

# TDRI

## Quarterly Review

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*After great efforts in trade liberalization in 2003, ASEAN countries are now taking the next step to the regional service liberalization, highlighting on transportation sector. However, as the regional transport market is mainly dominated by the hands of State enterprises at present, the issue on fair competition after the market opening will be a big question and need to be concerned. See related article on page 3.*

# Transport Liberalization and Competition Concerns in ASEAN\*

Deunden Nikomborirak\*\*

## 1. TRANSPORT LIBERALIZATION IN ASEAN

The Association of Southeast Asian Nations (ASEAN), established in 1967 by five countries — Indonesia, Malaysia, the Philippines, Singapore and Thailand, is one of the most successful regional groupings to date. The founding members of the Association were later joined by five more countries, namely, Brunei Darussalam (1984), Vietnam (1995) Lao People's Democratic Republic (Lao PDR) and Myanmar (1997) and Cambodia (1999).

The ASEAN region is home to a population of 537 million, half of which live on islands where the mode of transport is limited to air and sea. The Philippines and Indonesia are archipelagoes of more than 7,000 and 17,000 islands respectively. Brunei is also an island State. The remaining seven member countries are located on the Indochina Peninsula. Lao PDR is the only landlocked country in ASEAN.

ASEAN has made great efforts in liberalizing trade within the region under the ASEAN Free Trade Agreement (AFTA). In January 2003, tariffs between member countries were reduced to 0-5 percent for all products, except a few on the general exception and sensitive list of each member country. Unlike trade, however, regional liberalization in the service sector, including transport, has not been as forthcoming. This is because most member countries still maintain protectionist sentiments when it comes to the service sector. Also, less developed member countries are not prepared to open their service markets to more economically advanced member countries.<sup>1</sup> For example, a regional open-sky policy is likely to benefit major regional airlines with an extensive global network, such as Singapore Airlines and Thai Airways. On the other hand, more developed member countries are afraid of opening up the haulage industry to lower-wage neighboring countries for fear of price competition. For example, to import goods from Lao PDR into Thailand, Thai trucks are required to load the cargo from Laotian trucks at the border for transport to Bangkok. Laotian trucks cannot operate beyond the border with Thailand. On the contrary, goods

from or in transit through Vietnam to Lao PDR and vice versa can be transported by vehicles of either country.<sup>2</sup>

As a result, unlike AFTA, the ASEAN Free Trade Agreement on Services (AFAS) has made very little progress thus far. This is reflected in the fact that member countries' commitments made in AFAS are marginal to those made in the General Agreement on Trade in Services (GATS). In fact, commitments made in certain service sub-sectors are even fewer than those made in GATS.<sup>3</sup>

The lack of progress in the regional forum has prompted member countries to take their own initiatives in liberalizing their service sector according to their own preference. Singapore has made several open-sky agreements with many countries, including the United States. Cambodia, Lao PDR, Myanmar and Vietnam (referred to as CLMV countries), i.e., the more recent members of ASEAN, decided to have an air service agreement just among themselves. Indonesia and the Philippines' liberal policy toward foreign carriers in the early 1990s<sup>4</sup> or Thailand's liberalization of domestic air transport in Thailand in 2002<sup>5</sup>—can be attributed mainly to unilateral policies rather than regional efforts.

Recognizing the limitations of regional service liberalization, ASEAN has chosen to focus instead on establishing frameworks for cooperation and coordination in transport-related rules and regulations in order to facilitate intra-regional trade. This is because cumbersome border procedures and incompatible regulatory standards have proven costly to regional trade. The three framework agreements in transport therefore are targeted specifically at removing such regulatory hurdles.

- The ASEAN Framework Agreement on the Facilitation of Goods in Transit
- The ASEAN Framework Agreement on Multimodal Transport
- ASEAN Agreement on the Recognition of Commercial Vehicle Inspection Certificates for Goods Vehicles and Public Service Vehicles Issued by ASEAN Member Countries.

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The Framework Agreement on the Facilitation of Goods in Transit is aimed at facilitating goods in transit across member countries by simplifying and harmonizing transport and customs regulations. Only 5 out of 10 members have signed that Framework Agreement and none has ratified it in full.

The Framework Agreement on Multimodal Transport will make possible door-to-door delivery of goods in the member countries under a single document. The agreement specifies rules regarding the carriage of goods by ASEAN multimodal transport operators (MTOs), including the minimum qualifications to register as an ASEAN MTO. The framework agreement also specifies liability limits for MTO operators consistent with the United Nations Conference on Trade and Development/International Chamber of Commerce (UNCTAD/ICC) Rules for Multinational Transport and the United Nations Convention on Multimodal Transport 1980.<sup>6</sup> To date, nine members have agreed to the latest draft of the Framework Agreement and are in the process of seeking domestic clearance to sign.

Finally, the Agreement on the Recognition of Commercial Vehicle Inspection Certificates aims at establishing mutual recognition of the certificates issued by member countries in order to facilitate cross-border hauling services.

While ASEAN may be comfortable with the pace and approach taken to foster greater regional cooperation and coordination in transport rules and regulations, many members face external pressures to liberalize their domestic transport markets. In the near future, ASEAN countries are likely to be placed under great pressures to liberalize their transport markets through bilateral free trade agreements, in particular, those with large developed trading partners, namely, the United States, Japan and the European Union (EU). Vietnam also has a bilateral trade agreement with the United States, while Singapore has a more comprehensive bilateral free trade agreement (FTA) with the United States that covers many issues other than trade in goods and services. Thailand is negotiating one with both the United States and Japan. The race to sign FTAs shows that ASEAN countries do not want to be left out in the race to secure market access

to their major trading partners in light of a stalled multilateral forum.

## 2. TRANSPORT SECTOR LIBERALIZATION AND COMPETITION CONCERNS

While liberalization in the transport sector will no doubt foster greater competition in the usually highly protected industry, there are several competition concerns that may arise. Competition concerns may arise out of government policies or measures, such as State subsidies, discriminatory State procurement or distorted price regulations. Alternatively, competition concerns may also result from private practices—both foreign and local—such as predatory pricing, vertical restraints, and denial of access to essential facilities.

Specifically, foreign investors may be concerned about the lack of access to essential facilities, dominant incumbent's anti-competitive practices and State rules or policies that favor local or State-owned enterprises. Domestic service providers, on the other hand, are often concerned about restrictive or unfair trade practices that may be carried out by large multinationals with extensive financial resources. They are also cautious about subsidies that foreign service providers may receive from their governments, either directly or indirectly. Consumers are concerned about the possibility of market monopolization or collusive practices in an oligopolistic market.

The author believes that competition concerns are likely to be more pressing where State enterprises are present in the market. Many transport sub-sectors in ASEAN are still dominated by State enterprises, as can be seen in Table 1.

State ownership of airlines is common globally, although this is less true now in many developed countries. It is interesting to note that the only two attempts to privatize national airlines in both Malaysia and the Philippines were unsuccessful. The privatized airlines eventually faced bankruptcy, with the result that re-nationalization of the airline was necessary. Other ASEAN countries such as Thailand and Singapore prefer to privatize only a minority share in the State enterprises.

**Table 1 State-owned Airlines and Shipping Companies**

Country	State-owned Enterprise	
	Aviation *	Maritime **
Indonesia	• Garuda Indonesia	• Djarkata Lloyd Ltd.
Malaysia	• Malaysian Airlines	• Malaysian International Shipping Corporation
Philippines	• Philippine Airlines (PAL)	• Galleon Shipping
Singapore	• Singapore Airlines • Silk Air	• Neptune Orient Line
Thailand	• Thai Airways International	• Thai Maritime Navigation Co., Ltd.

Sources: \* Forsyth et al. (forthcoming).

\*\* Meyrick and Associates (2001).

ASEAN countries also got on the bandwagon in the late 1960s when developing countries established national shipping lines in fear of their growing dependence on powerful Western shipping lines that colluded in order to maintain high freight rates. However, as national shipping lines proved too costly to maintain, many developing countries decided to relinquish the State's ownership in maritime services. Against the global trend in privatization of State-owned shipping lines since the late 1980s, ASEAN governments have continued to hold on to their ownership in national shipping companies. As a result, most major airlines and shipping lines in ASEAN countries remain State-owned to date.

The fact that a large portion of the region's transportation sector remains in the hands of State enterprises does not bode well for competition for several reasons.

First, State-owned enterprises do not operate on a commercial basis. Their mandate is often linked to employment and expansion of the service network. Sappington and Sidak (2003) demonstrate—by means of mathematical proofs—that State-owned enterprises that are concerned less about maximizing profit and more about maximizing revenue<sup>7</sup> than private enterprises have stronger incentives to pursue activities that disadvantage competitors. These include pricing below costs, misstating costs and choosing inefficient technologies to circumvent restrictions on predatory pricing, i.e., technologies that require large fixed costs and small variable costs. It should be noted that the conventional “predatory pricing” test, which gives importance to the likelihood that the alleged violator would raise prices after the exit of the competitor, is not applicable to State enterprises whose objective is not to maximize profit at any point in time.

Second, a State-owned enterprise is likely to carry social service obligations. Cross-subsidization is the most common source of financing for service obligations in countries where financial allocation from the general budget is not market so that rents generated from the particular market can be used to subsidize social service obligations. This may give rise to competition problems if the latter is a competitive one. Cross-subsidization may lead effectively to predatory pricing in the “non-reserve” market, posing a barrier to entry.

Third, in cases where the State enterprise does not practice cross-subsidization, State subsidy, rather than predatory pricing, is a cause of concern. Subsidies may come in different forms such as direct operational subsidy, interest-free loans, loan guarantees or tax exemptions. State-owned enterprises also carry certain “special privileges” that are not linked to a subsidy. Such privileges may include exclusive rights to serve the government market (government procurement), exclusive rights to provide certain services, or even exemptions from certain State laws or regulations. Subsidies and special privileges both contribute to an unequal playing field between State and private operators. Where State enterprises are absent from the market, government subsidy schemes are likely

to be more transparent and non-discriminating as the government has no justification for favoring one private transport operator over another.

Fourth, the incumbent State enterprise—privatized or not—is likely to inherit a dominant position in the market from its monopoly days. Market liberalization in many cases is not preceded by a well-planned market restructuring that would help curb the market power of the incumbent. New competitors are thus likely to face abuse of dominance practices as the incumbent undoubtedly struggles for its market share. Where competition rules are effective, investors may expect prompt protection from the competition authority. Unfortunately, regulatory and competition regimes in markets dominated by State enterprises are likely to be relatively undeveloped.

Governments often regulate their State enterprises through the representation of their officials on boards of directors. Important business decisions such as pricing of public transport services or large-scale investment may require ministerial or cabinet approval, which can render the decision a political rather than economic one. Worse, in many cases, the State enterprise acts as both the ad hoc regulator and operator. They often derive their regulatory power from laws that were enacted way back when the State was the sole service provider in the market. Alternatively, in cases where State enterprises are empowered to hand out private concessions, they may secure their regulatory power through concession contracts.<sup>8</sup>

While new foreign entrants may be concerned about unfair State rules and regulations and restrictive practices of local incumbents, in particular State-owned ones, local incumbents also have their share of worries. Certain transport services, in particular logistic services such as trucking, cargo agency and freight forwarding, display economies of network and economies of scope. Small local service providers find it difficult to compete with large shipping lines or large logistic service providers with a global network. There are thus concerns about price transfer and unfair cross subsidization between different legs of the transport service. Local firms are also apprehensive about subsidies that foreign competitors may receive from their governments, directly or indirectly. In the absence of a capable and effective sector-specific regulatory authority or the general competition authority, there is very little protection that a domestic service supplier may seek.

The following section will examine in detail these competition concerns in the ASEAN countries.

### 3. COMPETITION PROBLEMS IN THE TRANSPORT SECTOR IN ASEAN

#### 3.1 State Subsidies

In the World Trade Organization, trade in goods is protected against subsidies in the General Agreement on Tariffs and Trade (GATT), but trade in services does not enjoy the same protection under GATS, unless the service

concerned is linked to an exported good. However, work is currently under way to collect information on types of service subsidies implemented in member countries so as to be able to categorize subsidies into those that are prohibited, not-prohibited but subject to retaliation, or allowed, similar to the agreement on countervailing duties in GATT.

In the absence of a multilateral discipline on service subsidies, most regional and bilateral trade agreements, too, do not include subsidies in the cross-border services chapter, be they North American Free Trade Agreement (NAFTA) or United States free trade agreements signed with Singapore and Chile in 2003. This implies that foreign versus domestic, or State versus private, service providers in the same market may not be competing on a level playing field where a State subsidy is present.

ASEAN countries have had their share of State subsidies in the aviation industry. Philippine Airlines (PAL), Garuda Indonesia and Malaysian Airlines (MAS) all have received large bailouts from the State in the past. In 1998, the Indonesian government provided the national airline with a US\$ 100 million loan guarantee and extended equity loans worth US\$ 400 million. In 2002, the government wiped out most of MAS's US\$ 2.4 billion debt after an unsuccessful privatization that led to renationalization of the national flag carrier. While the Philippine government had provided the privately owned national flag carrier with a large variety of subsidies including guarantees of all loans, debt write-offs, exclusive use of government-owned and -controlled airports, non payment of take-off and landing fees, and tax exemptions on all inputs and other operating expenses.

Indeed, airlines on the brink of bankruptcy worldwide also receive support from the State, including those in the United States and the EU. However, where there is free competition across borders, the issue becomes more sensitive as subsidies can put a national flag carrier ahead of that of other States. Hence, rules are required to ensure that State aid does not lead to distortions in competition. For example, the European Commission (EC) adopted a common guideline on State aid in the aviation sector. Aid for restructuring is allowed, but not for operations. It recommended that the aid should be:

- A one-off measure
- Linked to a restructuring plan, to be assessed and monitored by independent professionals appointed by the Commission
- Should not be used to buy new capacities.

It also recommended that the State needs to:

- Refrain from interfering in commercial decision-making by the airline
- Ensure that the interests of other carriers are not adversely affected.

Aldaba (2005) found that in the case of the Philippines, the dispensed State aid did not comply with

the EC guideline. Specifically, the debt write-off was undertaken in the absence of any conditionality with regard to firm restructuring such as capacity reduction, or future debt redemption. As a result, management was able to expend the cash at its own discretion. Moreover, the exclusive use of the new airport and the reduction in take-off and landing fees are clearly discriminatory and constitute a continual operational subsidy rather than a one-time restructuring subsidy. Many other transport services provided by State enterprises in ASEAN are also subject to State aid, in particular rail and public mass transportation.

Many ASEAN countries also provide subsidies relating to the construction and/or purchase of vessels, tax concessions for using domestically owned vessels and preferential tax treatment for seamen. The government of the Philippines offered preferential mortgage loans for financing construction, or for the acquisition or initial operation of vessels. Similarly, in 1979 Malaysia set up the Industrial Development Bank to provide low-interest loans to ship-owners, ship-builders and ship-repairers. In Singapore, ship-owners, regardless of nationality, have access to low-cost financing for the purchase of new vessels from Singaporean shipyards that match rates offered by other Asian countries. The scheme was designed to promote the development of Singaporean shipyards, rather than the expansion of the Singaporean fleet.

The Philippines, Singapore and Indonesia have schemes whereby shipowners/shippers using domestically owned vessels are given tax concessions, while Filipino and Thai seamen are exempted from the payment of income tax.<sup>9</sup>

To conclude briefly, in the absence of rules and guidelines governing State subsidies, ASEAN countries are likely to encounter competition problems in the liberalization of their transport industry, in particular the aviation and maritime segments, where State aid proliferates as each member country competes to promote its own industry's interests. Hence, a regional agreement to open up the transport industry will need to be complemented by preparatory work on laying rules and regulations governing State aid. Perhaps coordination and cooperation in containing the size or scope of competing subsidies catering to these services to prop up national providers ahead of others can better serve to save member states' money and, ultimately, benefit their economies as a whole.

### 3.2 Cross-subsidies

As mentioned previously, cross-subsidy constitutes the most convenient—albeit non-transparent—source of financing for social service provisions in developing countries. It is convenient because the government needs not allocate a budget to finance social services, but it is non-transparent because the actual cost of the subsidy required is not made explicit. In other words, as long as the operator, often State-owned, is financially

viable, the State need not be bothered about the size of the subsidy.

The presence of cross-subsidization has two implications. First, the new entrant market may face predatory pricing as a result of, or in disguise of, cross-subsidization undertaken by the incumbent. Second, competition may erode the availability of the subsidy required to maintain social or universal services. For example, the owner of PAL claimed that the airline's massive loss was a result of former President Fidel Ramos' decision to open up many international routes to foreign carriers. Singapore Airlines was even granted the fifth-freedom right to pick up passengers in Manila on the way to Seoul and Osaka. It claimed that these foreign carriers did not have to service unprofitable domestic routes.<sup>10</sup> As a result, all loss-making routes were eventually abandoned. Similarly, inter-city bus service providers in Malaysia complained that, as a result of many new licenses issued by the State authority, it was not able to sustain the provision of subsidized routes (Lee 2004).

In order to ensure both fair competition in the market and a transparent and effective subsidy scheme, an overhaul of the subsidy regimes in the transport industry is a prerequisite for market liberalization. Cross-subsidization will have to be replaced by a more transparent subsidy scheme, such as auctioning the delivery of the targeted social service. At the minimum, State or private enterprises that carry social service obligations will have to allocate costs to services that are provided on a social rather than commercial basis. Otherwise, the task of proving "price predation" will be impossible.

Phasing out existing cross-subsidy schemes in transportation is likely to be a herculean task as State-owned enterprises in the region are unaccustomed to allocating costs to the different services that they provide. Worse, in most cases it is not even clear what constitutes a "social service." Usually, all loss-making services are conveniently defined as social services without a thorough examination of the costs and benefits of providing and maintaining such services.

### 3.3 Distorted Price Regulations

Pricing is one of the most important factors determining a firm's competitiveness as well as competition in the market. Since transportation is a regulated industry, certain transport services are subject to price control, in particular when there is no competition in the market. In transport, however, there is intermodal competition. For example, rail transport may be a substitute for trucking for a particular type of bulky product such as cement and agricultural products. Similarly, planes and buses can be a substitute mode for long-distance passenger travel. Hence, it is important that the pricing of these competing modes of transport services are congruent to ensure a level playing field across modes. The problem may arise in cases where a particular mode of transportation is liberalized, but not so the other competing modes.

For example, the trucking or haulage industry tends to be more easily liberalized as it is a relatively contestable market. Other modes of transport, such as rail, sea and air, on the other hand, are more difficult as they display significant economies of scale or economies of network. Hence, freight rates for air, sea and rail modes of transport may still be subject to tight price control regimes, while those in the haulage industry are determined by market forces. If the regulated price is too low, the competing trucking business may find it difficult to make a profit.

Inconsistent pricing across different competing modes of transportation may threaten the commercial survival of private transport service providers in the market. For example, in Bangkok there are three different modes of public transportation: bus, elevated train and subway. Both the "sky-train" as it is popularly known and the subway compete with buses, but not with each other as their routes hardly overlap. However, in the future, their growing networks may overlap.

The pricing for the Bangkok sky-train service is based on "full cost-recovery" since the private concessionaire financed all components of the project, i.e., civil and operational components, without any government subsidy. The Bangkok subway tariffs, on the other hand, are based on "partial cost-recovery" as the infrastructure, i.e., the tunnels and stations is financed by the State, while the private investors financed only the rolling stock. These price conditions are clearly stipulated in the contracts. Finally, bus fares are determined by cabinet decisions, which makes fares political. The Bangkok Metropolitan Bus Authority does not receive any operational subsidy from the government, but is allowed to accumulate a large amount of arrears in its payments owed to the State-owned petroleum company.

Under such circumstances, the sky-train operator no doubt faces a serious price constraint, as any price increase could cause users to switch to lower-cost alternatives that receive a State subsidy.<sup>11</sup> Hence, consistency in pricing scheme across substitutable transport services is vital to ensure fair competition across competing modes of transportation. This requires coherence not only at the regulatory level, but also at the project financing level.

Another common problem with price regulation in the region is the setting of "price ceilings" and "price floors" for regulated transport services. While maximum and minimum prices may in theory prevent a dominant player in the market from setting monopoly or predatory prices, in practice, they tend to have adverse consequences in markets where there is effective competition. A price ceiling provides a convenient "target price" for a cartel, while a price floor can restrain price competition. For example, following liberalization in 1997, Malaysia's haulage industry faced intense competition as the number of firms increased from five in 1997 to about 60 firms in 2003, and container haulage rates fell between 20 to 40 percent. In order to end the destructive price war, the Container Hauliers Association of Malaysia and the Association of Malaysian Hauliers decided to stop giving

rebates and charge the full regulated price instead. Such behavior, known as “parallel pricing” resulting from “tacit collusion,” does not constitute a violation of competition law in most countries.

Similarly, before the liberalization of the domestic air transport services, price regulations worked in favor of the incumbent national carrier, Thai Airways, since smaller competitors may not price below those of the dominant incumbent. Only when the price floor was removed did domestic air fares fall 30-40 percent. The regulatory authority decided to keep the price ceiling, however.

To conclude, in the face of changing market structure and competition, ASEAN countries need to review their price regulations for the entire transport sector. Otherwise, regulatory failure can pose a major obstacle to effective competition in the market.

### 3.4 State-owned Enterprise “Privileges”

Besides subsidies of various forms, loss-making State enterprises are usually granted the right to operate in markets where they may generate “rents” to subsidize their social service operations. Thus, State-owned enterprises’ exclusive rights to provide a particular service are often linked to the cross-subsidy scheme.

It is common for State-owned enterprises to be given the opportunity to exploit the right to operate cross-border services that has been negotiated by the State. For example, Thai Airways is entitled to provide services on all international routes that Thailand had negotiated under the bilateral air transport agreement with other countries. Similarly, as part of the 1993 agreement on the transport of goods in transit between Lao PDR and Thailand, the Thai government authorized five carriers to undertake the transport of goods through Thailand to Lao PDR. Two of the five companies were the Express Transport Organization and the State Railway of Thailand, the State road haulage and railway companies respectively.<sup>12</sup> Usually, State-owned enterprises may also be exempted from certain laws and regulations to which private enterprises are subject. For example, the competition law in Thailand provides a blanket exemption for State enterprises defined as all enterprises in which the State holds a direct majority equity share. Fortunately, competition laws in Indonesia and Singapore do not provide such an exemption.

The exclusivity reserved mostly for State enterprises precludes competition from the private sector. For this reason, the Singapore-US bilateral free trade agreement contains a provision that prohibits corporatized State enterprises from enjoying any special privileges that other private competitors do not enjoy.

### 3.5 Market Concentration and Abuse of Dominance

Certain transport service markets, in particular, air transport, are dominated by the incumbent that is often State-owned. This is often the case because the opening

up of the market to competition is made without proper market restructuring that would help dissolve the dominant market power of the incumbent service provider in order to ensure effective competition in the market. As a result, newcomers may face all sorts of restrictive practices carried out by the incumbent so as to protect its market share. The problem is—in the absence of effective competition oversight—that some of these cases went unnoticed or unrecorded. In other cases, State regulation serves as a convenient means to pursue restrictive practices. As previously mentioned, price regulation may restrict rather than promote competition. It is not surprising that the regulatory body is captured by the State enterprise as both often belong to the same Ministry. In very small countries such as Lao PDR or Cambodia, they may even share the same two-floor building.

The only recorded competition case in transport is the case of air transport in Indonesia. In 2003, KPPU (Komisi Pengawas Persaingan Usaha or Indonesia Competition Commission), the competition authority in Indonesia, found Garuda, the national airline, in breach of the national competition law by requiring travel agents to use only the Abacus reservation system to reserve tickets. The authority ordered Garuda to terminate its exclusive agreement with Abacus and to withdraw the mandatory requirement for travel agents to use Abacus to reserve tickets.<sup>13</sup>

In markets where there is no dominant State or private enterprise in the market, there are risks that smaller local service providers may face unfair competition from large multinational competitors. This fear is most real in the road haulage industry where the market is traditionally a relatively contestable one. However, since the dawn of the container age, major shipping lines have become involved in the development of integrated logistic systems, providing door-to-door multimodal services, which includes land-based services such as road haulage. Local service providers fear that large shipping companies will collude to lower the price of land-based services, and use rents from maritime services where they operate as a cartel, to cross-subsidize the activity. In effect, land-based service providers will be “squeezed out” of the market through the high cost of freight and low revenue.

This fear is well founded. In 1998, the EC found that the Trans Atlantic Conference Agreement (TACA) had fixed prices for land transport, restricted the availability of individual service contracts between shipping lines and their customers and fixed freight forwarders’ commissions. The EC ruled that TACA had abused its dominant position since such practices did not fall within the ambit of the block exemption provided for liner conferences nor qualified for individual exemptions. As a result, TACA had agreed to adopt a “not-below-cost” rule, whereby land-based services would be priced not less than the direct out-of-pocket expense of the carrier. Similar practices were carried out by the North Atlantic Conference Agreement, but were abandoned once the EC and the US Federal Maritime Commission had begun inquiries.<sup>14</sup>

Another common concern of local small and medium-size road haulage operators is access to exclusive ports. As mentioned previously, shipping companies have invested extensively in ports in order to develop an integrated transport service. While private ports can be efficient and save the government resources, they may not be accessible to non-vessel operators. As a result, the government needs to ensure port accessibility to independent operators either by requiring exclusive private ports to share the facilities, or to operate a public port. A more efficient alternative would be to have the construction and operation of the port undertaken by parties that do not hold business interests in the shipping industry.<sup>15</sup>

In countries with strong regulatory and competition regimes, such restrictive or collusive practices will be restrained. Hence, smaller service providers or new entrants can take comfort in State protection against abusive business practices. The regulatory and competition regimes in most ASEAN countries are not yet well developed enough to deal with such regulatory complexities. The next section will discuss the capacity of the competition and regulatory regimes in the region.

#### 4. COMPETITION AND REGULATORY REGIMES IN ASEAN

As previously mentioned, markets that have traditionally been dominated by State enterprises are likely to have a relatively undeveloped regulatory regime. This is because the State is not accustomed to regulating private companies whose business information is protected by law. Long-standing reliance on State-owned enterprise non-proprietary business data and technical information for the purpose of regulation has rendered State authorities particularly weak when it comes to dealing with private businesses.

In ASEAN, the authority to regulate often rests with a ministerial body that oversees both policy and regulation. Independent and specialized regulatory bodies are an exception rather than the norm in ASEAN. Also, as mentioned previously, in some cases, State-owned enterprises are vested with the regulatory power, either *de jure* or *de facto*. For example, the regulation of air transport in ASEAN rests mostly within the purview of a ministerial authority such as the Department of Air Transport in the case of Thailand, the Civil Aviation Authority of Singapore, the Department of Civil Aviation in Cambodia, Myanmar and Brunei, the Ministry of Transport in the case of Malaysia and the Civil Aviation Administration of Vietnam. The Philippines is the only country that has a full-fledged regulatory authority known as the Civil Aeronautics Board, as can be seen in Table 2.

With respect to competition rules, only three ASEAN countries have a full-fledged competition law that contains all major substantive provisions regarding restrictive practices, namely, abuse of dominance, collusive practices and mergers: Thailand, Indonesia and Singapore. Thailand has a law only on paper; its implementation has been obstructed by the lobbying of big businesses and political intervention. Singapore's law was passed in late 2004 and became effective only at the beginning of 2005. Vietnam's law was passed in November 2004 and became effective in July 2005. Indonesia is the only country that has produced a few competition cases. The Philippines relies on the penal and civil codes to deal with anti-competitive practices. Work is under way to draft a competition law. Lao PDR's Decree on Competition came into effect in August 2004. While the Decree contains sections addressing issues of monopolies, collusive practices and mergers, the provisions are extremely brief with the result that it is unclear how the law will be implemented. Vietnam has not yet promulgated a competition law, but has been revising several versions of a draft law; the latest version is the eighth draft.

**Table 2 Regulation of the Air Transport Industry in ASEAN**

Country	Air Transport Regulatory Body	Competition Law and Authority
Brunei	Department of Civil Aviation	No competition law
Cambodia	Department of Civil Aviation	No competition law
Indonesia	Directorate of Air Transport	Competition law available
Lao PDR	Lao Transport Authority	Decree on Competition (effective August 2004)
Malaysia	Ministry of Transport	No competition law
Myanmar	Department of Civil Aviation	No competition law
Philippines	Civil Aeronautics Board (independent)	Article 186 of the Revised Penal Code, Civil Code RA 386, RA 186 (Act to Prohibit Monopolies and Combination in Restraint of Trade)
Singapore	Civil Aviation Authority of Singapore	Competition law available
Thailand	Department of Air Transport	Competition law available (but a block exemption is provided for State-owned enterprises and major provisions are not yet enforceable)
Vietnam	Civil Aviation Administration	Competition law available

Source: Data collected by author.

The remaining ASEAN countries do not yet have a competition law.

To conclude, regulatory and competition regimes in many ASEAN countries are ill-prepared to safeguard fair and effective competition in the market, both legally and institutionally. Dealing with competition issues, in particular those relating to pricing, can be extremely complex, both conceptually and practically. Determining costs of a private company, in particular a multinational one, will be much more difficult than that of a State-owned enterprise where the government has free access to all cost data.

## 5. CONCLUSION

ASEAN countries need to be cautious about opening up their domestic transport markets to international competition. Much preparatory work is required to ensure that liberalization will bring forth fair and effective competition in the market that will benefit their economies as a whole. ASEAN governments need to undertake the following major tasks before making market-opening commitments:

- Reform the accounting system of State-owned enterprises to ensure that costs are properly allocated for each service provided by the enterprise. Sappington and Sidak (2003) show that a State-owned enterprise that values revenue will have stronger incentives than a profit-maximizing firm to understate the marginal cost of production in order to relax a binding prohibition against pricing below cost. The same study also demonstrates that to dodge pricing regulations, State-owned enterprises are also more ready to adopt excessively capital-intensive technology to lower marginal or variable costs, while raising fixed costs. Hence, the regulatory burden is much more complex in the presence of a State-owned enterprise.
- Overhaul existing subsidy schemes to disentangle the complex web of ad hoc subsidies and to establish a transparent scheme that will guarantee efficient and fair allocation of State aid among different players in the market; any cross-subsidization between monopoly and competitive markets must be eliminated.
- Once cross-subsidy schemes are eliminated, State-owned enterprises are then no longer necessary and should therefore be eliminated as well.
- Undertake market restructuring before market opening in cases where the State-owned enterprise holds a dominant market share. The more contestable a market is, the less the regulatory burden will fall on the nascent regulatory or competition authority.

- Establish a comprehensive transport regulatory agency staffed with skilled personnel in the field. Price regulation of all modes of transport needs to be revised. The agency will also need to develop clear rules before making market-opening commitments, particularly in bilateral free trade agreements that provide for private-State arbitration. Non-transparent and unclear regulatory rules can be easily accused of being discriminatory or inconsistent with the minimum standard of treatment required by customary law. Hence, a host country government may face an endless series of expensive lawsuits if it is ill-prepared for the complexities of international competition.
- Promulgate a comprehensive competition law and ensure effective implementation to protect local small and medium-size land-based transport service providers.

In the event that ASEAN countries decide to liberalize their transport markets either through a regional agreement under AFAS or through bilateral agreements with large trading partners such as the United States and Japan, to ensure fair competition, the agreement should certainly contain provisions on State subsidies and mandatory cooperation between authorities in partner countries in cross-border competition issues such as those related to liner shipping.

## ENDNOTES

- <sup>1</sup> The level of economic development of member countries in the region is very diverse. In the year 2003, Singapore's GDP was US\$ 21,230, while that of Lao PDR was US\$ 10.
- <sup>2</sup> However, the administrative procedures for releasing transit goods can be cumbersome.
- <sup>3</sup> Stephensen and Deunden (2002).
- <sup>4</sup> According to Leinbach (2004), the foreign carrier with the widest access to Indonesia is a Silk Air, which is Singaporean.
- <sup>5</sup> Thailand now boasts of having at least seven domestic carriers.
- <sup>6</sup> Liability is a major issue since many ASEAN members are not signatories to international conventions that stipulate carriers' liabilities under different transport modes.
- <sup>7</sup> A proxy for employment and scale of service.
- <sup>8</sup> For example, the State-owned Bus Company Ltd. in Thailand derives its authority to set service and safety standards and regulate inter-provincial bus schedules from the terms and conditions stipulated in the concessions

(or franchise) it hands out to private operators. Since private operators are not allowed to operate the reserved routes, giving the State-owned enterprises exclusivity, they have no choice but to submit to the terms and conditions stipulated in the contracts.

- <sup>9</sup> Meyrick and Associates Pty., Ltd. (2001).
- <sup>10</sup> Aldaba (2005).
- <sup>11</sup> The private concessionaire expected to generate greater gains from property development. However, when the property bubble in Thailand burst in 1997, the operation faced a chronic operational loss that has continued to date.
- <sup>12</sup> Cabanius (2001).
- <sup>13</sup> The Asia Pacific Anti-trust Review 2004. Available at [http://www.globalcompetitionreview.com/apar/indo\\_overview.cfm](http://www.globalcompetitionreview.com/apar/indo_overview.cfm)
- <sup>14</sup> EC Competition Newsletter (1999).
- <sup>15</sup> This may also exclude investors that are foreign governments whose national port may be in competition with domestic ports.

## BIBLIOGRAPHY

- Aldaba, Refaelita. 2005. Development of principles for the implementation of subsidies and state aid. Draft report submitted to the ASEAN Secretariat as part of the Project No. REPSF 04/008: Strategic Directions for ASEAN Airlines in a Globalizing World.
- Cabanius, Philippe, and Kammoune Bouaphanh. 2001. Review of progress in the developments of transit transportation systems in Southeast Asia. Paper presented at UNCTAD's Meeting of Government Expert from Landlocked and Transit Developing Countries and Representatives of Donor Countries Financial and Development Institutions, New York, 30 July – 1 August.
- Findlay, Christopher, and Carsten Fink. (forthcoming). Trade in Transport and Distribution Services. Draft January 2005.
- Forsyth, Peter, John King, Cherry Lin Rodolfo, and Keith Trace. (forthcoming). Preparing ASEAN for the Open Sky (Draft). Submitted to the ASEAN Secretariat.
- Lee, Cassey. 2004. Competition Regulation in Malaysia. Accessible at [http://www2.jftc.go.jp/eacpf/06/6\\_05.pdf](http://www2.jftc.go.jp/eacpf/06/6_05.pdf)
- Leinbach, Thomas R. 2004. Air transport in ASEAN: progress toward market and regional integration. Paper presented at 2004 EWC-KOTI Conference, Hawaii, 16-17 August 2004. Available at [www.koti.re.kr/project](http://www.koti.re.kr/project)
- Meyrick and Associates Pty., Ltd. 2001. Facilitation of International Shipping Project: Volume 1: Impact of Maritime Policy Reform. Report prepared for APEC-TWG. Available online.
- "Revised TACA." *EC Competition Newsletter*, October 1999: 24.
- Sappington, David E. and Gregory J. Sidak. 2003. "Competition Law for State-Owned Enterprises: Incentives for Anti-competitive Behaviour by Public Enterprises." *Review of Industrial Organization* 83.
- Stephensen, Sherry, and Deunden Nikomborirak. 2002. "Regional Liberalisation in Services." In *Services, Trade Liberalisation and Facilitation*, edited by Sherry Stephensen et al. Asia Pacific Press at Australian National University.
- Vitasa, Honorio. 2004. Maritime and inter-modal transport market integration in ASEAN. Paper presented at conference entitled "A Design for Northeast Asian Transport Market Integration: The Cases of ASEAN and NAFTA," organized by the East-West Center and the Korea Transport Institute, Honolulu, Hawaii, August 16-17, 2004.
- Wood, David. 1999. "Recent Commission Decisions Concerning the Scope of Group Exemption for Liner Conferences." *EC Competition Newsletter* 1 (February). Available at <http://europa.eu.int/comm/competition/publications/cpn/cpn1999i.pdf>



# Meet Demands of the Logistics Industry

**Narong Pomlaktong**  
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**Ruttiya Bhula-or\***

**T**he development of human resources (i.e., executives and staff workers alike) in the logistics industry is a crucial factor that contributes toward increasing the nation's competitive industrial capacity. According to a study by the National Economic and Social Development Board (NESDB),<sup>1</sup> it is estimated that between 2005 and 2009 demand for labor in logistics will increase annually by 22,000 on average. Based on "value chain/web analysis," the current knowledge and skills of labor/staff falls well below the expectations of employers in the logistics field, especially of those working in "supply chain management," a group that has a major impact on the logistics industry.

There are currently seven universities offering courses directly related to logistics and four institutes offering short training/seminar sessions. Combined, these educational institutions produce about 2,000 staff a year for the logistics industry. Although there has been an increase in the number of logistics-related curricula, there are still certain limitations on human resource/staff development. Specifically, they are (1) lack of educational institutions that focus directly on producing logistics staff, particularly those related to operational techniques, (2) shortage of good quality labor, specifically with regard to critical knowledge/skills and communications technology, and (3) lack of professionals and funding for research and development to ensure sustainability.

From evaluating the demands for labor both in quantity and quality as well as taking into consideration the needs and limitations of various educational institutions that develop staff for the logistics workforce, a strategy for developing qualitative human resources that meets the demands of the logistics industry can be outlined. This strategy comprises three main objectives: (1) developing a knowledge base, (2) developing skills/expertise, and (3) developing institutions and professionals. These goals

can be reached through the implementation of short-term and long-term approaches, as will be highlighted in the concluding section of this article.

## 1. SIGNIFICANCE OF HUMAN RESOURCES IN THE LOGISTICS INDUSTRY

Logistics<sup>2</sup> plays a critical role in the advancement of national trade and contributes toward economic progress. It also increases the competitive capacity of industries, which increases the nation's industrial competitiveness. Human resources are a crucial factor in ensuring the efficiency and effectiveness of logistics.

Nevertheless, in the past, Thailand has encountered key problems pertaining to labor involved in logistics, that is, a shortage of staff with knowledge, expertise and know-how directly related to the logistics field. This is mainly because there are only a few educational institutions that offer courses on logistics, and none that offer courses at the vocational level. In addition, logistics workers in general have problems with the English language and oral/written communication skills compared with rival neighboring countries. There is also a shortage of staff that are knowledgeable and experienced in communications technology.

From this set of problems, it is necessary to continue developing the quality of workers in order to respond to the demands of the industrial sector (especially in supply chain management, whose role is to plan and administer strategies throughout the entire system). Therefore, this study is an evaluation of logistics labor that pass through educational institutions and short training courses held by various organizations in 2005. The assessment is based on the compilation of documents and interviews with key informants in the logistics industry.

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## 2. QUANTITY OF LABOR DEMAND IN THE LOGISTICS SYSTEM

In 2005, vehicle drivers comprised the largest group of logistics labor, with 110,356 workers. This was followed by administrative and service staff, who made up the second largest group with 68,911 workers; next were manual laborers at 32,575 workers, and executives at 26,896. All other groups combined equaled 65,245 (Figure 1).

Demand for labor in coming years was predicted under the assumption that annual growth for logistics will be about 6.0-6.76 percent. Using this figure, it is estimated that the demand for logistics labor will increase on average by 22,000 people per year for the next four years.

## 3. QUANTITY OF LABOR DEMAND IN THE LOGISTICS INDUSTRY

### 3.1 Current Situation of Human Resources in the Logistics Industry

Although there is a tendency that labor supply will increase to meet the growing demands of the domestic and international markets, the fundamental problem lies in qualitative rather than quantitative labor shortages. While educational institutions have been offering relevant degree

courses as well as short training courses, it is still insufficient to meet market expectations. Moreover, as yet no courses are aimed at producing staff at the vocational level.

Experts and executives in the logistics industry agree that knowledge and technical expertise play an integral role in increasing the nation's competitive capacity. These skills include (1) knowledge and expertise in communications technology, and (2) English-language communication skills as well as knowledge of a third language such as Chinese or Japanese. The Thai labor market still lags behind regarding these skills.

Furthermore, most workers involved in logistics, particularly those at the lower levels that comprise the largest group of laborers, still possess insufficient knowledge about the general framework of the logistics industry and supply chain management systems, which leads to ineffective operational and management procedures.

In addition, skilled public sector administrators who implement specific logistics-related policies still lack a thorough understanding of the commercial significance of logistics and the management of the supply chain system. This causes inefficiencies such as delays at customs and, in certain cases, the public sector making inappropriate decisions owing to a lack of standardized decision-making guidelines.

Figure 1 Estimated Labor Demand for Logistics, 2005-2009



Source: TDRI (2004) Study on strategic planning for expanding human resource capacity to increase industrial competitiveness.

Labor demand for the next four years will increase on average by 22,000 annually.

Estimates calculated using data surveying average work rate of population every one and three years from 1994 to 2003, as follows:

$$\ln THT_t = -39.889 + 0.016 \text{ time} + 0.516 \ln YT_t - 0.133 DT$$

$THT_t$  = Accumulated weekly hours of logistics workers

$YT_t$  = Actual output of transportation and telecommunications

$DT$  = 1 in the year 2000

Annual growth rate for logistics industry estimated at 6.0-6.7 percent.

### 3.2 Evaluation of Critical Knowledge/Skills Level for Staff Based on the Value Chain of Logistics Model

The evaluation of labor demand based on the value chain model (Figure 2) highlights the importance of qualitative labor analysis by dividing expertise into critical knowledge and critical skills. This model helps to evaluate the necessary skills required for each logistics position, through revision of international case studies as well as brainstorming sessions by key informants.<sup>3</sup>

The evaluation of expectations for critical knowledge/skills and actual knowledge/skills for each position in the value chain is depicted through the web analysis method. This is the **median** of both the workers' expected and actual critical knowledge/skills from a scale of 5 (highest level of expertise) to 0 (no expertise).

The criteria for evaluating critical knowledge and skills sets of each occupational position on the value chain is assessed using the Table 1.

Figure 2 Value Chain of Logistics

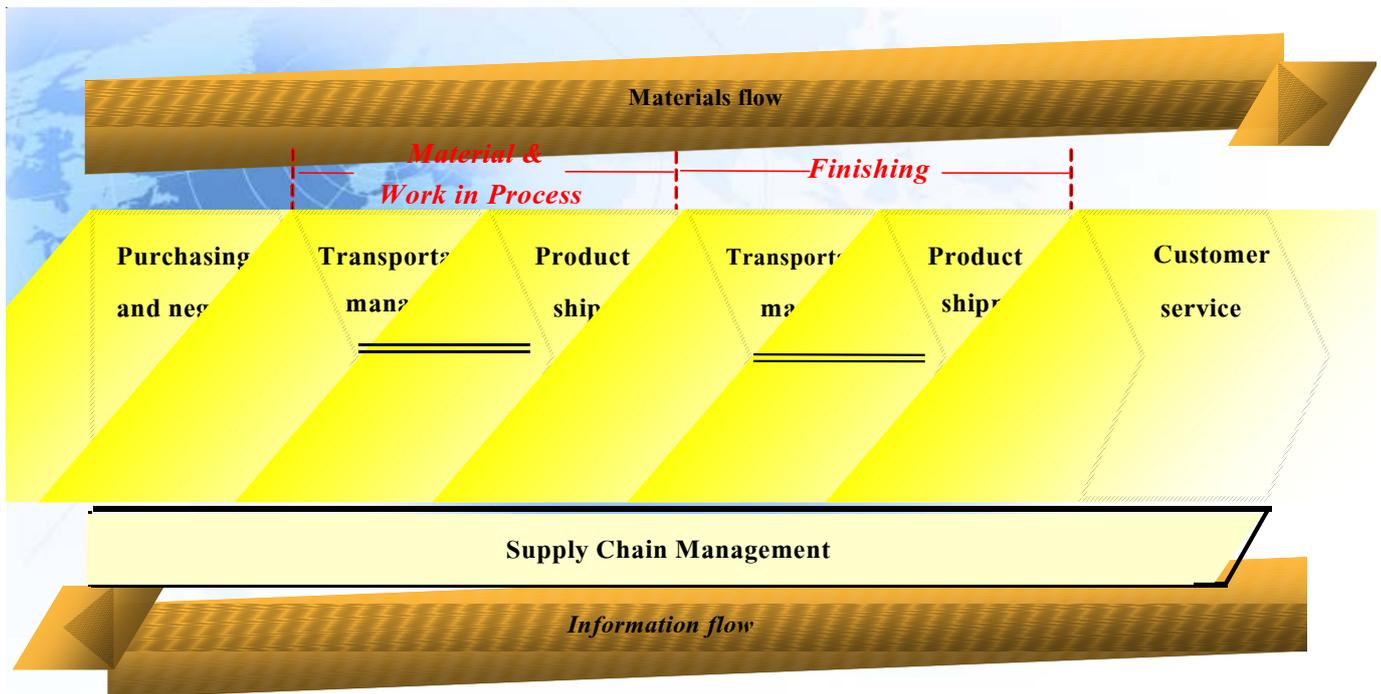


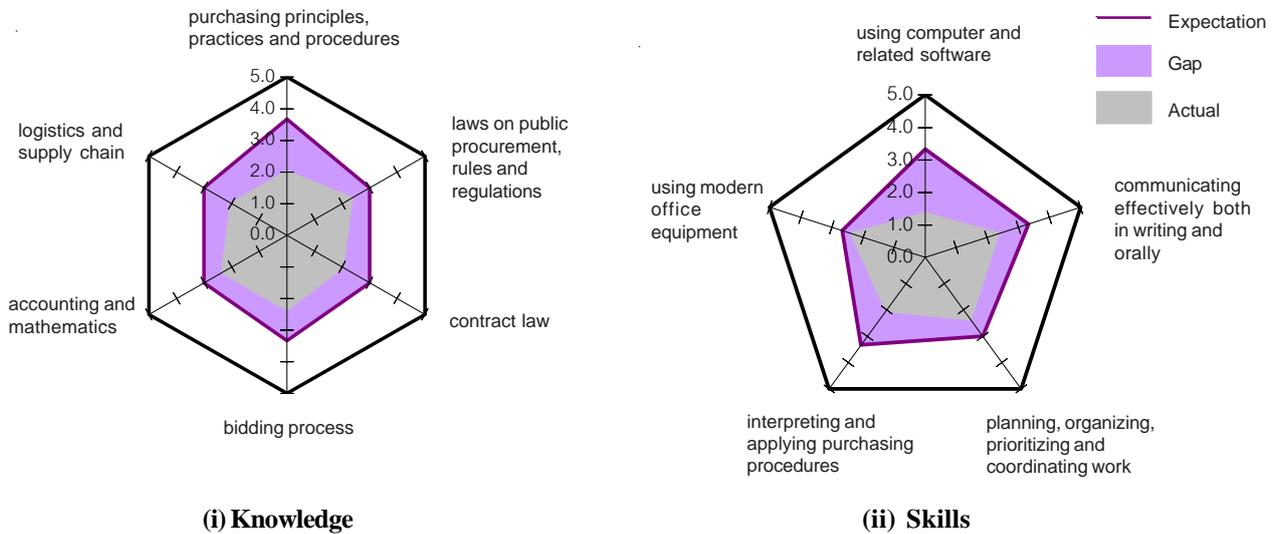
Table 1 Criteria for Knowledge/Skills Evaluation

CRITICAL KNOWLEDGE SET		CRITICAL SKILLS SET	
<b>Level 1</b>	Basic knowledge in each job aspect	<b>Level 1</b>	Able to solve day-to-day problems and carry out operations according to manuals/instructions
<b>Level 2</b>	Extensive knowledge in each job aspect	<b>Level 2</b>	Able to implement plans and solve complex problems both individually and as part of a team
<b>Level 3</b>	Extensive knowledge plus ability to link knowledge bases, broad understanding of strategic operations at the organizational level	<b>Level 3</b>	Able to teach and transfer specific skills to others
<b>Level 4</b>	Extensive and in-depth knowledge to meet standardized industry levels	<b>Level 4</b>	Able to improve and increase efficiency of operational procedures without advice from others
<b>Level 5</b>	Expert extensive and in-depth knowledge, ability to create internationally recognized innovations	<b>Level 5</b>	Able to act as advisor to others in improving effectiveness of operational procedures

This method of qualitative evaluation aims to determine the gap between the industry’s expectations and

the actual worker’s expertise. The web analysis results for each staff group are as follows:

**1. Purchasing Officers**



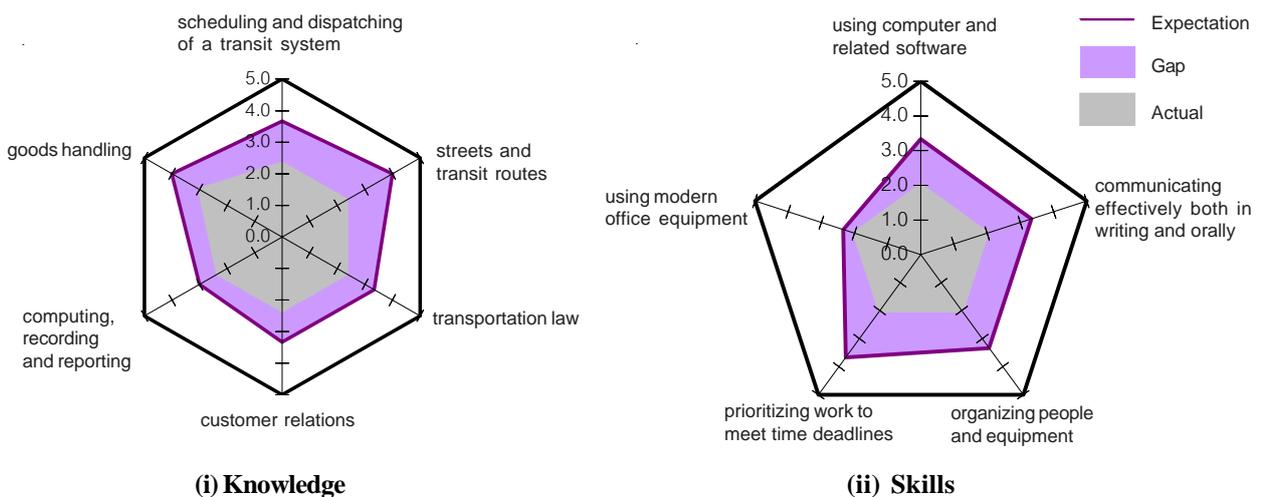
Source: Survey data.

For this position, critical knowledge of purchasing principles, practices and procedures fall well below the expectations of the industry’s qualitative demands, while lack of computer software expertise as well as inability to operate e-commerce programs, which have become integral in today’s logistics business, tops the critical skills agenda.

**2. Transportation Officers**

This category comprises four positions: (1) dispatcher and transportation scheduler, (2) transportation vehicle driver, (3) crane operator and (4) freight forwarder.

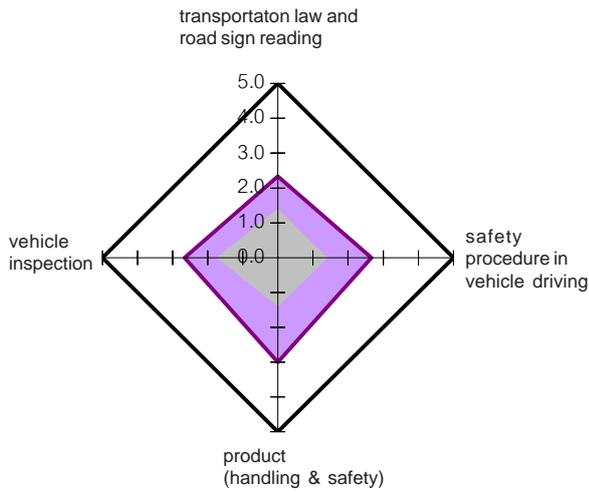
**- Dispatcher and Transportation Scheduler**



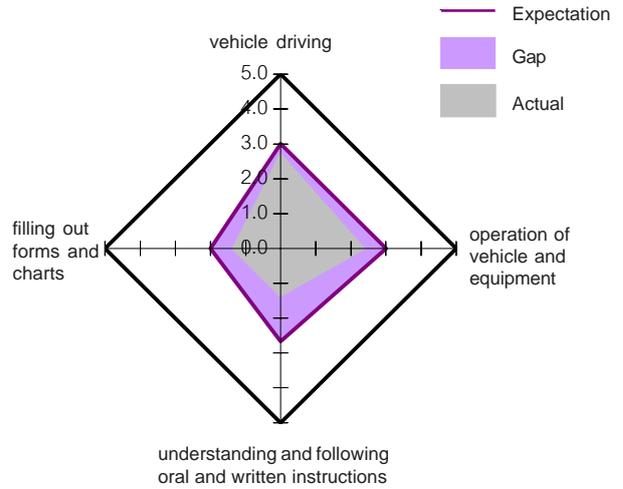
Source: Survey data.

Critical knowledge of scheduling and dispatching transit route choices falls well below the expectations, while key skills that need to be propped up include effective oral and written communication and prioritizing work to meet deadlines.

- *Transportation Vehicle Driver*



**(i) Knowledge**

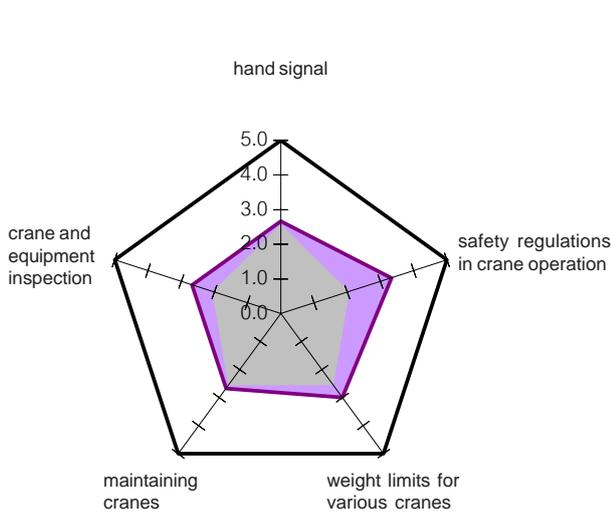


**(ii) Skills**

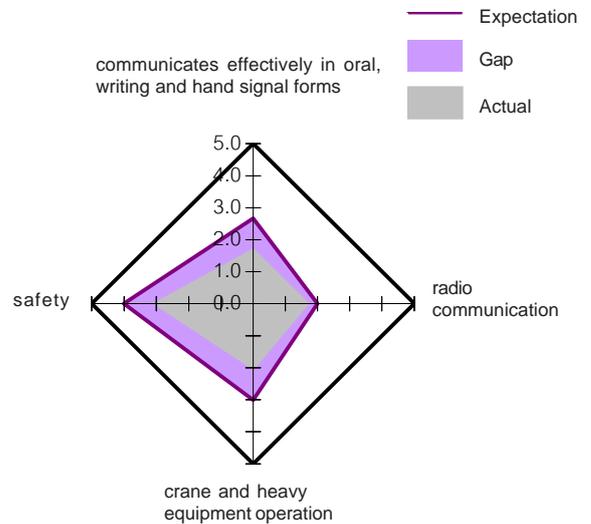
Source: Survey data.

Industry demands indicate that safety procedures (both in vehicle driving and handling of products) are higher than the current actual knowledge possessed by vehicle drivers. Employers also expect vehicle drivers to have better understanding of oral and written instructions as well as carrying the orders out with precision.

- *Crane Operator*



**(i) Knowledge**

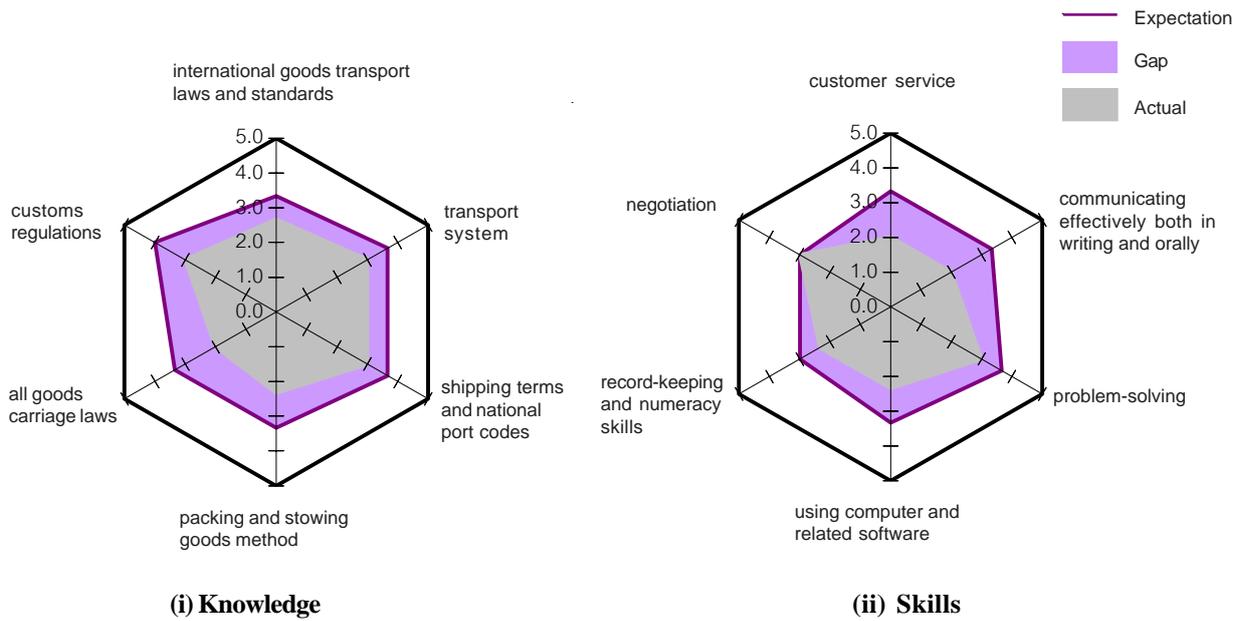


**(ii) Skills**

Source: Survey data.

Once again, better knowledge of safety regulations is the most demanded qualitative aspect that employers expect. Nevertheless, it is important to note that most other critical knowledge aspects do satisfy the demands of employers. As for critical skills, safety issues, on which employers place highest priority and expectations, again tops the list of concerns.

- Freight Forwarder

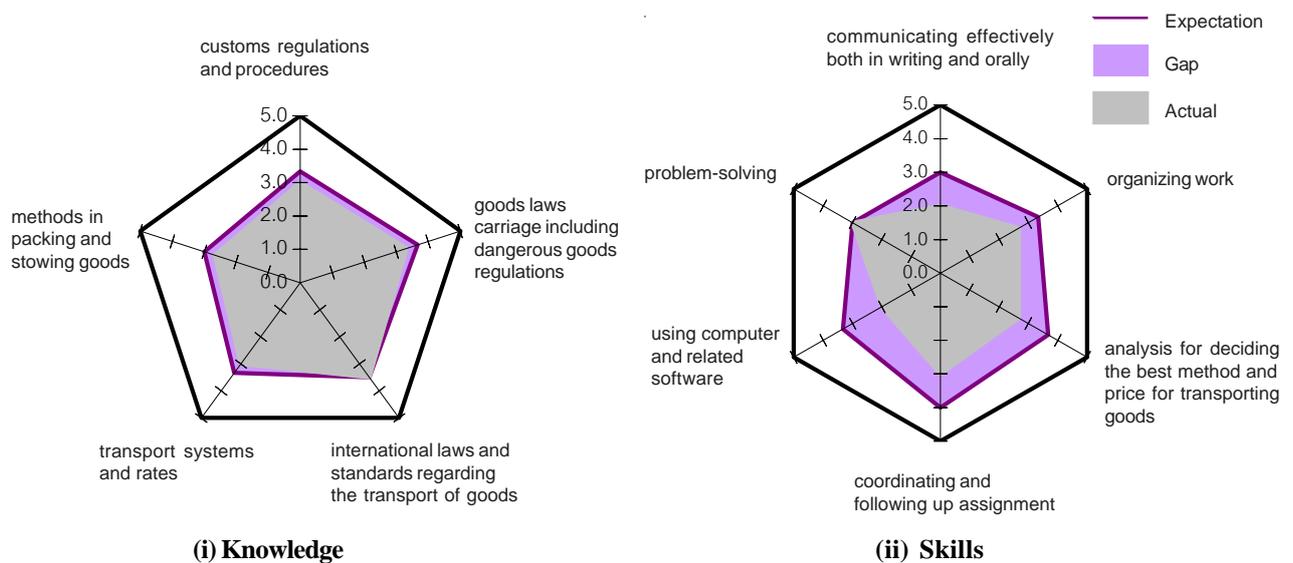


Source: Survey data.

Employers have high expectations for freight forwarders in many critical knowledge aspects and critical skills, from knowledge of international transport and customs laws to record-keeping and problem-solving skills. While negotiations skills satisfactorily meet the qualitative demands of employers, there is still much room for improvement in knowledge of all goods carriage laws as well as customer service and written/oral communication skills.

3. Export Officers

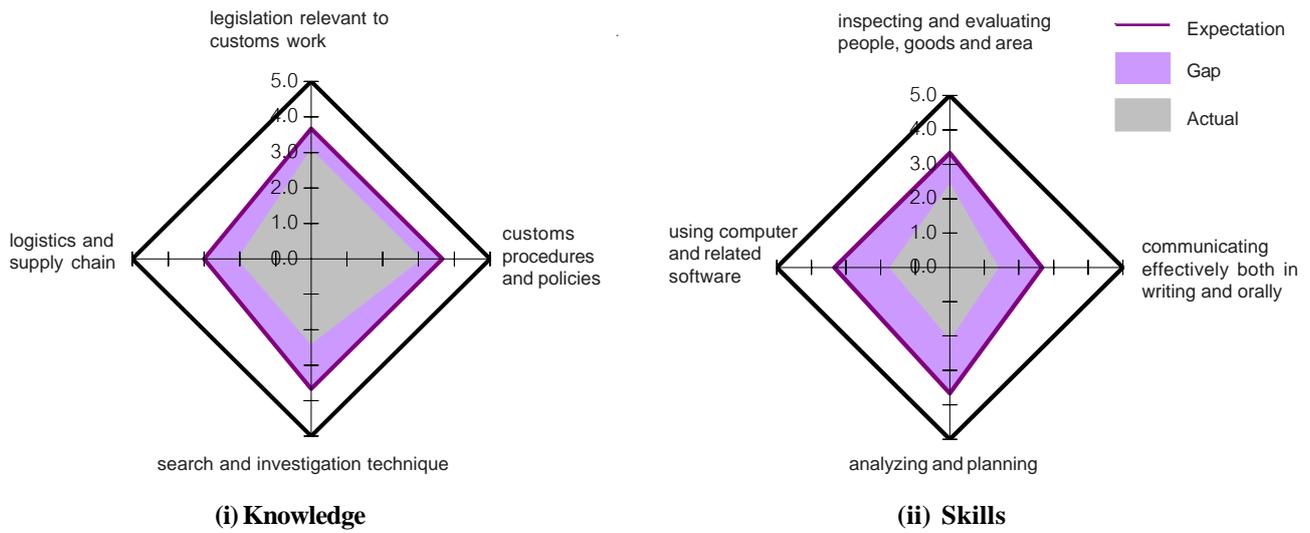
- Shipping Agent



Source: Survey data.

Most employers feel that the actual levels of the employee’s knowledge satisfactorily meet most critical knowledge aspects required for this position. However, there could be increased training for computer skills in order to operate related software and thus raise the efficiency of shipping operations.

- Customs Officers

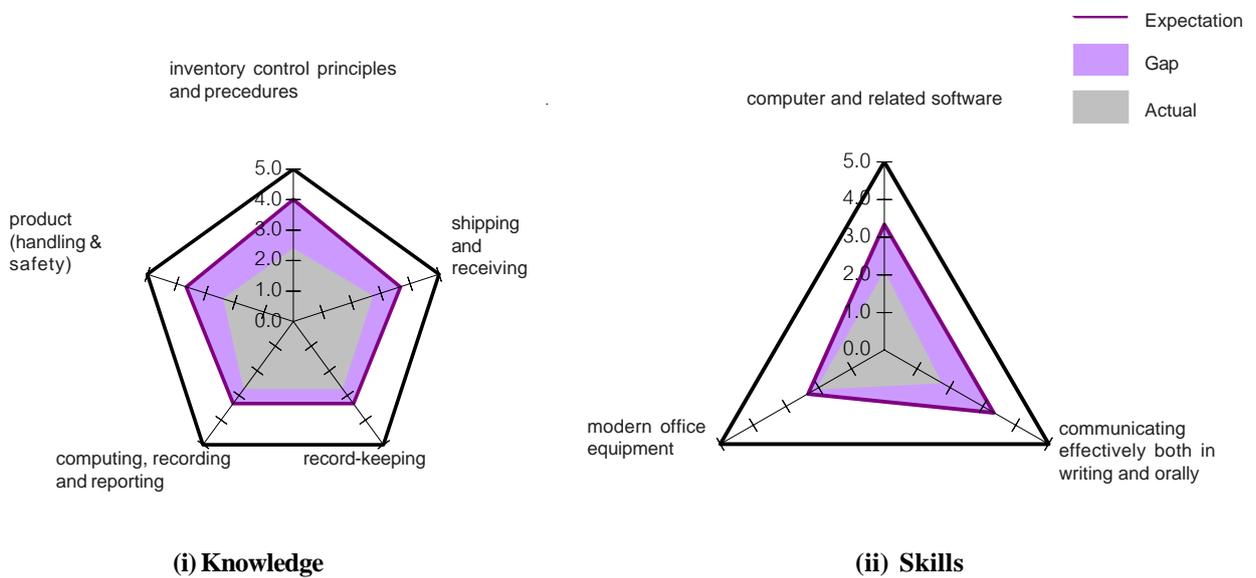


Source: Survey data.

Employers would like customs officers to increase awareness of critical knowledge required, specifically knowledge related to logistics and supply chain management. As for the critical skills set, computer, communication and analytical and planning skills fall well below the employers’ expectations.

4. Inventory-Handling and Storage Officers

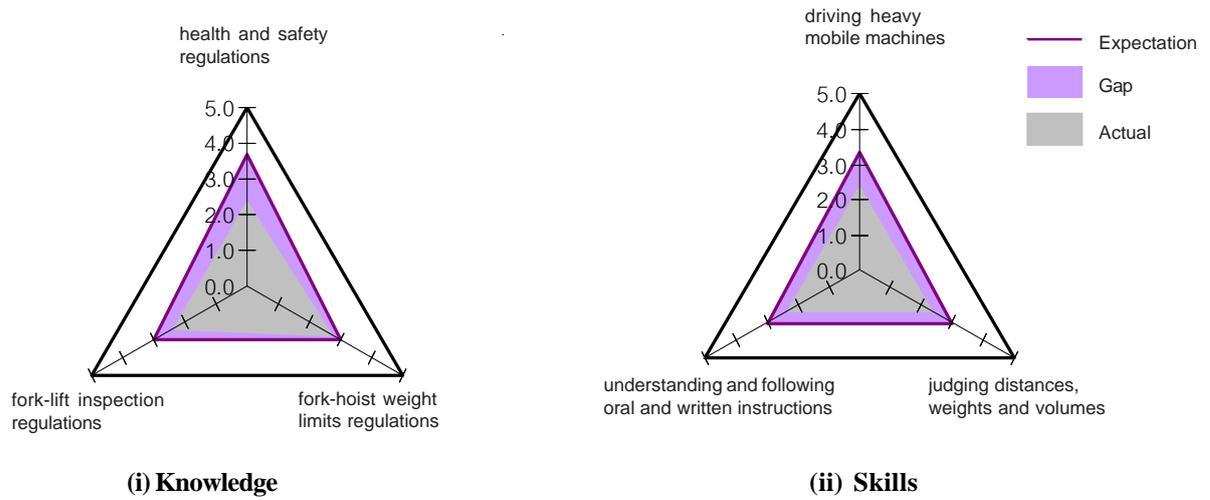
- Warehouse and Inventory Control Officer



Source: Survey data.

Aspects of critical knowledge that do not meet expectations include inventory control principles and procedures as well as handling and ensuring the safety of products. Critical skills that need improvement are computer and related software utilization as well as effective written and oral communication skills.

- Goods-Handling Officer

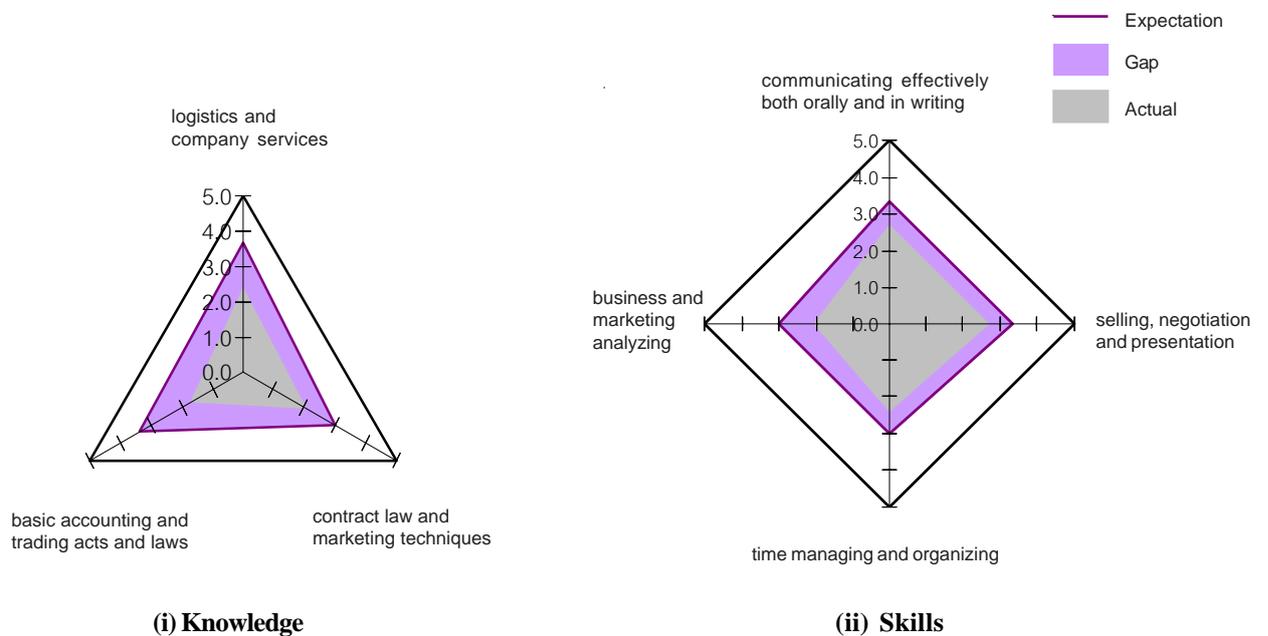


Source: Survey data.

It is expected that goods-handling officers would have a higher level of critical knowledge about health and safety regulations, but actual staff knowledge is far lower than expectations. Apart from driving heavy mobile machines, there is not much discrepancy in expected and actual levels of critical skills.

5. Marketing and Customer Service Officers

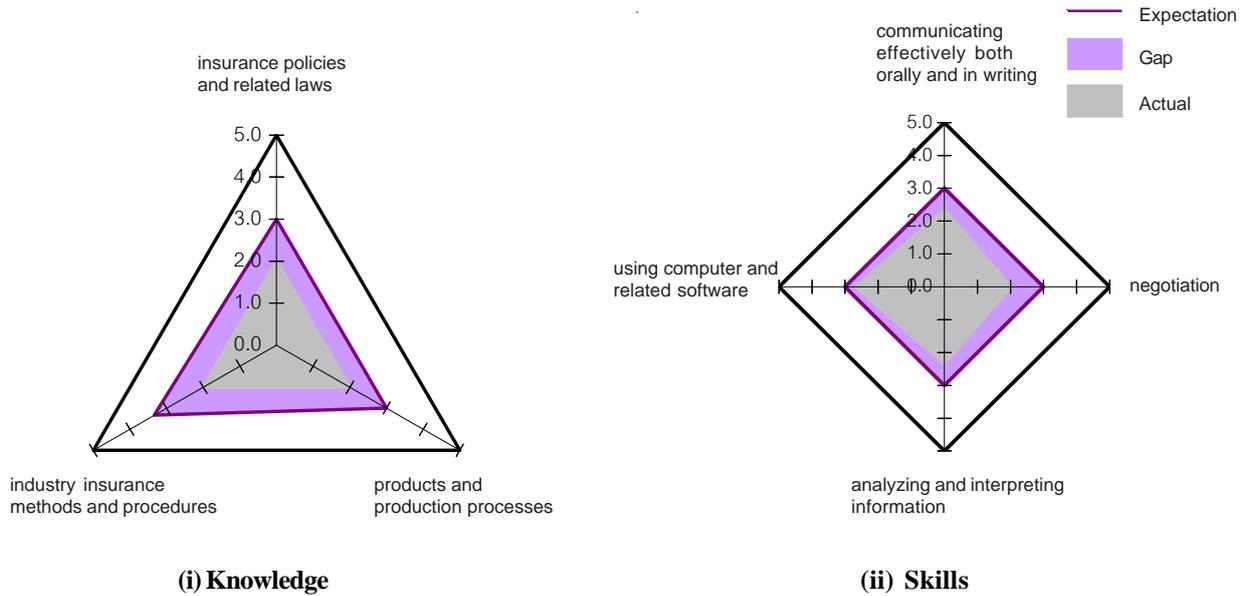
- Sales Representative



Source: Survey data.

There is a large gap in expected and actual levels of critical knowledge regarding logistics and company services, basic accounting and trade law as well as marketing techniques. The gap is less for critical skills, with the exception of business and marketing analytical skills.

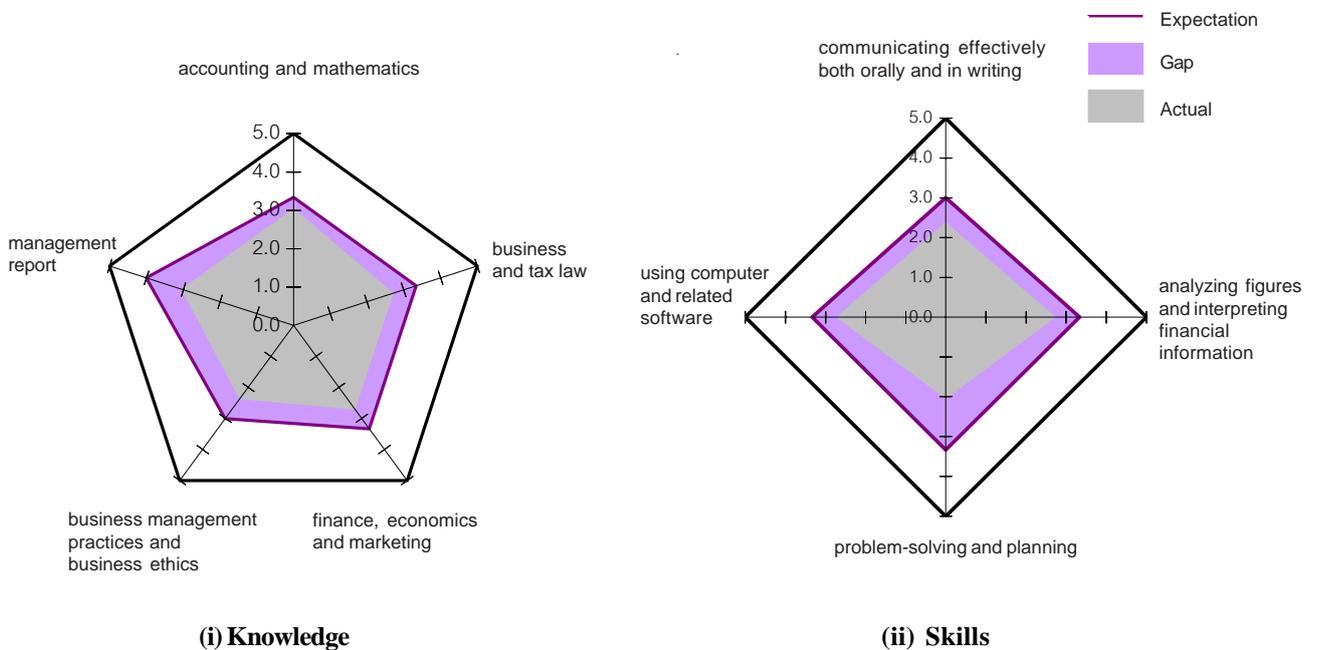
- Customer Service Representatives



Source: Survey data.

While critical skill sets, apart from negotiation, are near satisfactory, expectations still exceed actual critical knowledge in all areas, most specifically insurance methods and procedures.

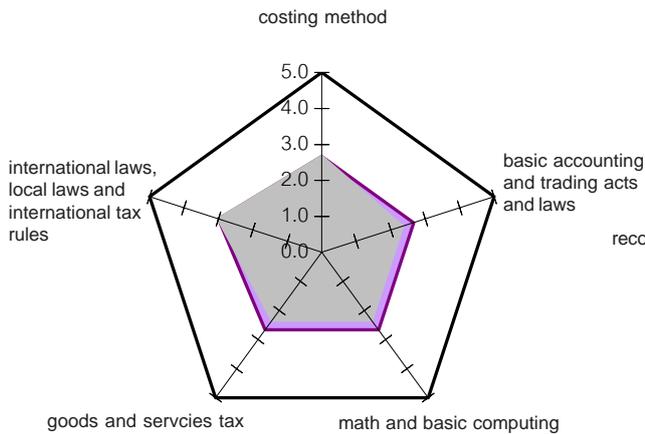
- Financial Accountant



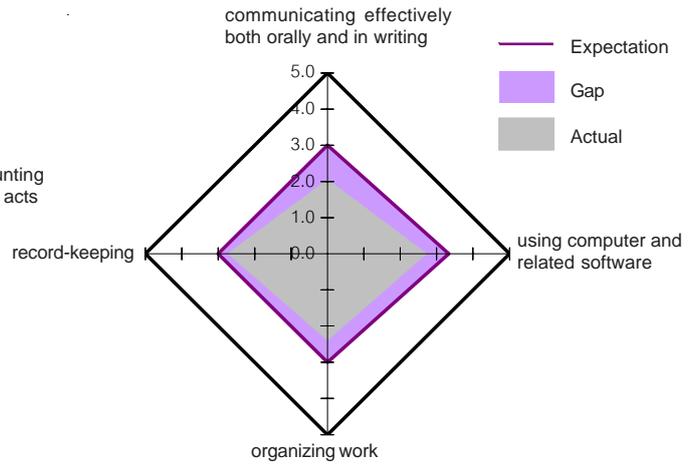
Source: Survey data.

Employers have high expectations for financial accountants to have critical knowledge of management reporting, yet actual knowledge falls below these expectations. Problem-solving and planning are the critical knowledge skills that are in most need of improvement, according to employer’s feedback.

- Accounts Clerk



(i) Knowledge

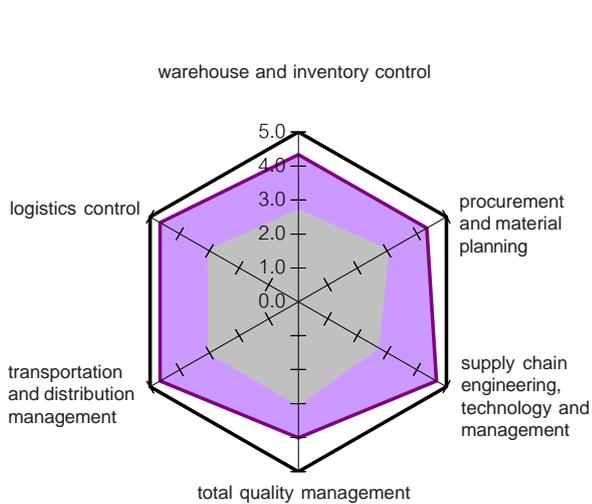


(ii) Skills

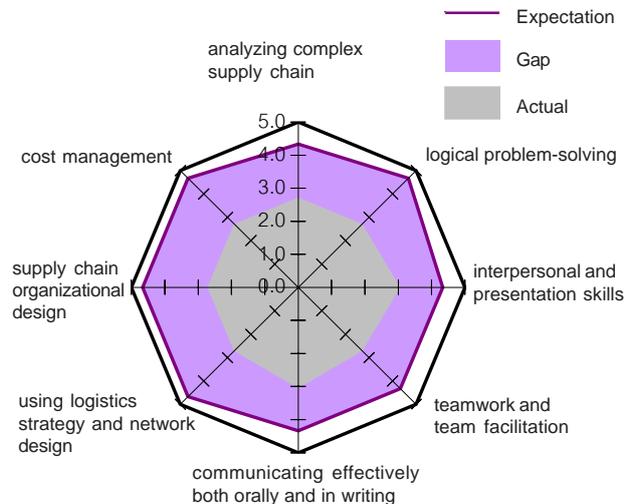
Source: Survey data.

There are nearly no discrepancies between the expectations and actual critical knowledge levels. Nonetheless, slight gaps still exist for critical skills, especially effective oral and written communication skills.

6. Supply Chain Consultants



(i) Knowledge



(ii) Skills

Source: Survey data.

Employers have the highest expectations for both critical knowledge and critical skills sets in all relevant areas required. They expect employees in the field to possess in-depth knowledge and expertise in their specific tasks, as well as possess the ability to manage, consult, analyze, communicate and facilitate operational procedures as well as implement innovative ideas while upholding internationally accepted standards. Nevertheless, employees in this area seriously fail to meet the high expectations in every department, including critical knowledge of warehouse, inventory and logistics control, procurement and material planning, transportation and distribution management as well as supply chain engineering. Critical skills that fall well below par include analyzing complex supply chain models, problem-solving, interpersonal and presentation skills, teamwork and facilitation, linguistic and communication skills, logistics design and network design, supply chain organizational design as well as cost management.

The evaluation of knowledge/skills expectations and actual expertise for each occupational position based on the value chain of logistics can be summarized in Table 2.

#### 4. LABOR SUPPLY

##### 4.1 Quantity of Labor Supply

It is estimated that workers with sufficient competencies<sup>4</sup> to enter the logistics system will increase from 240,850 in 2004 to 272,329 in 2009 (Figure 3).

From these estimates, it is clear that there is sufficient quantitative labor supply to meet industry demands, as the number of students in relevant fields are sufficient to meet the industry's growth and increasing labor demand (refer to Figure 1 in Labor Demand section). Therefore, students can be attracted to the logistics business through the creation of incentives, the standardization of a proper career path in logistics, while at the same time providing them with a better understanding of career advancement prospects in the area of logistics.

##### 4.2 Developing Staff from Educational Institutions

Seven universities currently produce staff to enter the logistics workforce, at an annual rate of 332 workers. In the future, this number will increase to 457 per year.

Also, four institutions offer short training courses that currently produce 1,953 workers per year, with future estimates at 2,771 workers. Combined, these educational institutions currently produce workers that can directly enter the logistics industry at a rate of 2,285. This number is expected to grow to 3,228 in years to come.

Each educational institution provides different knowledge and skill bases according to the know-how and expertise of that institution.

Those that place emphasis on developing knowledge bases and technical know-how can be divided into two groups:

(1) Institutions that emphasize business-related knowledge that derives know-how from business administration, compiling documents, business communication and utilization of office accessories required for business management, and

(2) Institutions that place emphasis on technical expertise that derive know-how from technical subjects such as science, engineering, systems design and technical equipment used in the transportation industry.

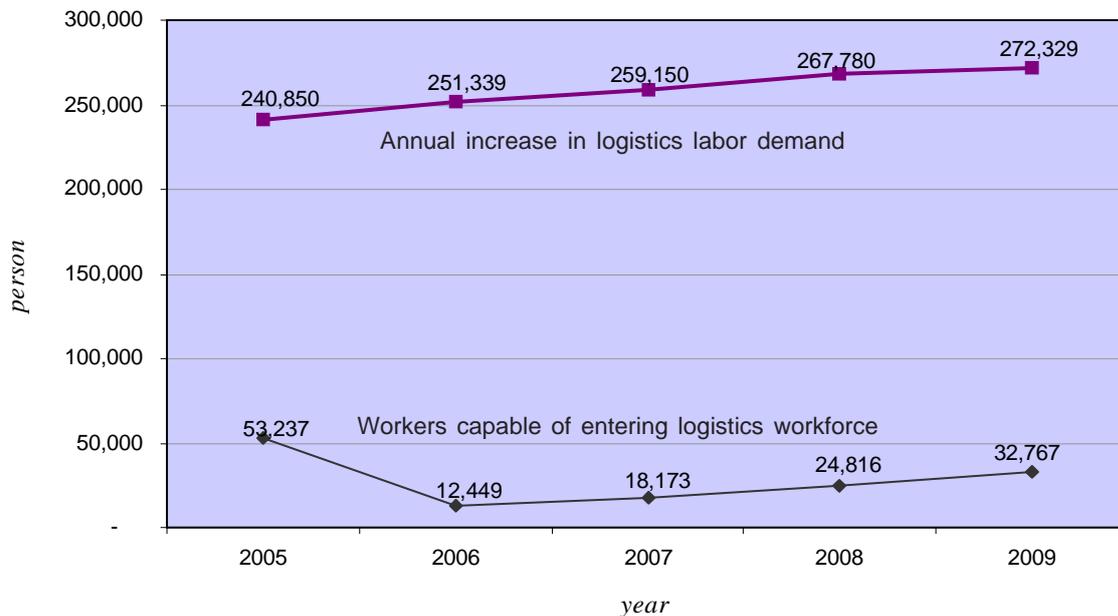
Institutions that provide the development of vocational staff and thus place more emphasis on developing key skills can also be divided into two groups: (1) Institutions that develop management skills and (2) those that hone operational skills. When considering both knowledge-base institutions and skills-based ones, four types of institution can be classified, as in Box 1.

**Table 2 Summary of Discrepancy between Expectations and Actual Key Knowledge/Skills**

Area	Critical knowledge gap	Critical skills gap
Purchasing officers	Wide knowledge gap in areas of purchasing principles, practices and procedures	Discrepancy in ability to use relevant software programs, especially in e-commerce
Transportation officers	Knowledge about scheduling and dispatching transit routes, safety regulations and procedures, international transport and customs law needs to be propped up	Wide skills gap in computing, effective oral and written communication, prioritizing work to meet deadlines, customer service
Export officers	No notable gap between expectations and actual knowledge <sup>i</sup>	Computing, communication, analytical and planning skills fall below expectations
Inventory-handling and storage officers	Insufficient knowledge to meet demand in inventory control principles and procedures, product handling as well as health and safety regulations	Computing and software utilization as well as effective written and oral communications skills need improvement
Marketing and customer service officers	Wide qualitative knowledge discrepancy in logistics and company services, basic accounting and trade law as well as contract law and marketing techniques	No notable gap between expectations and actual skills <sup>i</sup>
Supply chain consultants	Skills fall well below expectations in nearly all areas, namely knowledge of warehouse, inventory and logistics control, procurement and material planning, transportation and distribution management as well as supply chain engineering, technology and management	Skills fall well below expectations in all areas, including analyzing complex supply chain models, problem-solving, interpersonal and presentation skills, teamwork and facilitation, linguistic and communication skills, logistics design and network design, supply chain organizational design as well as cost management

Note: <sup>i</sup> Sufficient knowledge/skills levels to meet expectations in most areas. In areas of discrepancies, the gap is narrow.

**Figure 3 Estimates of Annual Increase in Labor Demand Compared with Workers Having Sufficient Capabilities to Enter the Logistics Workforce between 2005 and 2009**



### Box 1 Classification of Institutions Providing Logistics-related Knowledge/Skills

#### Group 1

*Institutions that emphasize business-related administrative knowledge*

Institutions in this group offer courses at the bachelor's and master's degree levels, with a knowledge-base in business administration, namely, (1) Master of Science in Supply Chain Management, Assumption University (ABAC), (2) Master of Engineering, Logistics Management, University of the Thai Chamber of Commerce (UTCC), and (3) Master of Commerce, International Transportation Management, Thammasat University (TU). Teaching emphasizes management and administrative aspects of business. The Federation of Thai Industries, in collaboration with the International Trade Center under the supervision of the United Nations Conference on Trade and Development (UNCTAD) and the World Trade Organization (WTO), provides short courses on Supply Chain Management to meet international standards.

#### Group 2

*Institutions that emphasize business-related operational knowledge*

Institutions in this category provide training courses for staff workers who are in the logistics system in order to increase work efficiency. They are (1) Institute of Transportation, Chulalongkorn University (CU), (2) International Transport and Business School (ITBS), and (3) Thai National Shippers' Council (TNSC); offer short courses on subjects such as transportation law, file management, insurance and strategies as well as organize

various seminars. In 2006, TNSC will offer mid-length courses for executives, using the Certificate in Logistics and Transport (CITL) curriculum.

As for the bachelor's degree level, Suranaree University is setting up a course on Logistics Management, which aims to combine operational know-how together with actual work in the industrial sector.

#### Group 3

*Institutions that emphasize technical-related management skills*

Most educational institutions in this category possess expertise in technical aspects such as science, engineering, commercial shipping and multi-disciplinary subjects, namely, (1) Master of Science in Logistics Management, Chulalongkorn University (CU), (2) Master of Science, International Transportation Management and Logistics, Burapha University, and (3) Master of Science in Logistics Management, King Mongkut University (Thonburi).

#### Group 4

*Institutions that emphasize technical-related operational skills*

This group of institutions emphasizes the development of staff that possess technical skills and expertise, such as the Logistics Engineering course, University of the Thai Chamber of Commerce (UTCC), which grounds its curriculum in Industrial Engineering, focusing on system design in order to decrease capital investment cost, in addition to strategic management skills.

From the diagram below (Figure 4) it can be seen that there are very few institutions that offer courses emphasizing technical-related operational skills. This is reflected in the discrepancy between expectations and actual skills in the logistics industry. The institutions in this category are ones that should provide vocational courses for, say, vehicle drivers, who may then be able to meet expectations in aspects such as English-language communication and product handling and safety.

The dark-shaded area in Group 2 (business-related operational knowledge) and Group 3 (technical-related management skills) represent knowledge and skills that cannot be learned academically, but must be accumulated through actual work experience.

The light-shaded area in Group 1 (business-related administrative knowledge) and Group 4 (technical-related operational skills) represent those that receive academic qualifications directly relevant to the field of logistics, such as business administration. These workers range from Chief Executive Officers to laborers such as drivers, who must also have an understanding of the logistics industry.

## 5. CURRENT LIMITATIONS OF LABOR IN THE LOGISTICS SYSTEM

Currently, the major limitations that hinder prospects for developing workers for the logistics field are:

1. *Lack of educational institutions that develop graduates directly related to the logistics industry:* There are very few institutions that offer courses directly related to logistics, especially for lower-tier laborers and staff that are educated up to the vocational level. Although there are currently several short training courses, it is still not enough to meet market demands.

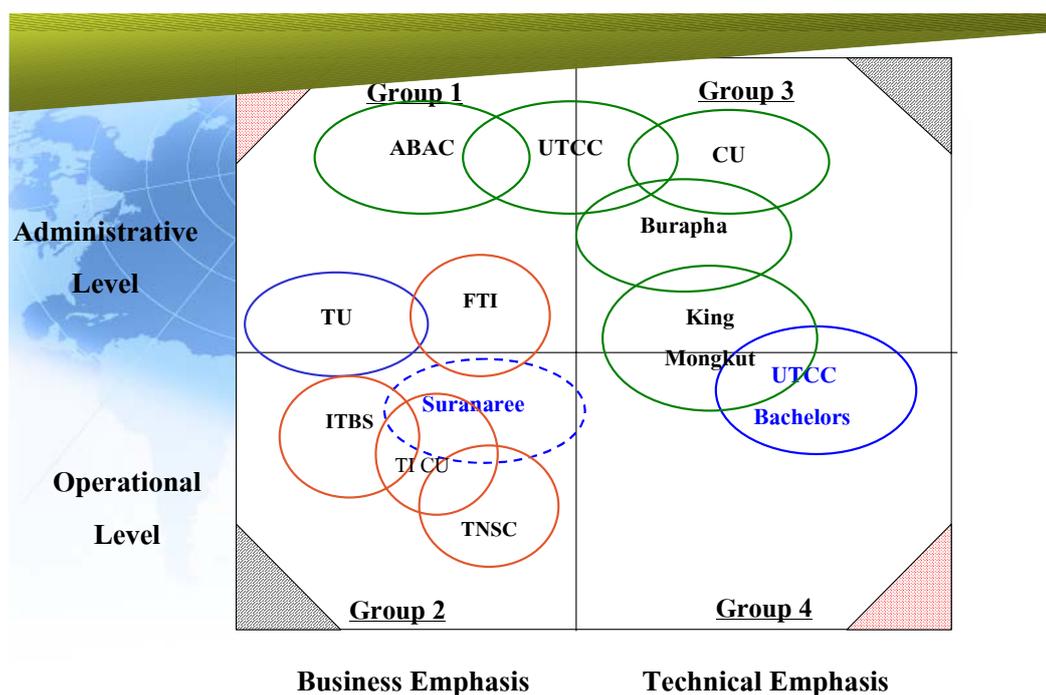
2. *Lack of qualitative labor:* There is a shortage of workers who possess knowledge and expertise in communications technology, while many laborers still do not have adequate English-language communication skills. Many still lack an understanding of the logistics industry as a whole, particularly the functions of supply chain management. This leads to ineffective operations and inefficiency throughout the entire system.

3. *Shortage of professionals who have direct knowledge and relevant experience on logistics but lack of research and development (R&D) funding:* This shortage is due to the fact that the logistics field in business is relatively new; hence, there are few who previously studied in this area. Apart from this, there is insufficient coordination between the public and private sectors in sponsoring R&D that can be applied to the logistics system.

## 6. STRATEGY FOR QUALITATIVE HUMAN RESOURCE/LABOR/STAFF DEVELOPMENT TO MEET DEMANDS OF THE LOGISTICS INDUSTRY

From evaluating both quantitative and qualitative demand (labor requirements) and supply (educational institutions that develop staff) in the logistics industry, as well as the current limitations as discussed above, it can be concluded that the process of developing qualitative labor to meet demands in the logistics industry must be accelerated. The research team recommends three strategic areas that should be further developed: (1) knowledge-bases, (2) skills/expertise, and (3) educational institutions and professionals. There should be a short-term and long-term time frame for implementation as shown on page 25.

Figure 4 Course Curriculum of Educational Institutions



Strategy	Knowledge-base Development	Skills/expertise Development	Development of Educational Institutions/Professionals
Short-term Strategy	<ul style="list-style-type: none"> <li>- Increase the capacity of training courses, specifically in areas directly related to logistics, by improving the short training curriculum.</li> <li>- Increase understanding and awareness of the logistics industry for executives and laborers alike, via mid-length training sessions.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve the curriculum and teaching methods for foreign languages.</li> <li>- Support the establishment of courses and training sessions.</li> <li>- Encourage coordination between educational institutions and employers in initiating hands-on internship projects for students.</li> <li>- Organize basic operational skills-related training sessions for fresh graduates.</li> </ul>	<ul style="list-style-type: none"> <li>- Public sector sponsorship for educational institutions that offer courses directly related to logistics.</li> <li>- Request foreign assistance to organize exchange programs between experts.</li> <li>- Create a standardized curriculum and linkage between courses for the sharing and distribution of know-how/expertise.</li> </ul>
Long-term Strategy	<ul style="list-style-type: none"> <li>- Develop educational institutions that open courses directly-related to logistics, placing particular importance on logistics laborers.</li> </ul>	<ul style="list-style-type: none"> <li>- Educational institutions should set up logistics research centers and offer consultation to business and industrial sectors while using know-how gained through operations to develop professors, students and logistics employees.</li> </ul>	<ul style="list-style-type: none"> <li>- Continuously increase competencies of professionals and education staff in theoretical, technical and operational aspects via processes such as granting scholarships for further study in courses directly related to logistics.</li> <li>- Establish an institute to standardize the logistics profession by registering/licensing occupational permits.</li> </ul>

## ENDNOTES

- <sup>1</sup> NESDB commissioned TDRI to conduct this study in 2004.
- <sup>2</sup> The Council of Logistics Management (CLM) defines “logistics” as the process of planning, implementation and control of the movement of goods and services to and from destination, as well as the storage and maintenance of products, services and relevant information in an effective and efficient manner, from the initial stage of production to the final consumer destination according to the needs of the customer.
- <sup>3</sup> Analysis results taken from interviews and brainstorming sessions by key informants in logistics systems to determine important staff members in the system’s value chain, based on labor demand four years from now (in 2009).
- <sup>4</sup> Defined as those educated in academic fields that offer basic logistics-related knowledge relevant to work in the logistics system.

## REFERENCES

- Assumption University. 2005. “MSc Supply Chain Management.” Graduate School Website. <http://www.grad.au.edu/acad.php> (10 October)
- Chulalongkorn University. 2005. “Master of Science Program in Logistics Management” (Thai version). The Graduate School. <http://www.grad.chula.ac.th/Interdepts/logistics.htm> (16 November)
- Suranaree University of Technology. 2005. “Master of Management Program in Management Technology” (Thai version). School of Management Technology. <http://www.sut.ac.th/ist/MT/index.htm> (10 October)
- Thai National Shippers’ Council. 2005. “Seminar and Training Topics” (Thai version). Graduate School. [http://www.tnsc.com/TrainingAll.aspx?tabs\\_id=3&sp-id=101](http://www.tnsc.com/TrainingAll.aspx?tabs_id=3&sp-id=101) (6 October)
- Thailand Development Research Institute (TDRI). 2004. *Research Project for the Strategic Implementation of Human Resource Development Towards Enhancing Competitiveness of Industries, Final Report*. Bangkok: TDRI. (in Thai)
- Thammasat University. 2005. “Department of International Transportation Management” (Thai version). Faculty of Commerce and Accountancy. <http://www.bus.tu.ac.th/it> (16 November)
- Transportation Institute, Chulalongkorn University. 2005. “Training courses organized by the Transportation Institute, Chulalongkorn University throughout the Year 2005” (Thai version). <http://www.tri.chula.ac.th/wwwroot/training/Train/Plan46New.htm>
- University of the Thai Chamber of Commerce. 2005. “Bachelor of Engineering in Logistics Engineering” (Thai version). School of Engineering. <http://www.utcc.ac.th/engineer/logistics/utcc.htm> (10 October)