks are small compared with those of the major U.S. and European carriers. One reason for the small networks is that the business scopes of the region's carriers are severely limited by restrictive bilateral agreements. Unlike the region's maritime industry, in air transport, restrictive bilateral policy has weakened the competitiveness of regional carriers, thus stripping major regional carriers of the opportunity to

become important players in the global air transport industry. In most cases, the network of the region's carriers is concentrated at one airport in the carrier's home country, resulting in operating inefficiency and a limited scope of services. Consequently, average airfares for travel to, from, and within Northeast Asia are relatively higher than those to, from, and within North America. In certain countries, governments apply strict regulations and intervene to protect their national carriers and, consequently, impair a free and efficient transport system. For example, Japan requires all freight data to be rekeyed into its computer system instead of allowing the use of EDI, creating unnecessary delays. The overflight restriction in China and Russia is another example of institutional barriers to the efficient use of airspace, which is currently very limited in the region.

Despite the fact that Northeast Asian countries do not have a liberalized air transport regime, these countries have granted substantial fifth-freedom rights¹ to foreign carriers, particularly to U.S. carriers.² They have also negotiated the possibility of establishing fifth-freedom rights between themselves. As a result, fifth-freedom traffic accounts for a substantial portion of total traffic handled at major Asian airports. For example, Hong Kong and Tokyo together account for a quarter of all fifth-freedom flights within Asia. As mentioned earlier, although Northeast Asia is the fastest growing air transport market in the world, air transport liberalization in the region has been much slower than that of North America and Europe. Current bilateral aviation agreements between Northeast Asian countries have still retained traditional features in which the two governments determine the cities to be serviced, the frequency of flights, the size of planes, and the fares.

Virtually all aspects of flights between Northeast Asian countries—for example Korea and Japan, Korea and Taiwan, Korea and Russia, and Japan and China—are regulated by the two respective governments. Meanwhile, the U.S. carriers that travel to, from, and between these Northeast Asian countries are limited only by the availability of airport landing slots. Although Taiwan and Korea have signed open-skies agreements with the United States, several important countries in Northeast Asia, including Japan, China, and Russia, were severely opposed to the U.S. initiative. In addition, Taiwan and Korea have not granted similar rights to airlines from other Northeast Asian countries.

Land Transport

Road Transport

The role of roads has been neglected in the discussion of Northeast Asia's transport system so far, despite the fact that roads are the dominant mode of transport, and their share in the transport system is expected to continue to grow in each country. With the exception of Japan, the road density (the total length of

roads as a proportion of the total area) in Northeast Asia is far below that of developed countries, and the road densities in the Russian Far East and Mongolia are about one-third of the Northeast Asian average. It is interesting to note that, if we exclude Japan, there is a high correlation (0.99) between road density and population density, but the same does not apply to rail density.

These facts imply two things: (1) road transport will be a very important part of the region's integrated transport network and (2) there are disparities and an imbalance within the region's transport modes. Although it is widely recognized that roads will play a larger role in the future transport network in the region, national governments have no concrete plans to bring this about from a regional transport perspective.

The major problem for road transport is the growing gap between demand and supply, which results in inadequate capacity to meet the demand required by current logistics services. Even more important might be the present physical condition of roads, whose low-quality surfaces impede smooth operation of heavy trucks in the region. In many countries, the ratio of unpaved roads to total road length is very high, and even if the roads are paved, the thin pavement and deterioration of bridge structures are not able to withstand a large volume of heavy vehicles. In addition, poor designs and various other weaknesses make the road systems inefficient to meet the current demand.

To ensure efficient and smooth road traffic, not only for access to ports and airports but also for cross-border networks in the region, certain minimum design standards should be adopted, and bottlenecks at border crossings must be identified and removed. For example, in freight movement by truck between China and Russia, and between China and North Korea, fundamental problems arise owing to the operational and regulatory differences between the countries involved.

Railway Transport

Railways are the main mode of land transportation for freight and passengers in many countries in Northeast Asia. Despite the marked reduction in share over the past three decades, rail transport still makes up a substantial portion in the respective countries' transport systems. With respect to freight transport, railways play a major role in China, Russia, North Korea, and Mongolia and a medium role in South Korea. With respect to passenger traffic, high shares can be found in China, Russia, and North Korea.

Railway transport is nonetheless the weakest link for the integration of the regional transport system. China's total rail length, for example, is only 15% of the total length in the United States, although the land masses of the two countries are similar. The shortage of tracks in China means that, per unit length,

China's railways have to carry twice as much as Japan's and three to four times as much as America's.

Parallel to improving rail capacity in each country, priority should be given to integrating national railway networks to create a trans-Northeast-Asian railway network linking all countries in the region. The major problem in integrating railway networks in the region is the existence of various railroad gauges: standard gauge (1,435 mm), wide gauge (1,520 mm), and some narrow gauge tracks.³ This diversity transloading trains or changing bogies at the border crossings. This process adds a couple of days to a trip and causes additional handling costs. Missing links are also a critical problem. The most significant missing links are those between North and South Korea. The new link between Ulaanbaatar in Mongolia and Yixie in China will provide an alternative route that reduces the number of border crossings and substantial travel distance. Technical compatibility must be secured in terms of the loading gauge, track and bridge strength, braking system, height of couplers, and so on.

In addition, various border-crossing problems must be resolved to facilitate intraregional movements of passengers and cargos. Some examples are complicated customs procedures, multiple inspections, restrictions on the times at which borders may be crossed, insufficient cargo transfer facilities at the border stations, low speed of train operations, comparatively high freight charges, unreliable rail operations and services, and the lack of a cargo-tracking information system.

Regional efforts must be made to overcome these problems. Otherwise the railways will not be able to contribute their full potential to the integration of the transport system in Northeast Asia.

Intermodal Transport

Until recently, political problems have inhibited intraregional trade by sea-land intermodal transport. However, it is clear that the transition from a conventional segmented, marine-based transport system to an intermodal transport system, arising from enhanced logistics requirements in the region, will bring great, visible changes to the character of the transport system in the near future. Already we see signs in the Tumen River economic development area. Previously, ports in the region have served identifiable natural hinterlands, delineated by political borders and inland transport networks, which dictated cargo flows within the respective countries. However, with the enhanced economic cooperation and development of intermodal transport system in the region, shippers everywhere in the region are able to select any port and any route that offers the lowest logistics costs and fastest time. A consequence of these developments will be an increase in the dynamics of competition among intermodal networks at the national and regional levels.

Intermodality, along with interoperability and interconnectivity, is one of the basic requirements of an integrated transport system. Consequently, intermodality lies at the heart of the common transport policy in the EU. Intermodal transport can be best defined as the movement of goods door-to-door using at least two different modes in an integrated manner. As such, intermodality is an indicator of the integration level of the transport system. As the European Commission made clear, the objective of intermodal transport is to develop a framework for the optimal integration of different modes so as to enable the efficient and cost-effective use of the transport system through seamless, customer-oriented door-to-door services while ensuring competition between transport service providers.⁴

To achieve this objective, integration between modes must take place at three levels: (1) infrastructure, (2) operations and services, and (3) regulatory conditions. Since the quality and efficiency of intermodal transport is greatly affected by the weakest and most inefficient link in the chain, the infrastructure of each modal segment in Northeast Asia should be upgraded to fulfill the basic requirements of an integrated transport system. Unfortunately, however, in every country of this region, the transport network has been designed and developed from the national viewpoint, without considering intermodality, interconnectivity, or interoperability from a regionwide, holistic viewpoint. Although transport operators in Northeast Asia compete with each other in respective modal bases, they are not virtual integrated operators who provide door-to-door transport using the most effective combination of modes and services to meet the needs of the users.

Major institutional changes are also required with respect to the structurally complicated array of laws and regulations governing intermodal transport. In this regard, cooperation among countries in the region is required to address many hindrances to intermodal transport in Northeast Asia and to recommend a range of action programs. To improve the efficiency of intermodal transport, high priority should also be given to ensuring uniformity in intermodal liability rules and human resource development.

MODELS FOR REGIONAL COOPERATION IN TRANSPORT SYSTEMS

It is generally acknowledged that regional unions such as the EU and NAFTA and regional cooperation such as ASEAN have succeeded in strengthening their regional industrial bases and improving the competitiveness of their industries. Efficient transport systems have played the key role on the road to regional cooperation and integration, by removing physical, legal, institutional, and technical barriers that hinder the free flow of passenger and cargo traffic across regions. Although the political, economic, and social environments in Northeast

Asia may be substantially different from those of the EU, NAFTA, and ASEAN, their experiences in the process of formulating economic ties and transport systems can serve as a guide to Northeast Asia in its attempts to integrate its transport systems.

European Union

The Development of the European Union

The process of European integration has been under way since 1957, when the Treaty of Rome was signed. The European Community (EC) took a major step with the Single Market initiative, which was adopted in 1987 and took effect in 1992. The purpose of the ambitious plan was to turn a free trade area into a true common market. A common market policy is characterized by (1) abolishment of duties and all obstacles against border crossing movements of people, goods, capital, and information, (2) harmonization of standards for products and services, and unification of the legal settings for the markets to work, (3) removal of all regional and sectoral discrimination in the markets, and (4) harmonization of the fiscal conditions in terms of taxation and subsidization. The continued expansion of the EC into the European Union (EU), in terms of scope, depth, and geographical area, is a truly historic achievement. This success was demonstrative, and undoubtedly had the effect of encouraging emulation in other parts of the world, in the form of regional initiatives.

Trans-European Network

The 1992 European initiative on transport was an attempt to abolish barriers that reduce the competitiveness of European industries. It served to eliminate intra-European customs checks, allowing transportation and logistics companies to reap the advantages of operating on a pan-European basis by permitting the free flow of capital, and thus creating a single market of 320 million people. It was expected that removing barriers would allow market forces to work most effectively and allow transport services to raise their efficiency. The results of the 1992 initiative have been conspicuous in every aspect of the transport system. They have enabled the European transport network to operate more efficiently and to reduce the cost of logistics and production in Europe.

In the process of continuing European integration, traffic flows of both cargo and people across Europe have been growing. This has resulted in increased demand for a transport system with greater capacity and efficiency. In the past, EU transport policy mainly focused on the creation of a common transport market. In the European integration process, the traditional system of heterogeneous regulations in the European transport market has been substituted by a liberal, market-oriented system. Liberalization has favored the transport modes that could adjust most flexibly, such that the market structures have changed

substantially. However, it became evident with extended spatial integration of the region that regulatory instruments for market liberalization and harmonization alone were not enough to create a thoroughly efficient system for the transport of cargo and passengers. Smooth operation of the intraregional market can be guaranteed only by means of a functional and efficient infrastructure network development through the concept of a trans-European network. Consequently, in the Maastricht Treaty of 1 November 1993, a clear legal basis for the creation and expansion of a trans-European transport network was established to promote the connection of, and access to, existing national networks.

One of the main goals of the Common Transport Policy is to overcome the problems created by the national focus that has characterized the development of Europe's transport systems. As a result, the absence of interconnections between national networks, lack of interoperability between modes, missing links, and bottlenecks have constrained the development of cross-border, cross-mode transport. Differences in the geographic and economic histories of member states have also resulted in considerable divergence in the quality and availability of infrastructure. Additionally, in the past, emphasis has often been placed on the development of particular modal networks rather than on the relationships between them.

The establishment and development of trans-European transport networks, within a framework of open and competitive markets, will be attained by promoting the interconnectivity and interoperability of the EU's national networks. The Trans-European Transport Network (TEN) program is designed to promote not merely the general improvement of infrastructure, but rather, the integration of the entire intermodal network—deemed vital for competitiveness, growth, and efficiency in European industry. In pursuing this line, the TEN policy also takes into account the need to link island, landlocked, and peripheral areas with the central EU regions.

Like the general approach of the Common Transport Policy, the development of the trans-European transport network is geared toward sustainable mobility within the internal market as well as strengthening economic and social cohesion. "Joint Guidelines for the Creation of a Trans-European Transport Network" were passed by the European Parliament in 1996. These guidelines formed the framework of operations for the expansion and creation of transport infrastructure in the EU until the year 2010. They are based on the principle of integrating the different transport modes into an intermodal transport network. The linkage and interoperability of all transport modes are intended to achieve synergy effects that will lead to greater efficiency in the whole transport system, higher levels of traffic safety, and increased compatibility with the environment.

Projects in the guidelines are financed by member states with EU financial aid from the European Investment Bank (EIB), the European Investment Fund

(EIF), and the Cohesion and Structural Funds. Since a lack of public funding has hindered the development of most projects—even those given priority status—the Commission is increasingly looking to public-private partnerships (PPPs) as the way forward for financing TEN projects.

A “High Level Group,” which was established to look at how PPPs can help secure better value for money, reported that political commitment to project implementation should be firmer, that existing financial instruments should be used more effectively, and that new financial instruments should be created, particularly to provide the equity of quasi-equity finance. As a result, consideration is being given to the creation of risk-capital funds, partly financed from the Community budget, as a means of encouraging private sector institutions such as pension funds to invest in TEN projects in a bid to boost the long-term funding of regional infrastructure projects.

NAFTA and North American Transport System

The Development of the North American Free Trade Agreement

Although the United States had been against to Europe’s move toward regional trading arrangements, by emphasizing multilateral liberalization through GATT, it changed its position in the late 1980s and took initiatives for the creation of NAFTA. Before NAFTA went into effect in January 1994, a Free Trade Agreement (FTA) was concluded in 1989 between Canada and the United States. NAFTA is an agreement intended to reduce trade barriers between countries in North America, not to create a single market in the way that has been done in the European Union.

Furthermore, it should be noted that, member countries in NAFTA do not, as the FTA in the initials would imply, literally eliminate all barriers. NAFTA widened the scope of the agreement to include certain (but not all) services and strengthened dispute settlement mechanisms. Although NAFTA reduces tariffs and certain nontariff barriers, it does not seek to harmonize standards affecting trade or to establish joint processes by which harmonization may be discussed. National standards or regulations continue to apply, so that border clearance still remains a problem. Nor have the countries had to agree to increase members’ access in all sectors of the economy.

While it is difficult to isolate the effects of NAFTA, there is no doubt that the reduction of trade barriers has contributed to growth. According to U.S. government statistics, from 1993 to 1997, trade between the United States and Canada increased by more than 50%, between the United States and Mexico by more than 90%, and between Canada and Mexico by more than 80%.

The Significance of NAFTA for Transportation

Unlike in the EU, the explicit objective of the North American transport system has been the efficiency of the system rather than the integration of the system, including transport network and transport market. The efficiency of the system places greater reliance on the working of market forces, which uses resources effectively to meet the needs of users.

It was conceived that NAFTA would create a new North American market, strengthen the economy of each country, and encourage the development of a seamless North American transportation system that would reduce the logistical cost of locally made goods even further. Has the formation of NAFTA helped regional companies to take advantage of reduced volumes of inventory in transit, due to shorter distances, reduced transportation costs (especially for high-value goods), and reduced overall costs of product acquisition, including administrative costs? Although, between Canada and the United States, more significance for its effects are on trade than on transportation services directly. The gradual opening of the regional transport sector to foreign investment and to direct entry has created some opportunities for carriers. Some transport firms have benefited from reductions not only in a very specific tariff but also some of the nontariff barriers such as border clearance delays.

In all three NAFTA countries, the past five years since implementation have brought a substantial change to logistics and transportation services. NAFTA has been successful in fulfilling its promise in the following areas: promoting fair competition and equal treatment between competitors in all three countries; developing legal frameworks that protect cross-border investments; creating procedures for implementing and administering NAFTA and for resolving related disputes; and establishing means for continuing trilateral cooperation in areas covered by NAFTA.

However, in some areas affecting freight transportation, the progress has been less than expected. Eliminating barriers to cross-border trade in goods and services continues to be slow, owing to inefficient border crossing procedures and other restrictive measures that hinder trade liberalization. Cross-border investments also have not been fully liberalized to take advantage of new opportunities. The push to harmonize liability regimes between the three countries has been less successful because of wide differences between standard liability in each country. In addition, the full implementation of the transport provisions has failed, owing to the exclusion of services such as air and maritime transport, which result in higher transport costs than might be the case.

In spite of this uneven progress in facilitating movement of traffic flows of both cargo and people, NAFTA has facilitated trade and growth of the economies overall, thanks to the reductions of barriers, and has opened new opportunities for transport service providers.

ASEAN Transport System

The Development of ASEAN

ASEAN countries are regarded as a major grouping in world trade negotiations, both by international institutions such as the GATT, WTO, and UNCTAD, and by major trading countries such as the United States, EU members, and Japan. Although the primary motive for the formation of ASEAN was political considerations, its focus has shifted toward regional economic concerns. The economic rationale for the establishment of ASEAN lies in the long-term goal of setting up a free trade area, or common market in Southeast Asia. The basis of the economic rationale for ASEAN was the recommendations of the United Nations, which in their 1972 report urged the establishment of preferential trading arrangements (PTA) as the key to industrial growth and economic development. At that time, the success of the European Economic Community (EEC) provided a model for ASEAN. In 1976, ASEAN signed the agreement on the PTA to increase intraregional trade through closer regional cooperation.

In 1994, the ASEAN ministers agreed to create an ASEAN Free Trade Area (AFTA) with the date set at 2003, which may eventually become a common market. This decision was in part a response to the slow progress of trade liberalization under the current limited PTA, which had only a marginal impact on increasing intra-ASEAN trade, and in part an aspiration toward the successful formation of trading blocs both in the EU and in NAFTA. Although the convergence of national interests was often absent in many matters of regional economic cooperation, ASEAN countries have shown a greater degree of convergence of national interests and have taken a common position in negotiations with countries outside the ASEAN region.⁵ This also gave member countries a stronger voice in international trade institutions such as GATT, WTO, and UNCTAD.

The highest decision-making body of ASEAN is the annual Foreign Ministers Meeting (AFMM), which is responsible for all aspects of intra-ASEAN cooperation. However, since the Bali summit of 1976, an annual ASEAN Economic Ministers Meeting (AEMM) was instituted. This is the highest decision-making body on economic matters, particularly those relating to regional cooperation. The AEMM is responsible for the formulation of recommendations on ASEAN economic cooperation and for monitoring and reviewing previously agreed projects on economic cooperation. Meanwhile, the AFMM is concerned with cooperation in political, diplomatic, and cultural matters. The AEMM is aided in its tasks by a Senior Economic Officials Meeting. Other ASEAN ministers also meet to discuss matters of common interest in the sphere of responsibility, which include education, labor, health, transportation, and so forth.

Cooperation in the Transport Sector

In addition to cooperation in trade and industry, ASEAN countries have sought to forge closer cooperation and have set up numerous committees in many other areas of economic activity, in order to explore the possibilities for closer cooperation between member states. However, in many cases, these activities have been confined to opening of lines of communication, and providing a forum for discussion and consultation. In other cases, specific measures have been agreed upon, for the mutual benefits of member countries.

Regional cooperation in transport and communications is one of these major spheres of economic activity, as are finance, banking, and tourism. Regional cooperation in transport and communications is the province of the ASEAN Committee on Transport and Communications (COTAC), which has several specialized subcommittees. After a number of years of deliberation, COTAC published its first *Integrated Work Program in Transport and Communications, 1982-1986 (IWPTC)*. This included 59 projects, most of which were in the maritime transport sector. Many of these were in the form of technical reports or data-gathering exercises, rather than concrete projects designed to strengthen regional cooperation in ASEAN. Funding for these projects was usually sought from international agencies, whereas implementation was by respective member governments. At the end of 1986, only 8 out of the 59 projects in the IWPTC had been completed. Many were withdrawn or deferred and included in the next IWPTC for 1987-1991. Again, only 20 projects out of 90 were completed by the end of this period. However, completed projects themselves do not necessarily mean that some aspect of regional cooperation in the sector has been realized. Rather, in most cases, completion of projects meant that some technical study or data gathering exercise had been completed by a group of experts.

The lack of concrete results in regional cooperation in this sector is due to the usual factors that plague attempts at regional cooperation in other areas. That is, national rather than regional interests dominate the deliberations of COTAC, which leads to time-consuming delays in the formulation and approval of regional projects.

The ASEAN Transport Ministers stipulated that ASEAN cooperation in transportation would have the following four main objectives:

- establishment and development of a harmonized and integrated regional transport system
- promotion of interconnectivity and interoperability of national networks and access thereto with other regional and global transport networks
- enhancing cooperation to contribute to the achievement of the objectives of AFTA

- establishment of a mechanism to coordinate and supervise cooperation projects and activities in the transport sector.

To achieve these objectives, seven programs are placed in order of priority:

- development of intermodal transport and trade facilitation
- development of ASEAN interconnectivity in telecommunication for trade and business communication, and to enhance land, sea, and air transport
- harmonization of road transport laws, rules, and regulations in ASEAN
- improvement of air space management in ASEAN
- human resources development in transport and communications
- safety and maritime transport and prevention of pollution from ships
- development of a competitive air services policy, which may be a gradual step toward an open-sky policy in ASEAN.

The programs principally focus on two regimes: regional cooperation to improve the efficiency of transport and communications, and externalities such as safety and pollution as well as competition to warrant cooperative action.

ELEMENTS OF COOPERATION IN REGIONAL TRANSPORT SYSTEMS

An analysis of the foregoing discussion reveals that common efforts should be made among the countries in Northeast Asia to resolve inefficiencies resulting from physical, legal, institutional, and technical barriers that constrain the integration and liberalization of regional transport system. Although a wide range of issues could be dealt with in the context of integration of the transport system, the elements for close cooperation at the current stage could be identified in the following six key areas.

International Conventions and Agreements

A modern and efficient regional transport system can be established through the introduction of trade and transport facilitation measures that seek to systematically rationalize legal and institutional procedures, as well as information flows and documentation related to trade and transport in the region. Harmonized transport facilitation measures at the national and international levels are a prerequisite for enhancing international trade and transport of international importance. Therefore, international coordination and cooperation in the field of transport facilitation could contribute effectively to the development of international trade and transport in the region. Governments and business entities in the region will benefit greatly from the implementation of such facilitation measures, as they will serve to reduce large divergences between national facilitation measures existing in the region.

In this context, many studies for cooperation in Northeast Asia have proposed ideas to set up a regional committee or institutional body that would be

responsible for coordinating activities with respect to detailed schedules of implementation, and the scope and methodology for the establishment of a fully coordinated program in investment, planning, and development of infrastructure. They may serve as a catalyst for cooperation, or as a vehicle to promote coordination for the sustainable development of an integrated regional transport system. In order to achieve the objective, however, it is advisable to take gradual steps. The first phase of the approach may be the full utilization of existing, well-functioning institutions or coordinating mechanisms in the region. Effective coordination and cooperation through these international economic regimes will lay a foundation for the future development of an institutional framework for regional integration of Northeast Asia's transport network and transport market.

A large number of international agreements and conventions already exist in the field of transport facilitation, to which countries in the region may need to accede or whose provisions could be used as an example for similar regional agreements and conventions. It is also important for governments of the region to review the national status of applicable international transport conventions, since they have ratified or adhered to some of them without having taken the necessary steps to implement them at the national level. The review should cover all modes and interfaces that are international in nature.

Therefore it is recommended that governments in the region revise and update national laws and regulations, and review the application of international transport conventions or agreements. Particular mention should be made that national laws regarding transport modes and operators must be reviewed to ensure that they are in line with modern trade and transport practices. Such updated laws should be implemented or reinforced through the appropriate regulations. In some cases, new laws should be passed.

Asian Land Transport Infrastructure Development Project

The integrated project on Asian land transport infrastructure development (ALTID)—comprising subprojects on the Asian Highway, Trans-Asian Railway and land transport facilitation measures—should constitute a priority in the future action programs in the region's transport system. The ALTID project is aimed at improving and expanding transport linkage within Asia, as well as with the European continent, in response to increasing demands on the existing transport infrastructure. Consequently, national leaders gathered at the first Asia-Europe Meeting (ASEM) at Bangkok in March 1996 and expressed strong support for the ALTID project. A guiding principle of the ALTID project is that the development of transport network is to utilize, wherever possible, the existing facilities in the links, requiring the construction of only the “missing links” in the network. “Unhindered access” for all participating countries is also an important principle.

To implement the ALTID project at the earliest possible date, each country in the region should lend full support and cooperation to the ALTID project. In this regard, ways and means should be sought for constructing the missing links, and of upgrading and/or extending existing links, as well as constructing new links which have been identified as part of the Asian Highway and the Trans-Asian Railway (TAR) networks. To coordinate the implementation of the ALTID project effectively with the rest of Asian subregion and Europe, the eventual compatibility of standards and requirements of land transport networks of international importance in Asia and Europe should be ensured.

At present, from the perspective of Northeast Asia, the most interest is in TAR project, which can be expected to create a supraregional, global transport network. Exploitation of the northern TAR corridor, connecting the railway networks of China, Russia, Mongolia, and the Korean peninsula, is regarded as the most important development in integrating the regional transport system, as it may have a remarkable impact on transportation costs and time savings. An examination of the comparative distances, time, and costs from Northeast Asia to Northern Europe shows that this supraregional network is superior to all maritime services.

However, the development of a northern TAR corridor network requires the reconnection of the two Korean railways by reconstructing short distances of missing links. Rejoining old the Korean railways would have an enormous impact on realizing the so-called Grand Trans-Northeast-Asian Railway Network. This orbital railway network may run through the Korean peninsula, Japan, Sakhalin, the Russian Far East, Mongolia, and China, using a submarine tunnel under the Korea Strait, the Seikan undersea tunnel, the Soya undersea tunnel (or bridge), and submarine tunnels under the Tatarskyi Proliv and Bohai Haixia. The completion of this grand transport network would establish an integrated transport system that would serve to realize sustainable mobility in the region and strengthen regional cohesion, as the Trans-European Network does in the EU.

Furthermore, the realization of the benefits from the development of a trans-Northeast Asian railway network would be critically dependent on the ability of the participating countries' railways to provide reliable and efficient services. For this reason, there will need to be close cooperation between the relevant railway organizations. The "United Rules Connecting the Contract of International Carriage of Goods by Rail" in the EU and "German-Belarus/Russia International Rail Freight Tariff Agreement" between Germany, Poland, Belarus, and Russia provide good examples for ensuring efficient and competitive cross-border railway service in Northeast Asia. The Organization for Railways Cooperation (OSShD) may serve as an effective regional cooperative regime in the railway sector. China, North Korea, Mongolia, and Russia are already members of

OSShD; thus the Agreement on International Goods Transport by Rail (SMGS) is in force in these countries. If South Korea and Japan join this organization, harmonization in the railway system may be achieved without creating a new coordinating body.

Information and Technology

For the transport system in Northeast Asia to be intermodal, interoperable, and interconnective, the transport nodes (such as ports, airports, and terminals) must be fully integrated with links and modes. This integration, in turn, requires the extensive utilization of telecommunications and information systems and recently developed technologies.

Electronic data interchange (EDI) lies at the heart of the integrated transport chain. The development of EDI standards and subsequent intermodal and inter-agency EDI activities are key to improving the efficiency of not only logistics activities but also passenger traffic. Major benefits of EDI are greater reliability, increased productivity, and better service. Clearly, time savings by speeding up physical flows and data interchange—such as preclearance of cargo by customs and electronic lodgement of entries—will significantly reduce paperwork, delays, inspections, and clearance times throughout the logistics chain. However, the lack of development of EDI in Northeast Asia's transport sector is identified as a contributory cause of delays in several ports and airports. Customs clearance in general in Northeast Asian ports is paper-intensive, and systems for electronic preclearance of import cargo have not yet been implemented.

Northeast Asian maritime transportation can benefit from the experience of the ARCANTEL project, financed by the European Community. This project aims at establishing a community of Atlantic-edge ports, which covers some big ports and a majority around 110 small ports. It is concerned with interport links in the first stage and with intermodality in the later stage. The first objective of the ARCANTEL project is to have the ports rapidly communicating between them through EDI. It proposes that ports should aim to achieve the target level required for the implementation of EDI in a step-by-step fashion. Thus each port will be able to proceed according to similar patterns but at different paces.

EDI is also an effective tool to handle the anticipated increase in air traffic. A cooperative pilot program for advanced passenger information system (APIS), in which Australia, New Zealand, and the United States are participating, is expected to facilitate the inspection process at airports by allowing border agencies in the destination country to prescreen incoming passengers. To meet the increasing demand for processing at Northeast Asian airports, countries in the region and air carriers should work very closely to develop means to upgrade the present system extensively.

Technology improvements will create significant impacts on the Northeast Asian transport system. As we observed in the airspace congestion and air traffic control (ATC) constraints in the region, there is a need to upgrade to high-tech communications, navigation, and surveillance (CNS)/ATC facilities, in addition to close coordination and cooperation among countries in the region. The introduction of the advanced satellite-based CNS/ATM system, called the Future Air Navigation Systems (FANS), which is being strongly recommended by ICAO to the global aviation community, will allow a significant increase in air space capacity. The successful implementation of the FANS requires close cooperation involving all countries in the region, ICAO, IATA, aircraft manufacturers, communications service providers, and international organizations for satellites services. In particular, the Northeast Asian countries need to work on this issue closely.

Large container vessels with loading capacity of 8,000 TEU and large aircraft, with seating capacity of 600–1,000 passengers and greater cargo capacity, are on the horizon. These technology developments require new infrastructure or expansion of existing infrastructure to accommodate new demands. Particular mention should be also made regarding recent technology developments, which may have substantial impacts on the intraregional shipping system.

Shallow-draft, fast container vessels such as FastShip of the United States and Japan's Techno Super Liner, which operate at high speeds and carry high-value, time-sensitive cargo, will play an important role in intraregional maritime transportation and will form an integral part of the feeder operation of main trunk line carriers. This will help to overcome maritime transport's time disadvantage, thereby enabling it to distribute goods on time—an essential characteristic of modern logistics systems. As a consequence, the small, high-speed container vessels are able to call directly at any ports where local traffic demand exists, but which were neglected previously owing to relatively small amounts of cargo.

This development of new types of vessels requires regional cooperation in appropriate port facilities and equipment in order to exploit the merits of high speed at sea in an integrated transport chain, because vessels spend about 60% of their total voyage time at ports in short-sea shipping.

Regional Standardization

Some technical measures should be promoted to ensure the most efficient use of existing and available transport facilities and equipment. Such measures could include the following:

- implementation of integrated information systems for monitoring and coordination of modal transport operations

- establishment of standardized transport equipment interchange agreements to avoid negative effects on intercountry and intermodal transport operations.

Different technical specifications and different loading units from country to country cause a lack of interoperability both between and within modes. The incompatibility of transport facilities and equipment raises transfer and handling costs and constrains regional transport capacities. If left unresolved, the growing complexity of the logistics requirements and the projected growth in intraregional trade will make it even more difficult to achieve appropriate coordination among transport industries and countries to secure harmonization and compatibility in the development of cost-effective transport in the region. Therefore, concerted efforts should be made to analyze bottlenecks and opportunities for technological developments and harmonization of equipment across transport modes and industries in Northeast Asia.

A prerequisite for the harmonization efforts is to promote an integrated information system, by supporting the use of compatible communication standards in integrated information systems and by promoting compatible hardware for information systems. In view of the increasing need for computerized exchange of data in the transport sector, it is essential to standardize the means of communication. Compatibility of software language and access facilities should be given importance. The process of harmonization can be facilitated by establishing relevant intraregional standardization bodies such as a Northeast Asian Standardization Organization.

It is a sort of irony that although the EU has reached the stage of sharing a single currency, it is struggling to harmonize standards for one of the basic building blocks of internal commerce—loading units, such as containers and pallets. The incompatibility between loading units used on vessels, trucks, and trains is costing shippers and their customers a great deal of money by increasing the number of empty returns. Consequently, many countries in the EU are pushing for standardization of pallets for Europe's internal trade. In Northeast Asia, the T-11 type pallet (dimensions 1,100 mm x 1,100 mm), which is designed to match ISO boxes, is most popular. In Japan, the T-11 type make up about 40% of all pallets used in all industries. In Korea, it accounts for 25%, and it is universally accepted in Taiwan. Therefore, it is highly likely that Northeast Asian countries will establish a regionwide pallet pool system, which would substantially reduce the procurement and distribution costs of pallets.

Japan, Korea, and Taiwan currently have their own pallet pool organizations: Japanese Pallet Rental, Korea Pallet Pool, and Taiwan Pallet Rental. If these organizations join forces to establish a Northeast Asian Pallet Pool System, and then expand the pallet pool to comprise all countries in the region, they will

greatly contribute to intraregional trade by lowering costs and improving efficiency along the logistics chain. It is estimated that the economic effect of a pallet pool system in the three countries (Japan, Korea, and Taiwan) alone would reach 1 billion dollars in 2005 (Lim, 1995).

Eventually, the Northeast Asia Pallet Pool System (NAPPS) should be integrated with the EU's Pallet Pool System and then expanded to a global scale. In order for NAPPS to work properly, a logistics network of balanced, coordinated, and standardized information systems should be built. This system should first interconnect existing logistics information systems in each country, and then be extended to include intraregional networks.

Infrastructure Financing

Transport infrastructure is the key to the integration of Northeast Asia. As air traffic tends to grow as fast as, or even faster than, economic growth, the rate of growth in container traffic is generally outstripping the rate of trade growth which, in turn, has exceeded the economic growth. In the twenty-first century, China will play the critical role in the shaping of Northeast Asia's transport system. Considering the future impact China will have in the transport sector, and the present traffic forecasts in the rest of the countries in the region, even the most successful execution of the current development plans in the region is expected to fall short of the demand for handling capacity.

In addition to these new investments, we have to take into account the physical condition of existing transport infrastructure. It is more than several decades old and will not be able to function properly in the near future. Because of low quality, deterioration, poor design, and various other weaknesses, it will not meet the minimum standards that future transport services require. Furthermore, the aging and deterioration of the existing transport infrastructure will compound the burden of traffic movement, as the life cycle of most infrastructure that was built several decades ago comes to an end. Consequently, very substantial investment is required to replace existing aged infrastructure, in addition to new investment.

These facts imply that to support the level of infrastructure investment required to continue the region's present pace of economic growth, the ability to finance its infrastructure development is critical. In this regard, the idea of establishing a Northeast Asian Development Bank was proposed at the 1991 Tianjin conference on Northeast Asia and has been pursued by the East-West Center through research and dialogue since then. This idea is very relevant to overcoming serious deficiencies in financial resources to support future viable economic growth in the region.

In addition, new approaches to financing infrastructure have to be adopted. The most significant may be private sector participation in the provision of

transport infrastructure. Already the range of private sector participation in ports, airports, roads, and railways is very wide—from straight-forward build-operate-transfer (BOT), to the extreme of complete privatization with no government participation. In order to induce private capital to fund infrastructure development, countries in the region have to offer facilitating institutional, regulatory, and administrative environments. This 1999 Forum may offer opportunities to compare experiences in various projects in the region and to reflect on issues emerging in the implementation process.

Liberalization of the Transport Market

The transport sector in Northeast Asia is in the midst of a paradigm shift. Bilateral agreements must abandon parochial protectionism and adopt an entirely new global mode of thinking. Countries in Northeast Asia differ greatly in their current level of liberalization in trade and investment in the transport sector, as a result of the huge differences in national approaches taken while developing of respective transport systems. Both in the early European Community and in NAFTA, the central thrust of the transport policy was to extend liberalization rules in the transport sector to enable the free circulation of services. Free circulation of transport service means the creation of common transport system to foster economic and social progress. A common transport system brings with it a common transport policy, which promotes the realization of a common transport market and allow transport users the choice of transport modes through competition between both different and the same modes of transport in a deregulated and liberalized market.

The objectives of regional transport policy are essentially twofold: to serve consumer interests and to ensure a strong and viable industry within the region. A liberalized transport bloc in Northeast Asia should achieve both of these long-run policy objectives by benefiting both the transport users and the transport providers.

Transport users will benefit from direct and indirect reductions in the transport costs of production and distribution. Free-market access will lead to a gradual intrusion of more efficient foreign transport providers onto the national transport scene. The greater availability of efficient transport providers will generally result in reduced transport costs. Moreover, transport providers in such a liberalized environment will benefit from the increase in the volume of their transactions. Therefore, in view of global economic trends, Northeast Asia needs cooperation in transport policy that ensures free competition in the regional transport market. In this regard the relevance of GATS principles to maritime and air transport must be reassessed. Also, the impediments to international trade in these services among countries in the region must be cleared away.

Maritime Transport

Among the requirements to promote the integration of the maritime transport market, several are prerequisites. First, countries in the region should remove—immediately or gradually, according to a schedule specified in advance—the practice of national cargo reservation, in order to give foreign-flag vessels greater access to the reserved cargoes. Second, since the integration of maritime transport services includes auxiliary services (such as port services and loading and unloading services), the liberalization principle should be extended to those services. Third, for fair competition, countries in the region should also remove the practice of governmental support and subsidies. And last, countries in the region should phase out discriminatory bilateral shipping agreements, as well as the UN Liner Code, which restricts liberal trade in the maritime transport services.

Integration among the Northeast Asian maritime transport market will lead to a welfare-maximizing market outcome in the region and further to ensure these outcomes at the global level.

Air Transport

If free trade in air services is pursued in the region, customers and carriers in each country will benefit. Liberalization of international air services will benefit customers by stimulating flows between countries, thus contributing to economic growth. Even in bilateral air transport liberalization, it has been found that the complete liberalization of pricing, frequency and entry leads to the welfare-maximizing market outcome.

Therefore, in order not only to make regional carriers efficient but also to increase consumer welfare, governments in the region must remove regulatory restrictions and increase competition by adopting open air transport systems in Northeast Asia, as this would provide expensive airlines in the region with more opportunity and flexibility to improve their production efficiency through the regional sourcing of cheap inputs such as labor, maintenance, supplies, and services.

Prior to adopting the global, multilateral, nondiscrimination principle promoted by the WTO, an effort must be made to achieve air transport liberalization among the countries concerned. In particular, for Northeast Asia to overcome fragmented air transport markets, which hinder regional carriers in their strategic positioning for future growth, it is essential for all the Northeast Asian countries to create a completely liberalized or open-skies air transport bloc, as in the EU and North America. Such a bloc will also help strengthen regional air carriers by allowing a complete network to be established, by protecting the market from carriers from other continents, and by enhancing their bargaining power in an intercontinental alliance.

Thus, in the short run, employing the easiest form of bilateral approach between like-minded countries is advisable. Against countries that are reluctant to open up at this time—i.e., China and Japan—it is advisable to take a phase-in approach that allows them to expand their own carriers' presence and to have code-sharing arrangements.

NOTES

1. This is the right of an airline from country A to carry revenue traffic between two foreign countries (B and C) as an extension of routes to or from its home country.
2. Japan, Korea, and Taiwan recently extended unlimited fifth-freedom rights to U.S. carriers, whereas North Korea, Russia, and China heavily restrict such service.
3. China, North Korea, and South Korea use the standard gauge, whereas Russia and Mongolia use the wide gauge. Japan uses the narrow gauge (1,067 mm) except for the Shinkansen, which uses the standard gauge.
4. In both the Uruguay Round and the WTO negotiations on maritime transport services, intermodal transport service was negotiated as a fourth pillar, although this was not agreed upon. Considering the fact that three pillars (international shipping, auxiliary services, and access to and use of port facilities) were agreed at the GATT Ministerial Meeting in Marrakesh in 1994, we can expect that an agreement on the issue of intermodal transport services will be reached in the near future.
5. The row between Singapore and Australia, in the 1970s, over landing rights for Singapore Airlines, is a case in point. Although no other member countries were involved in the dispute, ASEAN maintained a united position over the matter.