THAILAND’S TRADE AND INFRASTRUCTURE


From a prolonged period of success to decline in trade…..

Thailand’s economy has undergone dramatic changes over the last 25 years. From an agricultural economy based on a narrow range of export commodities the country has developed into one that is sometimes numbered among the world’s newly industrializing countries. But the agro-industrial sector remains important. After years of considerable diversification Thailand still retains its position as one of Asia’s leading agricultural exporters, although the growth of manufacturing and services has reduced the dominance of agriculture, particularly since 1986. The changes in the economic structure since 1960 have been brought about in the context of an open economic system which has promoted maximum private sector investment. Government investment activity in the early stages of planned development was concentrated on the provision of infrastructure. These activities served to open up large areas of new agricultural land for cash crop cultivation and, combined with investment incentives, encouraged the rapid development of an industrial sector, based on import-substitution. Growth continued during the 1970s as Thailand was able to find major export markets for some of its key crops, as well as for new manufactured goods, notably textiles and garments. Since 1990 the fastest growth has been in higher technology goods, such as computer accessories and motor vehicle parts.

While the annual growth rates of Thailand’s international trade transaction thus gathered and maintained a high profile for a considerable period of time, a growing number of issues has emerged since the mid 1990s that constitute serious threats to the country’s ability to sustain internationally competitive exports. The contributing factors are manifold pointing to structural defects in policies and regulatory regimes on the domestic scene. These circumstances have brought about a situation in which several elements of the national economy, relevant to industrial and trade performance, have become increasingly dysfunctional. Significant changes in the global markets, exemplified by fundamental restructuring in production and trading organizations and practices, exacerbate the threats to Thailand’s continued ability to sustain export growth. Indeed, with respect to several previously important export commodities, especially in the textile and garment sectors, Thailand has already lost major market shares to regional competitors.

Thailand needs to face and address changing global markets…..

A key element that drives changing behavior in international trading is the value of time. Market volatilities and rapidly changing consumer attitudes have induced a trend whereby industries and trading organizations, worldwide, conduct their activities with steadily decreasing inventories. Inventory management concepts like “just-in-time” and “constant replenishment” are now universally applied. While product quality and costs are still important criteria for marketing success, the ability to deliver on time and to effectively respond to customers’ requirements of short order cycles have attained an even higher
relevance for competitive success. It is here where some of the key threats to Thailand’s continued ability to expand its export markets has to be seen.

A look at the experience record with Thailand’s principal competitors in international markets suggests that their successes were, to a large extent, based on the availability of demand-responsive infrastructure and services. Particularly important in this context are efficient transport and telecommunication networks. Shorter order cycles and reduced inventories imply that the transport-intensity of manufacturing and trading processes has become very pronounced. The rapid advance of modern information technologies, supported by efficient provision of telecommunication systems, continues to have significant effects on the organization and management of trade transactions. Success with such transactions is also critically dependent on the availability of market-responsive intermediaries, such as freight forwarders and warehousing, and effective provision of banking and insurance services. The performance of customs and excise authorities and agents is a crucial aspect in this area. The availability of fresh water to households and industries is another major drawback that has been evident. The survey by the Ministry of Industry to test user assessments...comprising over 1,000 commercial establishments in Thailand revealed that major shortcomings are manifest, especially in transport and water supply (see Table 2). But also with respect to the availability of energy supply substantial problems were encountered. Reflecting these circumstances, a World Bank survey of the Thai industry concluded that a large portion of local manufacturers relied heavily on own power generation, water supply, and transport equipment. Such tendencies are totally opposite to what happens elsewhere in modern industrial and trading practice. The trend among successful entrepreneurs is to outsource all activities that are not part of their core business. Purchasing and operating own power and water supply as well as transport equipment increases the production costs of Thai manufacturers considerably...which undermines their competitiveness.

While Thailand’s competitors have adjusted, the country has fallen back

For a long time Thailand had every right to be proud of its achievements in the growth of trade, developing trade supporting infrastructure and organizing related services. A comparison on the basis of data representative of the conditions during the first half of the 1990s with countries that have essentially the same economic structure and are at the same level of development gives telling evidence (see Table 1). The only major drawback was the availability of fresh water to households and industries. But, as of late, the availability and quality of trade and industry supporting infrastructure have deteriorated. The survey by the Ministry of Industry to test user assessments...comprising over 1,000 commercial establishments in Thailand revealed that major shortcomings are manifest, especially in transport and water supply (see Table 2). But also with respect to the availability of energy supply substantial problems were encountered. Reflecting these circumstances, a World Bank survey of the Thai industry concluded that a large portion of local manufacturers relied heavily on own power generation, water supply, and transport equipment. Such tendencies are totally opposite to what happens elsewhere in modern industrial and trading practice. The trend among successful entrepreneurs is to outsource all activities that are not part of their core business. Purchasing and operating own power and water supply as well as transport equipment increases the production costs of Thai manufacturers considerably...which undermines their competitiveness.

Recently published statistics suggest a worsening situation with the availability and quality of trade and industry supporting infrastructure in Thailand. Among 106 surveyed countries Thailand ranks at position 67 with respect to paved roads; 130 countries and the availability of telephone lines...Thailand #70; 107 countries and power system losses...Thailand #51. The higher the assessed country position the worse was the status of infrastructure.

1 The tables are to be found at the end of this report.
3 The World Bank (1997). World Development Indicators. Washington, DC.
Thailand’s transport system.....a growing impediment to trade

Table 3 lays out how Thailand’s trades were carried between 1987 and 1996. Freight movements within the country rely almost entirely on trucking. The role and contribution of other modes of transport has become negligible. While noteworthy advances have been made in expanding the national highway system, many parts of the country lack adequate road infrastructure. The trucking industry was until recently much dominated by organizations with monopolistic behavior. Their service offerings were modest at best and often not in line with shipper requirements. The situation with railways remains worse, and domestic waterborne transport services inefficient. Details about Thailand’s existing transport system are presented in Exhibit 1 on page 4. Given these unreliabilities in transport Thai traders and manufacturers have to maintain excessive stocks as the only available hedge.

But, the world over, commerce has come to realize that the costs of stock holding translate into major impediments to competitiveness. In situations where the availability and quality of transport are poor it is impossible to adopt modern logistics management strategies which have become decisive in furthering competitiveness. The logistics cost component in the retail price of traded goods ranges, on average, between 20% and 25% among successful businesses in countries with well established supporting infrastructure and services. In Thailand, a conservative estimate puts the average of such costs at about 40%, which translates into avoidable costs to national trade and industry as high as 1% of GDP.

Adjusting to changing markets - the international experience.....

Economies worldwide and their industrial and trade agents have had to address changing patterns of attitude and behavior in the international markets. The adjustment processes were not easy, even in the OECD countries, as the required policy and regulatory reforms and restructuring of the productive sectors and the service industries often entailed significant fiscal and social consequences. Especially hard hit in this respect were the Central and East European countries after their export base vanished in the wake of the collapse of the COMECON system, whereupon they were forced to reorient their export focus to other countries, particularly in western Europe. But potential customers in these countries had already adopted the practices of manufacturing and trading with limited inventories and under short order cycle regimes.

Starting during the 1980s, several countries along the Pacific’s western rim and in Southeast Asia started to initiate efforts aimed at making their industries and the organization of their trades more responsive to the changing practices in the global markets. Hong Kong, Japan, Singapore, South Korea, and Taiwan have been particularly successful in restructuring the organization and management of their industrial and trading activities, even though some shortcomings still remain to be overcome. But in each of these economies significant and sustainable levels of annual trade transactions could be achieved through developing and/or adjusting infrastructure and services that were responsive to market demands. A key factor behind these achievements were clear, transparent and well focused government policies and regulatory regimes establishing effective mechanisms that ensured fullest deployment and interaction of market forces, while safeguarding public interests. Strategic alliances and consultative processes between public administrations and private sector agents were instrumental in bringing these changes about.

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**Exhibit 1 – Thailand’s Freight Transport System**

Thailand’s existing resources for carrying her domestic and foreign trades are diverse, including air, road, rail, inland waterway, maritime and coastal transport facilities. As the modal splits for freight haulage demonstrate, road transport is the most prominent transport medium. During 1996, close to 600 million tons of different types of cargo were generated in or attracted by the Thai economy. Almost 80% of the goods were domestically traded, and close to 90% were transported over the
The country’s road network encompasses roughly 226,000 km but, by international standards, only about 50,000 km could be classified as all-weather intercity routes. Reflecting the domestic shippers’ predominant preference of road transport for their traded goods, Thailand’s trucking fleet increased 2.5 fold over the past ten years to reach more than 250,000 units in 1996. The number of truck operating licenses doubled during the same period. The majority of registered trucks on Thailand’s roads has limited carrying capacities. More than 2/3 of road freight continues to be bulk commodities for which rail or water transport would be a more economic option.

Thailand’s railway network consists of only 4,000 km track of which a mere 90 km are double spur. 580 locomotives, predominantly diesel-electric, and about 10,000 railcars are in service, including 8,900 units dedicated to freight transport. While the available payloads for most categories of rolling stock have remained stagnant since the mid 1980s, the fleet of specialized equipment for container haulage has been significantly increased. But at less than 2% the railway’s contribution to hauling the nation’s freight has become marginal.

Given its vast system of rivers Thailand is ideally suited for the use of inland waterway transport to haul different categories of freight. At present, there are 1,750 km of rivers and more than 900 km of canals that are navigable. The cargo fleet plying these waterways comprises 32,000 units of 685,000 gross registered tons, more than 20% up from levels representative of the 1980s. Actually transported freight, while still modest, increased by 50% during the last five years. But a large portion of the fleet is technologically obsolete and of limited carrying capacity.

As a maritime nation with long coastlines Thailand’s dependence on efficient waterfront infrastructure and ocean transport cannot be overemphasized, particularly also in view of the fact that 95% of the country’s imports and exports, in volume terms, are carried across the seas. There are now five major ports where capacities have been substantially upgraded with streamlined management, representing the most successful initiatives to improve Thailand’s freight transport system in recent years. Vessel and freight traffic through these ports has increased more than fivefold over the last ten years. Improved port facilities have provided an impetus to coastal shipping with the fleet increasing by over 50% since the mid 1980s. However the volumes of freight carried are still modest. Coastal (or cabotage) shipping is predominantly provided by Thai carriers. The carrying capacity of Thailand’s ocean going fleet has quadrupled over the last ten years but the share of this fleet in carrying the country’s foreign trade has diminished to about 8% of all freight.

Airfreighting in Thailand has become a boom sector. If not so much in volume terms the indicators reflecting the value of cargoes moved by plane suggest a growing share in carrying the nation’s freight, especially imports and exports. There are 33 certificated airports with Bangkok’s international airport as the country’s hub. Domestic and international flight movements through Thailand’s airport system have more than doubled since the late 1980s. While domestic air transport is restricted to Thai carriers, there is a growing number of international air freight carriers that serve the country and compete for its traded commodities.
circumstances have led to ineffective, sometimes even counter-productive interventions, and ill-guided investment decisions. To the credit of several farsighted politicians and public administrators special committees and councils have been established that were meant to provide guidance in the required adjustment process. But the effectiveness of these well-meant initiatives continues to be undermined by a high degree of fragmentation in the organization and membership. In the meantime, those who were expected to benefit from the advice and actions of these committees and councils—Thailand’s business community—have resorted to “muddling through”, as little is publicly known or understood about the objectives and intentions behind these groups. An example is the “Effective Customer Response (ECR)” initiative which was aimed at raising the awareness of Thai traders about the changing determinants of international competitiveness and to help them adjust their organizations and management structures accordingly. But a survey carried out by the author in early 1998 in preparation of this assessment revealed almost complete ignorance within the local business community about the intentions behind this approach.

The limited extent to which Thai industries and traders have adjusted to market trends has been largely due to changes forced onto them by foreign business partners. Multinationals active in manufacturing and trading in Thailand apply the logistics management practices of their corporate headquarters and have been able to succeed to some extent. Their reported notion is that the current configuration and condition of infrastructure is less of a problem whereas the real issues affecting their trade performance lies in the inadequate availability and provision of services. In many respects this inadequacy is to be seen as resulting from the monopolistic or quasi-monopolistic nature of many service providers. In line with experience gained elsewhere, increased competition among service providers, like truckers, warehousers, and freight forwarders, is likely to induce major improvements in the quality of services.

There are plans to corporatize key service providers in Thailand, like EGAT, TOT, CAT, SRT, and PAT with a view to gradually introduce more commercial management, and—essentially—introduce much needed competition. These plans should be given fullest support by Government and their implementation be accelerated to the maximum possible. Many practical issues will have to resolved, however, before the expected results could be achieved. The problem lies in regulatory aspects. All these state monopolies are at present effectively the regulators of their respective service sectors, a role they cannot maintain once corporatized and ultimately unbundled into separate units to be put under private management. But more than often situations are encountered in which much reluctance to change appears to prevail.

In this environment of uncertainty, unawareness, and apparent reluctance of many “monopolists” to reform and adjust, there is a critical need for policy direction beyond the written words in development plans. The argument is that more policy direction, rather than less, may be needed to nurture the economy back into health and making Thailand’s exports more competitive in the international markets. The dialogue between government and the business community needs to be strengthened so that mutual commitment can be brought about. Regional competitor countries, like Singapore and Taiwan, were able to attain major gains in trade as a result of intensive cooperation and consultation between the public administrations and local commerce. Joint committees were in the forefront of instituting constitutional, legal, and organizational changes that had far-reaching effects on these countries’ economic performance.

What appears to happening in Thailand at present are largely uncoordinated investigations into different aspects of trade, infrastructure, and service sector management by several local research organizations and a plethora of consultants. Many of these studies have and will produce credible insights and results but the issue is: who will address the recommendations and act upon them? Because of the fragmented nature of the Thai public administration serious consideration has to be given to options for overcoming the inherent vacuum of decision-making and provision of guidance.
THE ELEMENTS OF CHANGING COMPETITIVE PRACTICE
AND THEIR IMPLICATIONS FOR THAILAND

The challenge for Thailand and her business community will be to adjust to the changing practices in international trading. This observation gains special importance in view of the fact that more than 50% of domestically produced export commodities are targeted at markets in the OECD countries where close to 2/3 of Thailand’s imports have their origins. It is in these countries where evolving commercial practices in manufacturing and trading have had profound effects on industrial relations and purchasing behavior.

Exhibit 2 -- The Changing Determinants of Competitive Success

New information technologies are transforming the way sellers sell and buyers buy. As a result, traditional marketing strategies are steadily becoming less productive and cost-effective.

Increasing customer purchase sophistication is changing the very nature of customer-vendor relationships. Customers are demanding responsive, consultative, value-added partnerships, while eschewing conventional, transactional relationships.

Innovative manufacturing and distribution strategies, electronic data interchange, and system solutions, will continue to evolve, altering the way goods are purchased. Buyers will reduce the number of approved vendors while demanding longer-lived contracts, shorter order cycles, and more responsive service.

The competitive environment is becoming increasingly more fluid in response to productivity pressures, new global competitors, and evolving corporate strategies.

Changing marketing strategies are forcing sales organizations to refocus resources dynamically, set new priorities, sell new products, and meet the demands of unfamiliar markets.

Market erosion is forcing sales organizations to focus their ever scarcer resources on more selectively chosen, high potential customer segments.

These new commercial practices are, above all, critically dependent on the availability of efficient trade-supporting infrastructure and services. The physical characteristics of these support networks and their organization are in many ways radically different from traditional structures and practices that are still prevalent in Thailand. It is therefore of prime importance for the Government and the local business community to take decisive steps aimed at establishing infrastructure systems and service provisions which are conducive to improving trade performance.

There has been growing evidence of fundamental ongoing changes in the organization and management of industrial and marketing processes throughout the world economy. These developments gained momentum during the 1970s. Since then major breakthroughs in communication and transport technologies materialized. Much of the innovation of the past 20 years has been directed, implicitly or explicitly, at the very task of shrinking distance. The continuing transport and communications revolution has brought about an enormous reduction in distance as a natural barrier to trade and investment. Technological change has intensified the pressures of international competition. Combined with deregulation in the transport and communications sectors, it has led to substantially lower costs and improved quality of these services. In virtually all cases, competition and deregulation of entry barriers have been a key factor driving down prices, raising the quality of transport and communication services internationally and domestically, and spreading access to services....in many instances playing a larger role than technological advances alone.

Among the major consequences, lower transport costs have extended the reach of global production to labor-intensive manufacturing, allowing the dispersion of production stages over longer distances, even for products with low value-added. Communications improvements have simultaneously extended the scope of global production to more technologically complex, information-intensive and time-sensitive products and services by...
permitting better information flow, monitoring, and coordination. It became possible to monitor all phases of moving a product from its raw material source through every intermediate processing stage to the consumer. Such close monitoring revealed major inefficiencies in the traditional set-up of materials acquisition, production, and distribution to the end markets. Particularly evident were the high costs of inventory holdings. Parallel to these developments, the pattern of market demand had started to shift much more rapidly than during any time before. Better information available to the consumer through improved information networks was a key reason. As consumers move faster between suppliers and product lines there is more need for businesses to anticipate quickly and correctly what will be demanded, and to put into place a foundation for manufacture and delivery of products that can be shifted economically and quickly as tastes change.

Exhibit 3 -- The Growing Importance Of Customer Service

Competitive differentiation in current and future markets will be achieved by adding value through service, focused on achieving customer goals. Customers are both end users and industrial clients. Service has become an essential tool for differentiating companies in the marketplace. Service has become as important as—and in some industries even more important than—the main line of products made and sold. The main point of today’s focus on service is to build—or maybe in some cases rebuild—strong relationships with customers that they will be extremely reluctant to buy from competitors, even if they think that the competitors’ products will be better. To make this kind of performance a reality, business managers have to go well beyond the transaction-oriented, cost-conscious, inward-looking practices of the past. They must realize that customer-driven marketing and distribution is the foundation of a new approach and philosophy which separates winners from losers. There has to be a shift from transaction-oriented to process-oriented management. What is really needed is competitive advantage that distinguishes a supplier from all competitors that a customer could buy from. Today and into the 21st century that advantage is likely to come only from value-added customer service.

Manufacturers and traders in the industrialized countries were confronted with the high costs inherent in their traditional business organizations and at the same time with increasingly volatile market demand. The need to reduce costs and to become more responsive to changing customer preferences forced these enterprises to engage in substantial restructuring of their corporate practices. Rising factor costs in their domestic markets induced outsourcing of intermediate production processes to offshore industries in countries with abundant low-wage labor and other conditions of comparative advantage. Traders also started to explore less costly supply sources. Growth in global production is deepening the economic integration of countries. International outsourcing of production inputs is gaining strength. Because of greater competition, firms in industrialized countries are being forced to take advantage of lower-cost production opportunities around the world, to desegregate production processes, especially in manufacturing, into stages which are outsourced to different countries according to their comparative advantage. This process which has been described as a “slicing up of the value change”4, is an increasingly important aspect of global production today.

These developments seemed to open prospective market opportunities for aspiring industries in developing countries and held the promise of accelerating local economic growth. Businesses in a number of developing economies—notably those along Asia’s Pacific rim—have been able to capture these new opportunities and are now active participants in the global manufacturing and trading networks. A key element behind such success was competition. As it turned out, two main forces underlie the increased intensity of

competition: greatly reduced barriers to trade and investment in these countries, and the falling costs of international communications and transport.

But global sourcing is not an exercise in finding cheap sources of supply or suppliers of questionable quality in the backwaters of the world. It is a process that companies use to select the suppliers that offer the best value. The promise of these prospects is dampened for Thailand by the apparent inability of her public administration and commercial community to effectively address the ever more stringent requirements of foreign businesses for reliable deliveries in increasingly shorter time intervals, and with low reject rates. The difficulties encountered here are a reflection of not being able to grasp and thus to internalize the consequences of technological progress and increasingly volatile market behavior. What appears to be particularly cumbersome to adjust to are the strategies adopted by the international service industries in reaction to changing global practices in manufacturing and trading. A greater traditional inward orientation in Thailand until recently provided foreign affiliates with strong incentives for domestic production and consumption, whereas in more output oriented East Asia export propensities were high and rising.

As considerations of economic efficiency and international competitiveness have gained importance the role and priorities of the Government have been called into question, and the need for new forms of regulations has become apparent. In most industrialized countries, technological progress and greater competitiveness have been the cause and effect of a trend towards deregulation and simplification, as well as updating the regulatory machinery, in turn enabling a more flexible and adaptable integration of services into productive functions. With the growing complexity of service activities, the role played by governments as providers of basic services is shrinking. Their place is being taken by private agents. In this new context governments retain the important role of regulators, ensuring the sound operation of markets and protection of consumers. This development is transforming the relations between the suppliers and users of services.

Much more explicitly than in the past, industrial success and trade competitiveness depend on highly efficient provision of supporting services and infrastructure. But it is important to note that the dimensions of services and infrastructure have changed significantly. Transportation and communications infrastructure has traditionally been thought of as physical systems that move goods or information from one point to another. By virtue of breakthroughs in technology, services, and government regulations, a new generation of infrastructure has begun to emerge, which should be thought of not only in terms of physical systems, but also in terms of the value-added services and regulatory as well as institutional requirements which enable these systems to achieve their potential effectiveness (see Exhibit 4 on page 10). This new infrastructure is so significant that it is reshaping many industries and presents profound implications for entire economies. After bringing about major benefits in the industrialized countries, the new generation of infrastructure was found to have had important effects on the trade performance of East Asia’s economies. The demand of certain markets and of globally integrated manufacturing networks are increasingly requiring the location of all their operations to be tied into the global networks of this new infrastructure. Wage differential and previously important location criteria seem to have become relatively less important in determining a country’s competitiveness.

As the East Asian examples show, innovations in business practice are becoming more pervasive and universal, and thus have the potential of dictating much of the future pace of economic progress in Thailand. This creates the need to monitor more closely the causes and effects of changing international trends in manufacturing and trading. Such assessments

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will facilitate the preparation of practical guidelines which can enable governments and business communities in the regional countries to adjust more effectively to the continuous restructuring in the international market environment. The World Bank has conducted several surveys to ascertain the changing nature of the principal drivers that affect market behavior and determine international competitiveness in the world economy.

Since a large share of exports from developing countries is targeted at markets in the OECD economies, a principal World Bank investigation concentrated on industrial and trading practices, as well as consumer behavior in the OECD markets. Through an extended cooperative network with professional and commercial organizations in several countries, it was possible to survey almost 1,500 businesses involved in manufacturing, trading, and the provision of supporting services—such as informatics, transport, and warehousing—in three regions which are important in this context: Japan, North America, and Western Europe.

The key finding was that—ubiquitously—the strategic tools used to become more responsive to volatile market demand and to cut business costs implied a new management approach. This approach aims at orchestrating the functions of materials acquisition, production, and marketing. It is called logistics management. The principal task of effective logistics management organizations is to reduce inventories to lowest possible levels through streamlined supply and distribution channels. To be effective, logistics management critically depends on advanced infrastructure and information technology. Advanced infrastructure, information technology, and logistics management may be thought of as three perspectives of an enhanced business environment that is enabling a modern economy to operate more efficiently. Advanced infrastructure refers to that segment of public infrastructure—in particular transport and telecommunications—that encompasses hardware, software and services which allow users to move goods and information more rapidly and reliably. Information technology refers to that set of technologies (hardware and software) that relate to the storage, processing, and transfer of information. Logistics management refers to business administration techniques, in terms of systems and approaches, that allow a firm to optimize the flows of goods and information that apply to their operations.

### Exhibit 4 -- The New Dimensions Of Trade-Supporting Infrastructure

Changing international practices in manufacturing and trading have entailed a different demand for supporting infrastructure. The new generation of infrastructure covers a wide spectrum of technology enhancements and specific applications related to transport and communications. These breakthroughs have been referred to as "Advanced Infrastructure" [AI]. AI combines basic transportation and communications technology with information technology, thereby creating an enhanced service capability.

Other than technology enhancements, a key distinction between AI and basic infrastructure is the increased importance of value-added services associated with AI. The idea is that service providers, as well as the services themselves, are actually a part of infrastructure which is very different from the way infrastructure has ordinarily been characterized as physical. Whereas basic infrastructure is primarily supply oriented, AI must be looked at from the demand side by including considerations of design and applications that are tailored to meet the needs of specific users.

This new dimension of service—the value-added that it provides—not only expands the definition of infrastructure, but also makes it more important to create an appropriate environment in terms of policies, standards, and resources, in which to develop AI. Without this kind of complementary support, the effectiveness of AI is simply lost. In fact, in industrialized countries, it was only after major policy reforms were introduced and the service sector became more developed and prominent that these AI systems first occurred.

The new generation of AI has had profound effects on the economics of manufacturing industries in industrialized countries. Increasingly, AI has important consequences for Thailand as well. While

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traditional considerations, such as costs of labor, utilities, and space remain important, regional manufacturers must also have access to global networks in communications and transportation in order to meet the competitive demands in modern business environments. The premise is that if the regional economies do not develop AI they will gradually lose their competitive edge and run the danger of experiencing declines in their manufacturing industries.

Merely having adequate physical infrastructure, such as ports, roads, and telephones will not be sufficient to promote the activities that growing economies need. This physical infrastructure will have to be enhanced with technology and applications (i.e., AI) that allow firms to meet the competitive demands for shortened product cycle times and improved customer service.

The inclusion of value-added services as part of AI means that governments need to change how they plan and administer this sector. In order to create and effective AI, they must not only plan the physical infrastructure but must also create the appropriate environment in which the facilities and the service providers will operate. Governments must recognize that availability of AI is becoming extremely critical to firms if they plan to compete in the global market place. This new generation of infrastructure depends to a great deal on the freedom and flexibility of service providers and users have in employing this infrastructure.

The survey confirmed that the costs of excessive inventory holdings have been identified as the heaviest burden on corporate performance. The application of logistics management principles has enabled many industries and trading organizations to conduct their business with inventories which now often represent less than one week of supplies required for manufacturing or retailing. Purchasing and selling under “just-in-time”, “constant replenishment”, or “quick response” arrangements are gaining decisive importance for efficient inventory, and—more importantly—for competitive success.

These achievements have had remarkable effects on product costs. Expenditures incurred in managing logistics organizations amounted on average to 23% of value added and 70% of the operating margins in all industries which were surveyed. Through dedicated efforts in many industries the logistics cost share—essentially reflecting transport intensity and the level of inventory holdings—in product final prices could be reduced to almost 20% on average. Companies that were successful in streamlining their logistics management organizations reported that 1% reduction in their logistics costs had the same effect on corporate performance as a 10% increase in annual sales.

The World Bank’s international survey revealed that success materialized through far-reaching reorganization of corporate structures, and a substantial development of strategic alliances with service providers. Many industries and trading enterprises have externalized all activities which are not core to their basic mission, which is production or selling. As a result, transport, warehousing, and communication services are increasingly provided by third parties. Progressive companies also consider outsourcing equipment and private fleets because of their capital intensity. A factor that will continue to fuel outsourcing of transport functions is increasing specialization. But under the continuing pressure to rationalize, the functions of transport and management of inventories in transit will have to be even more integrated into manufacturing and sales processes. This need implies much further streamlining of supporting services and related infrastructure with emphasis on systems integration. Much of the attention that is now being devoted to service stems from the business community’s movement toward integrated management practices. By closely linking buy and sell functions, these practices place increasing demands upon intermediary transportation and logistics functions.

An essential point to note in the context of outsourcing with respect to the provision services but also as regards the purchase of inputs to production is the trend towards concentrating on a limited number of business partners. The old adage of “zero-sum game” has yielded to corporate strategies which center on strategic long-term alliances with only a few carefully selected producers or service suppliers under which each partner assumes clearly defined responsibilities, thus sharing risks. The importance of it all is that
dependability and ability to provide highly efficient contributions to the joint undertaking has become a cornerstone of success...and advanced infrastructure plays a crucial role in this.

The survey findings largely confirmed that the provision of efficient supporting services had become possible through unprecedented advances in transport and cargo handling technologies. The focus within the transportation function has shifted from efficiency and cost-effectiveness to measurement of on-time delivery, order fill rates, and order cycle times. Furthermore, there was clear evidence that effective communication links are prerequisite for the success of any logistics management system. Recent World Bank investigations\(^7\) revealed how much new information technologies have rendered many services increasingly tradable. These developments have been instrumental in enhancing two new dimensions of services: first, the proper integration and utilization of modern and efficient logistics organizations in the production process, and, secondly, logistics services have become an important source of value-added. Shippers increasingly select service providers which offer most value-added over and above their traditional activities. An important value-added service in transport and warehousing is the facility to electronically track shipments real-time. Order processing and assembly are other value-added services in these two industries which are attractive to shippers.

In some countries, liberalization of government regulations, basically by removing infrastructural and service barriers to efficient competition in the transport and telecommunications sectors, provided facilitation. The US experience record demonstrates this convincingly (see Exhibit 5 on page 13). The net result of a more open political environment was the creation of greater opportunity for logistics to take an active role in competitive practice. In short, establishing such conditions is the task of economic policy. Policy is what matters overall. The key to growth of trade through improved competitiveness is granting producers and consumers the economic freedom to face market challenges and to respond to incentives.

Perceptions of what constitutes quality have evolved as well. Total quality management programs—promoted by the International Standards Organization under the ISO 9000 norms—that took root in the manufacturing environment have grown in influence and are now being applied to every business function. ISO 9000 certification is also becoming a key competitive factor in the infrastructure sector. The term quality, traditionally associated with product defects, has quickly become synonymous with good service. Likewise, customer service is no longer used exclusively to refer to order entry departments, but has taken on much broader meaning and now refers to every process that ultimately affects the customer. More and more companies are evaluating performance by monitoring order fill rates, on-time delivery, and out-of-stocks, all of which involve transportation and other logistics functions. It is apparent that quality service has become key in gaining competitive advantage.

In the countries surveyed by the World Bank the traditional hierarchical organization structure effectively met the overriding logistics goals of reducing the costs of the logistics elements—transport, warehousing, inventory. This structure reached its greatest effectiveness in the early 1980s when the convergence of freight deregulation, new information technology, and global supply and competition created major opportunities for lowering cycle costs. However by the late 1980s the usefulness of the traditional structure significantly declined for two reasons. First, a pattern of diminishing returns set in as freight rates and systems redesign reached near optimum levels after nearly a decade of assault. And second, the demands and opportunities for logistics shifted from costs to market—to the strategy for supplying it and to information about how well the supply strategy was being implemented. Increasingly,

logistics became attached to other frontline functions, such as corporate strategy, marketing, information, control, and procurement, as well as to manufacturing. It was discovered that logistics is inseparable from these functions, and that formal interface with each creates new opportunities for profitability. The interface with marketing focuses on executing those aspects of the logistics process which the customer perceives as most critical to buying a product. Successful companies have recognized that time is a strategic variable that impacts on competitive success in the market place. Increasingly they are looking at logistics for ways to offset market erosion.

STRATEGIC OPTIONS TO ENHANCE THAILAND’S TRADE THROUGH BETTER INFRASTRUCTURE AND SERVICES

Thailand’s Government has at its disposal a set of instruments with which to stimulate the development of a competitive service sectors. Some of these, such as trade, fiscal and monetary policies, fall within the scope of macro-economic policy. Others may necessitate changes in the institutional and regulatory framework, while the achievement of more specific objectives may call for particular strategies aimed at positioning national enterprises in the international market. Overall, attempts to strengthen the organization and provision of services will entail devising and applying specific strategies to overcome the weaknesses characteristic of existing trade-supporting infrastructure and logistics services. The incorporation of foreign service providers to assist in the attainment of sustainable development, whether by facilitating access to new technologies, information networks and distribution channels, or improving capacity for training and the generation of domestic know-how, may be an important component of industrial and trade development policy. As can be observed elsewhere, policies with regard to trade in goods have had a marked effect on the evolution and development of services. Imports of equipment and inputs for various service activities, especially high technology products and those that support telecommunications infrastructure, need a sufficiently liberal regime not to thwart the development of the services that depend on such inputs.

Exhibit 5 – The Macro-Economic Effects Of A Deregulated Logistics Service Industry

Creating a policy and regulatory environment which enables national producers and traders to adjust effectively to changing practices in the international marketplace is not only beneficial to corporate performance but leads to improved fundamentals for the economy as a whole as well. Of the few countries that maintain sufficiently disaggregated national statistics to allow conclusive assessments, the United States’ performance indicators for the national economy provide evidence of the effects of service industry deregulation on logistics expenditures incurred in manufacturing and trading. Particularly noteworthy is the decreasing trend over the years in nationally aggregated freight payments.

Following successive deregulation of the different transport modes, from the late 1970s onward, the annual logistics expenditures in the national economy dropped from an equivalent of 17.2% of GDP in 1980 to 10.8% in 1994. The average annual cost savings were in excess of US$ 60 billion. A further acceleration in the decline of the annual logistics expenditures/GDP ratio started towards the end of the 1980s and can be largely ascribed to the effects of deregulating the telecommunications industry. Competition created better telecommunication service offerings which enabled manufacturers and traders to reduce order cycles further and to turn over inventories more frequently thanks to improved linkages with transport, warehousing, and other trade supporting service providers. Higher frequencies of inventory turnover induced major increases in the annual returns on assets in almost all industries.

The policy interventions and subsequent developments in North America and, similarly, in several other OECD countries demonstrated the growing importance of transport. As the practice of manufacturing and trading with minimal inventories has spread the demand for efficient transport services has increased measurably. For instance, while the aggregate annual costs of inventory carrying in the U.S. economy has remained almost stable since 1980 the concomitant annual incidence of freight transport more than doubled. A typical phenomenon of modern manufacturing and trading...
practices is that shipment sizes tend to become smaller whereas shipment frequencies increase significantly. Hence the intensity of transport as an integral part of industrial and marketing processes is becoming more and more pronounced. More than ever before, efficient transport networks have become prime prerequisites for establishing market-responsive trading arrangements. This observation applies to both international and domestic trades. In the case of international trade the availability of efficient transport services and their supporting infrastructure is now a key determinant of competitiveness. On the domestic scene the quality of local distribution networks exerts much influence on product availability and retail prices with obvious effects on affordability and the national industries' ability to engage in modern logistics management practices.

Experience is still limited but shows that in order to stimulate the supply of domestic logistics services governments have experimented with different instruments, including direct financial support. For instance, in Colombia, the Government established the Vallejo Plan, which provides for the development of service enterprises through soft financing for the purchase of equipment, international promotion, and the acquisition of appropriate technologies. Other observed tactical applications include fiscal and credit incentives, and modification of the regulatory systems to reduce or remove the boundaries between different services. Attempts have also been made to promote the supply of logistics services on the basis of incentives for the externalization of locked-in knowledge, the establishment of service centers, and training facilities aimed at teaching the essentials of logistics services and their role in modern-day competitive practice. But success with these measures has been limited.

Without substantial improvement of domestic infrastructure, a liberal regulatory framework that governs the service sector, and businesses that are willing and able to apply modern logistics management techniques, the outlook will not be promising. In effect, if Thailand and her business community are unable to adjust to these new market practices there is the danger of having to face the risk of becoming marginalized in the international trade markets. Against the international experience record to date it appears unequivocal that a key criterion of the required adjustment agenda relates to infrastructure and services in support of industrial and trading processes. More specifically, the establishment of effective transport and telecommunications arrangements—both from an infrastructure and service organization point of view—should be given prime consideration.

Distance is critical in logistics management and equates to transport dependency. Since Thailand is remote from many of the principal consumer markets, the country is crucially dependent on efficient arrangements for freight transport. It is also important for policy-makers to appreciate that demand-responsive production with lower average inventories translates into an increased requirement for small shipments in effectively controlled logistical environments, which signifies high transport intensity. As the experience in the OECD community exemplifies, the implication is that rectifying transport system shortcomings should be high on Thailand’s reform agenda in its drive to increase the competitiveness of the national industries. A special challenge will be to design regulatory provisions and organizational arrangements that will yield optimal use of existing physical network structures. The development of efficient intermodal freight transport systems should be given high priority—based on the comparative advantage of different modes—if overly heavy reliance on road transport is to be avoided. Shippers prefer road transport because of its apparent flexibility, which other modes—in particular the railways—have failed to produce. However prolonged reliance on road transport for freight movements has led to severe economic and social problems in many OECD countries. To counteract these adverse impacts their governments are now actively devising measures aimed at increasing the share of other modes through dedicated efforts to promote intermodality. Thailand’s Governments should capture the opportunity to avoid the costly mistakes of the (initially) misguided regulations and investment decisions related to freight transport systems in the OECD economies.
As a consequence, the required adjustment process in Thailand is quite diversified and invariably complex. With respect to transport, some affirmative actions have already produced beneficial results. The earlier decision to open ocean transport of Thai imports and exports to international competition has resulted in freight rates for waterborne transport to tumble between 30% and 50% since 1994. Unfortunately there are now efforts to restrict such competition and to provide for special incentives aimed at improving the share of Thai national flag carriers in carrying the country's foreign trade. A priori, such sentiments are understandable in view of the country's annual payments for ocean transport, estimated to amount to US$ 4 billion, the current low share of Thai carriers in this, and thus the huge impact on the invisible trade account. But such preoccupation should be weighed against the benefits deriving from fierce competition in international ocean transport. Current sea freight rates into and out of Thailand are at an historic low. It is unlikely that Thai carriers will be able to effectively compete with the better organized and equipped foreign carriers. Furthermore, the costs of incentives and subsidy scheme that are being considered to be offered to Thai carriers should be factored into any calculation of cost-effectiveness. Thailand would therefore be well advised to refrain from propping up a largely moribund national maritime transport sector. Instead, the Government should follow the policy decisions adopted by almost all Latin American governments in this respect. Protectionist attitudes prevailed there until the late 1980s. The results were manifested by excessively high sea freight rates and huge annual subsidies to be paid to national flag carriers. Following Chile's early example, government after government abolished national flag protection and cargo reservation rules. The opening of their trade lanes induced overwhelming competition among an ever growing population of carriers vying for the market. Unavoidably, many of the formerly protected national carriers did not survive the battle for the market because of their ineffectual organization and management and thus went into bankruptcy. But the competitiveness of regional trades improved markedly because of better service provisions and substantially lower transport costs.

On the positive side for Thailand has been the admission of private interests in port financing and management which has led to decreases in terminal handling charges by up to 70% as productivity improved considerably, driven by fierce intra- and inter-port competition. The current plans to reorient the role and function of the Port Authority of Thailand are sensible and should be given fullest support.

But impressive as these outcomes have been, significant inefficiencies continue to exist beyond the waterfront. The physical condition and the performance of inland distribution networks are still far from adequate. The reasons are manifold. Most cumbersome are local regulations which stymie initiatives within the national transport sector to become more responsive to changing shipper requirements. The concern of ensuring quality, competitive prices, and adequate provision of services, while at the same time adapting them to technological advances, places transport service suppliers under pressure to improve management and operational efficiency. It is encouraging that several entities in Thailand have come to appreciate the apparent inability of state monopolies in transport and other services to meet this challenge, giving rise to policies aimed at privatizing these monopolists. It is hoped that the demands of a more competitive environment will provide the necessary stimuli for technological progress to focus its creativity on developing new and better services, tailored closer to the requirements of the production and distribution processes. New and enhanced services, associated with modern information technologies, will increase productivity for both goods and other services. They will also facilitate the application of new management techniques, make relations between the various stages of design, production, and marketing of products and services more expeditious, allow customized services to appear, help to create greater economies of scale, and facilitate an efficient globalization of the production and distribution functions.

In Thailand the laws and regulations which govern the conduct of trade and the organization of trade supporting services and infrastructure have barely been changed since
the time of their promulgation, decades back. Hence their provisions are substantially out of line with the exigencies of modern markets. This situation is all the more critical as most elements of the service sector relevant to supporting trade—transport, freight forwarding, warehousing, telematic information systems, banking, and insurance—have become increasingly interdependent to yield efficiency. Failure of one element in this interdependent setting to efficiently respond to market requirements usually undermines the performance of all other elements....the weak link syndrome.

One of the most important aspects of modern logistics management is internationally harmonized documentary procedures which enable speedy electronic transmission of freight bills, payment orders, insurance contracts, and transactions relevant to the movement of goods. A modern and efficient telecommunications infrastructure capable of supporting, at low cost, the domestic and international development of such varied services as banking, transport and other logistics services that are direct users of such networks is indispensable. In countries where major advances in streamlining logistics management organizations have been achieved customs or excise clearance of traded goods has also been integrated into the electronic communication systems. As a result, such clearance is usually swift. In contrast, complicated and hence tedious customs practices in Thailand remain one of the principal obstacles to better trade performance.

Ways have to be found...on a priority basis...to remove this bottleneck. The Government is rightfully concerned about ensuring proper revenue collection and fighting contraband. But there are proven successful ways of safeguarding against such concerns while facilitating trade transactions at the same time. The reforms in customs regulations, organization, and procedures in Mexico (see Exhibit 6 on page 17) provide a good example for possible replication elsewhere, if adjusted to local conditions.

Adjusting the national infrastructure system to the special requirements of trade and the supporting services is demanding and considered to be costly. But Thailand is endowed with infrastructural assets that have been developed over generations. Quite often, the problem has been not so much a lack of resources, but an inability to use existing resources well. To some extent such a state of affairs is, again, due to overbearing regulations and too much state intervention. On the other hand, in areas where the state could rightfully be expected to take a more proactive role it has largely failed to do so. The dismal state of highways and rural roads in many regions of the country attests to this observation. But without well maintained roads it will be difficult to organize efficient trade and industry logistics management systems, regardless of how good the quality and low the costs of local products are when they leave the assembly lines or the farmers' fields.

Trade supporting infrastructure needs, above all, to be well maintained. Without doubt, such infrastructure will also have to be modernized as well so that the productivity potentials of new transport and freight handling technologies can be fully exploited. Budget constraints in Thailand will limit the scope of such required interventions. Hence ways have to be explored to tap non-traditional sources of finance, which largely points to attracting private capital. The experience in Thailand’s ports suggests that attracting private capital goes hand-in-hand with involving private expertise in asset management. As successfully demonstrated in many countries throughout the world, there is ample scope for creating synergies through public-private partnerships in financing and managing trade supporting infrastructure and services. But to succeed there has to be unequivocal commitment within the Governments to such partnerships, accompanied by a transparent legal framework that will govern such alliances.

Other than ports, there are now plans in Thailand to involve private capital and management expertise in making the national railway system more responsive to evolving market requirements. The State Railways of Thailand (SRT) not been able to provide services which would have induced shippers to use rail transport for their traded commodities. With a market share of under 2% in freight haulage the railways have essentially been
marginalized. True, by international comparison SRT has to contend with a very limited rail network that, in addition consist mostly of single track. But, arguably, there is much dormant delivery potential that could be tapped by better organization and management. SRT current organizational setup requires unbundling and non-core activities should be hived off third party providers who would in all likelihood be from the private sector. An appropriately liberalized railway system could count on private capital for network expansions and modernization.

**Exhibit 6 -- Customs Reforms: Mexico’s Success In Breaking A Major Trade Barrier**

In the early 1980s, Mexico’s economy experienced a sharp downturn which brought in its wake severe balance of payments difficulties. The Government responded with a number of reform initiatives which, over the years, had the result that the country transformed into an open economy. The industrial base changed and so did the nature and composition of foreign trade. Non-oil merchandise exports, which represented less than one-third of total exports in 1984, have doubled their share since then. But there remained a number of impediments to efficient trade flows. A key one was customs administration and procedures which were not adjusted in line with the trade reforms.

Customs procedures were highly centralized and antiquated, involving numerous, complex, time consuming and non-transparent steps. Traders faced long processing delays and substantial undocumented costs in clearing merchandise. An enormous amount of legislation and ordinances applicable to customs had proliferated over the years, many were never published and underwent constant changes. No uniform standards for application of the rules were exercised. Almost unlimited discretion and negotiating power were given to customs officers, with the result that the authorities had lost control of the process. The Directorate General of Customs (DGC), part of the Ministry of Finance, operated with nearly full independence and little supervision. This situation was aggravated by tight limitations of customs broker licenses. The brokers enjoying such licenses were generally considered to be major accomplices in customs irregularities. The structure of broker fees was such that 70 percent represented compensation for “undocumented expenses”. Thus there was a clear incentive to increase such discretionary payments to customs officers.

In 1989, the Government stepped in and introduced major changes in the organization and management of customs services. DGC was stripped of many of its prerogatives, which were assigned to other agencies within the Ministry of Finance, and was left with the sole mandate of facilitating the physical process of customs clearance and prevention of smuggling. The customs administration was decentralized. Top line staff were reshuffled and some replaced to collapse colluding cliques and to encourage more professionalism. Customs reform is part of an overhaul of the tax system, and customs has now been integrated with general tax collection. The rights and obligations of traders and customs have been widely published to enhance transparency. Traders no longer make payments of tariffs to customs officials but to commercial banks which opened branch offices in customs facilities.

Widespread computerization and electronic data linkages are the backbone of the reformed inspection system. A computer-generated random selection process now determines which trade transactions are to be inspected. The intention is to remove discretion and negotiability. The number of steps in the customs process has been reduced from twelve to four. The new system has led to the closure of several inspection facilities. Customs clearance must now be carried out at the frontier or at an interior site within the jurisdiction of a trader’s local fiscal office. This measure removed the past need for lengthy detours to the previously tightly controlled brokers, which were subject to stiff fines. The remaining customs personnel benefit from an official incentive scheme whereby they receive bonuses for meeting predetermined productivity levels.

There is much evidence that the immediate effects of these reform measures have been substantial. A World Bank survey assessed first year cost savings at US$ 2.03 billion, which represented about 5% of the total value of merchandise trade in 1989, or close to 1% of GDP. These savings resulted from an average 3 day reduction in customs transit time, with attendant reductions in the costs of interest, storage, and transport, as well as lower broker fees, and eliminated “undocumented expenses”. It is also noteworthy that the daily collections of customs duties at different facilities increased between 12% and 15%.
It may also be opportune for the Thai Government to further engaging private contractors in highway maintenance, and to build more trunk roads...especially to serve deprived rural areas...as toll facilities through concession arrangements.

Yet, more needs to be done if the local industries are to become more competitive internationally and the costs of domestic trading are to be reduced. Importantly, more effective dialogue between the public administration and the business community is needed. Business requires freedom of action while having to accept that the concept of “checks and balances” has to be maintained. Experience has repeatedly shown that, once given the freedom to take measures considered to be profitable, private entrepreneurs have invested in market-responsive infrastructure and service arrangements which turned out to be beneficial for national trade performance. An outstanding example is represented by the initiatives taken in Argentina with respect to involving private interests in the management of national railways, ports, airports, and parts of the local highway system. Clearly, the State needs to ensure that abuse of newly acquired rights is avoided, but the dynamics of private management of national trade supporting infrastructure and services cannot be overstated.

The Government’s role should gradually shift to being a promoter rather than manager of trade supporting infrastructure and services. The Government should be facilitators and create an enabling environment in which local industries and the trading community can adopt modern logistics management concepts with all their proven enhancement potential as regards productivity and competitiveness. Very importantly, the Government must actively endorse and, where necessary, supply advanced infrastructure. Establishing a regulatory framework that supports advanced infrastructure development is a must. In this general context, the Government’s policy should not restrict entry or operations of qualified international service providers.

There are other important situations where government involvement in the development of services and applications may be not only appropriate, but essential. Government assistance is particularly crucial for those segments of local industry that are primarily composed of medium and small size companies which do not have strong industrial associations. In the case of Taiwan the automotive industry lacked the kind of competitiveness that would drive manufacturers to develop electronic data interchange (EDI) systems in support of trade management on their own. But by having automobile suppliers linked to such a system, manufacturers could be expected to benefit and the industry itself become more appealing to foreign markets for higher value added products. Since the local value added service providers did not have strong incentives in this fragmented market to develop EDI, it was appropriate and useful for the Government to develop such service.

The technology used for applications associated with advanced infrastructure often requires large research and development expenditures that the private sector, by itself, might not be willing to absorb. It may therefore be appropriate for the Thai Government to become more involved through general funding support and initial development at its own institutes or local polytechnics. The Government should also get more involved in service or application development in situations where there are so many participants that it requires the leadership and authority of public agencies to garner the cooperation needed to develop a system.

A task for which Thailand’s Government should arguably take a leading role is human resource development. What use is modern technology if the country’s workers cannot read the instructions on a bag of fertilizer, let alone if they or their managers are ignorant of the essential ingredients of modern trade and industry logistics management organizations. Successful initiatives to overcome such issues can be observed in some of the Central and East European transitional economies, which were confronted with the same problems. Hungary’s efforts to establish a well-trained human resource base for efficient industrial management and market-responsive provision of trade supporting services can serve as a model for application in Thailand.
The process of change has been assisted by increasing levels of technical education which has facilitated the international transferability of technology. One of the most striking features of the fastest growing amongst the newly industrialized economies of East Asia has been the very high commitment to basic education. But one also needs to ask under what sort of conditions will the right sort of action happen? The simplest answer is, under conditions that grant the investor—a firm buying a new machine or sending an employee to be trained—an adequate return. In Thailand such conditions are still imperfect, which is why the adjustment process has been slow and ineffectual.

Exhibit 7 -- Public-Private Partnership in Human Resource Development for Managing Trade and Industry Logistics

World Bank sector work revealed that the concept of integrated logistics management was widely unknown in industrial and trading circles in Hungary. Application of modern logistics management principles in manufacturing and marketing processes was therefore limited. Most critical was that Hungarian manufacturers and traders were largely unaware of the growing importance of effective logistics organizations in competitive practice elsewhere in Europe. It had become a matter of vital importance for Hungarian businesses to adopt the same logistics practices which have enabled their foreign competitors to gain and expand their market shares.

As an integral part of the World Bank supported Product Market Development Project, a national Logistics Promotion Center (LPC) has been established as the principal agency for institution building and human resource development. LPC’s mandate is:

- to further awareness within the national industry and trading communities, and the service sector of the importance of effective logistics organizations for commercial success, and to organize corresponding public relations campaigns;
- to be the focal point and facilitator of discussions regarding the organization and management of logistics related training and formal education in Hungary;
- to act as advisor to anybody who is in need of assistance to introduce or streamline trade and industry logistics organizations, or to arrange for logistics related personnel training; and
- to establish and maintain professional contacts and expert exchange programs with similar organizations in other countries.

LPC was established as an independent organization of public utility under the umbrella of the Hungarian Foundation for Industry (IMFA). IMFA’s mandate is to “support the technical development of the Hungarian industry to increase its international competitiveness”. Several private sector organizations committed their full support and are actively involved in LPC’s activities. They include the Hungarian Association of Logistics, Purchasing and Inventory Management, the Hungarian Marketing Association, the National Trade Association, and several bodies representing different segments of the local industry.

In summary, the challenge facing policy-makers in Thailand is to establish conditions that would enable the national economy to attract more global production, and to realize more of its benefits through increased trade transactions. Such conditions include enhanced political and macro-economic stability, improvements in transport and communications infrastructure, and better property rights for investors. A crucial condition for capturing more benefits is more competition. In general, policies will be most effective when they are harnessed to a realistic appreciation of where the country’s competitive strengths lie. Policies that encourage greater competitive pressures on all firms from all sources are likely to maximize the benefits that the Thai economy could derive from global production...because competition forces firms to be more efficient. More open trade and investment frameworks are among the best channels for introducing such competitive pressures in traded goods sectors. In the service sector, they need to be complemented by the encouragement of foreign investment and well-designed regulatory policies that promote competition. In all this, there should be concerted efforts, involving the public administration and local business

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community, to promote and develop advanced infrastructure in support of Thailand’s production and trading.
### Table 1

#### TRADE AND INFRASTRUCTURE

**How did Thailand measure up against Equals?**

<table>
<thead>
<tr>
<th></th>
<th>Thailand</th>
<th>Brazil</th>
<th>Chile</th>
<th>Colombia</th>
<th>Hungary</th>
<th>Korea</th>
<th>Malaysia</th>
<th>Mexico</th>
<th>Morocco</th>
<th>Philippines</th>
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</thead>
<tbody>
<tr>
<td><strong>TRADE INDICATORS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Annual Export Growth (1988-94)</td>
<td>17.4%</td>
<td>3.1%</td>
<td>7.7%</td>
<td>7.4%</td>
<td>8.5%</td>
<td>6.5%</td>
<td>17%</td>
<td>10.6%</td>
<td>7.1%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Manufactured Exports/Total Exports (1993)</td>
<td>73%</td>
<td>60%</td>
<td>18%</td>
<td>40%</td>
<td>68%</td>
<td>93%</td>
<td>70%</td>
<td>75%</td>
<td>57%</td>
<td>76%</td>
</tr>
<tr>
<td>Export Share of World Trade (1994)</td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>1.9%</td>
<td>1%</td>
<td>0.9%</td>
<td>0.1%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Export Growth from Market Diversification (1988-94)</td>
<td>6.8%</td>
<td>1.3%</td>
<td>2.8%</td>
<td>3%</td>
<td>1.30%</td>
<td>0.9%</td>
<td>5.6%</td>
<td>0.2%</td>
<td>0.6%</td>
<td>3%</td>
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<tr>
<td><strong>INFRASTRUCTURE INDICATORS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paved Road Density (km/1mn people) 1995</td>
<td>1027</td>
<td>2888</td>
<td>772</td>
<td>361</td>
<td>6698</td>
<td>1254</td>
<td>3500</td>
<td>994</td>
<td>1126</td>
<td>346</td>
</tr>
<tr>
<td>Electric Power System Losses/total power output 1994</td>
<td>10%</td>
<td>16%</td>
<td>11%</td>
<td>21%</td>
<td>13%</td>
<td>5%</td>
<td>10%</td>
<td>14%</td>
<td>4%</td>
<td>16%</td>
</tr>
<tr>
<td>Phone Lines (per 1,000 people) 1995</td>
<td>59</td>
<td>75</td>
<td>132</td>
<td>100</td>
<td>185</td>
<td>415</td>
<td>166</td>
<td>98</td>
<td>43</td>
<td>21</td>
</tr>
<tr>
<td>Phone Faults (per hundred lines/year) 1992</td>
<td>32</td>
<td>43</td>
<td>82</td>
<td>83</td>
<td>60</td>
<td>13</td>
<td>78</td>
<td>64</td>
<td>84</td>
<td>10</td>
</tr>
<tr>
<td>Waiting Time for a Line (years) 1994</td>
<td>4</td>
<td>0.9</td>
<td>1.2</td>
<td>2.6</td>
<td>3.4</td>
<td>0</td>
<td>0.3</td>
<td>0.2</td>
<td>0.7</td>
<td>5.5</td>
</tr>
<tr>
<td>Fax Machines (per 1,000 people) 1995</td>
<td>1</td>
<td>1.3</td>
<td>1.1</td>
<td>2.6</td>
<td>2.5</td>
<td>8.4</td>
<td>3</td>
<td>2.1</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Access to Water (urban areas) 1993</td>
<td>65%</td>
<td>99%</td>
<td>100%</td>
<td>90%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>90%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Access to Water (rural areas) 1993</td>
<td>45%</td>
<td>68%</td>
<td>31%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
<td>80%</td>
<td>66%</td>
<td>18%</td>
<td>65%</td>
</tr>
</tbody>
</table>

(Access Indicators reveal percentage of demand served)

Source: World Development Indicators 1997; The World Bank
### TABLE 2

**How the Thai Industry judges Trade Supporting Infrastructure**

(1) **The Quality of Service**

<table>
<thead>
<tr>
<th>Sector</th>
<th>TRANSPORT</th>
<th>TELECOM</th>
<th>POWER</th>
<th>WATER</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Parts</td>
<td>2.2</td>
<td>2.1</td>
<td>2.2</td>
<td>2.1</td>
<td>2.15</td>
</tr>
<tr>
<td>Electronics</td>
<td>2.2</td>
<td>2.3</td>
<td>2.5</td>
<td>2.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Food</td>
<td>2.5</td>
<td>2.2</td>
<td>2.4</td>
<td>2.2</td>
<td>2.325</td>
</tr>
<tr>
<td>Garments</td>
<td>2</td>
<td>1.8</td>
<td>1.9</td>
<td>1.7</td>
<td>1.85</td>
</tr>
<tr>
<td>Textiles</td>
<td>2.1</td>
<td>1.8</td>
<td>2.1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Relative Weight</strong></td>
<td><strong>2.2</strong></td>
<td><strong>2.04</strong></td>
<td><strong>2.22</strong></td>
<td><strong>2.04</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The indicators reflect a scale of 1 (problem free) to 5 (major problems)*

(2) **As to whether the Quality of Service has improved lately**

<table>
<thead>
<tr>
<th>Sector</th>
<th>TRANSPORT</th>
<th>TELECOM</th>
<th>POWER</th>
<th>WATER</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Parts</td>
<td>1.9</td>
<td>1.7</td>
<td>1.9</td>
<td>1.9</td>
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<tr>
<td>Electronics</td>
<td>2</td>
<td>1.8</td>
<td>1.8</td>
<td>1.9</td>
<td>1.875</td>
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<tr>
<td>Food</td>
<td>2</td>
<td>1.9</td>
<td>1.9</td>
<td>2</td>
<td>1.95</td>
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<tr>
<td>Garments</td>
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<td>1.8</td>
<td>1.9</td>
<td>1.875</td>
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<td>Textiles</td>
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<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
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<tr>
<td><strong>Overall Rating</strong></td>
<td><strong>1.98</strong></td>
<td><strong>1.8</strong></td>
<td><strong>1.86</strong></td>
<td><strong>1.92</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The indicators reflect a scale of 1 (improved) to 3 (deteriorated)*

*Source: Ministry of Industry*
TABLE 3

How Thailand’s Trade was carried

<table>
<thead>
<tr>
<th></th>
<th>Foreign Trade</th>
<th>Domestic Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sea</td>
<td>Land</td>
</tr>
<tr>
<td><strong>Value (million Baht)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IMPORTS</strong></td>
<td>1987</td>
<td>269,983</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>797,564</td>
</tr>
<tr>
<td></td>
<td>1996</td>
<td>1,347,375</td>
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<tr>
<td><strong>EXPORTS</strong></td>
<td>1987</td>
<td>224,217</td>
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<tr>
<td></td>
<td>1992</td>
<td>614,060</td>
</tr>
<tr>
<td></td>
<td>1996</td>
<td>982,798</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>1987</td>
<td>494,200</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>1,411,624</td>
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<tr>
<td></td>
<td>1996</td>
<td>2,330,173</td>
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<tr>
<td><strong>Volume ('000 tons)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>IMPORTS</strong></td>
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<td>22,688</td>
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<td></td>
<td>1992</td>
<td>49,675</td>
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<td>1996</td>
<td>74,579</td>
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<td><strong>EXPORTS</strong></td>
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<td></td>
<td>1992</td>
<td>34,335</td>
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<td></td>
<td>1996</td>
<td>42,485</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>1987</td>
<td>45,194</td>
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<td></td>
<td>1992</td>
<td>84,010</td>
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<td></td>
<td>1996</td>
<td>117,064</td>
</tr>
</tbody>
</table>
| **Source:** Department of Customs

NOTES: