



14

INTERNATIONAL DISTRIBUTION

- 14.1 GLOBALIZATION OF THE WORLD ECONOMY
 - 14.1.1 Trends Accelerating Globalization
 - 14.1.2 Barriers to Globalization
 - 14.1.3 Summary
 - 14.2 GLOBALIZATION STRATEGIES
 - 14.2.1 Global Strategy Development
 - 14.2.2 Strategy Development Summary
 - 14.3 CHANNEL STRATEGIES
 - 14.3.1 Exporting
 - 14.3.2 Licensing
 - 14.3.3 Joint Ventures
 - 14.3.4 Direct Ownership
 - 14.3.5 Other Methods of Entry
 - 14.4 MANAGING GLOBAL TRADE NETWORKS
 - 14.4.1 Establishing Global Distribution Channels
 - 14.4.2 Global Marketing Issues
 - 14.4.3 Global Trade Management (GTM) Systems
 - 14.5 INTERNATIONAL PURCHASING
 - 14.5.1 Overview
 - 14.5.2 Advantages of International Sourcing
 - 14.5.3 Countertrade Purchasing
 - 14.5.4 International Purchasing Management Process
 - 14.6 INTERNATIONAL TRANSPORTATION AND WAREHOUSING
 - 14.6.1 International Transportation: Opening Issues
 - 14.6.2 Surface Transportation
 - 14.6.3 Ocean Transport
 - 14.6.4 International Air Transport
 - 14.6.5 International Warehousing
 - 14.7 SUMMARY
- DISCUSSION QUESTIONS
- REFERENCES

The original version of this chapter was revised. An erratum to this chapter can be found at https://doi.org/10.1007/978-1-4899-7578-2_16

Electronic supplementary material The online version of this chapter (doi:[10.1007/978-1-4899-7578-2_14](https://doi.org/10.1007/978-1-4899-7578-2_14)) contains supplementary material, which is available to authorized users.

When business historians look back at the period of the last 10 years of the twentieth century and the first decades of the new millennium, one of the most salient developments will be the emergence of the global economy. For several decades after the Second World War, companies rarely ventured outside their own national boundaries. While some of the world's largest corporations, such as Coca-Cola, Ford Motor Company, and Procter & Gamble, had historically engaged in a significant international trade, governments were fearful of exporting technologies, core skills, product, and wealth that might drain national resources in the face of the Cold War. In many cases, enormous markets, such as Eastern Europe, Russia, and China, were closed behind a seemingly impenetrable "iron curtain." Today, the Cold War has long been part of history. Some of the world's most vibrant economies, such as China, Brazil, and India, have emerged from behind once closed societies to engage billions of people in global commerce in the search for individual as well as national growth and well-being. The advent of connective technologies have enabled companies at the furthest ends of the earth to network their ideas and their businesses in real-time, accelerate the growth of the international marketplace, and integrate the world's economic activities.

Fundamental to sustaining this growth is the establishment of efficient and cost-effective global supply chain management strategies and processes. Issues relating to regional trading-blocks, collaborative partnerships, global materials and product sourcing, cost-effective storage, speedy transportation, and new concerns, such as risk management and environmental sustainability, have become the foremost frontiers of competitive advantage. As the world's industrialized nations intensify their search for new markets and new sources of products and services abroad, supply chain management has become increasingly pivotal for success. Nations that have substandard systems of roads, water-ways, rail, poorly trained labor pools, inadequate distribution support systems, and protectionist governments will find their entrance into the global marketplace on an equal footing difficult with an increased chance of being by-passed by global strategists. As globalization expands, it will be the responsibility of supply chain planners to design the logistics networks of the future, provide superlative customer services at the lowest cost, and engineer the sourcing, production, inventory control, warehousing, and transportation functions that will propel the global economy into the twenty-first century.

Exploring global trade and distribution is the focus of this chapter. After considering the economic, competitive, and supply chain trends fueling globalization in the early twenty-first century, the chapter proceeds to a discussion of the major features of an effective globalization strategy. At this point, the chapter explores the four major global strategies: exporting, licensing, joint ventures, and direct ownership. Critical to the success of a channel strategy is the effective management of the international distribution network. Topics discussed in this section are establishing the global channel network (service/cost elements and configuration of the trade network); global marketing issues (department organization, products and services offered, terms of trade, trade contracting, pricing, financials, and export/import documentation), and implementing a global trade management (GTM) system. An analysis of international purchasing and product importing forms the basis of the next section. Topics discussed are advantages of international sourcing, countertrade purchasing, and the international purchasing management process. The chapter concludes with a review of the transportation and warehousing requirements of global channel management.

14.1 GLOBALIZATION OF THE WORLD ECONOMY

The *APICS Dictionary* [1] defines globalization as

The interdependence of economies globally that results from the growing volume and variety of international transactions in goods, services, and capital, and also from the spread of new technology.

In today's business climate, companies cannot help but look beyond national boundaries to acquire the materials and core competencies to compete on a global stage and well as gain access to markets previously unreachable. In many ways, the growth of the science of supply chain management has enabled companies to leverage the power of networking with supply and distribution partners to change the international business landscape. For example, some U.S. companies derive over 25 % of their profits from global sales. Simply, the cost and value activated by supply chain management determine a company's ability to compete across a global marketplace.

The data related to global trade reflects this new world of the global supply chain. Over the past 45 years, the growth of global trade has been dramatic. In 1970 the U.S. exported over \$56.6 billion and imported over \$54.3 billion. In 1990, exports reached \$535 billion and imports \$616 billion. In 2002 exports reached \$971 billion (\$682 billion in goods and \$289 billion in services) and imports stood at \$1.4 trillion (\$1.16 trillion in goods and \$240 billion in services). In 2013, exports of goods and services from the U.S. totaled \$2.28 trillion; imports totaled \$2.75 trillion [2]. In 1955, global trade in manufactured goods totaled US \$495 billion. In 2005, the number grew more than 100 times, to reach nearly US\$12 trillion. According to the World Trade Organization (WTO), total global exports in 2012 reached US \$17.93 trillion and imports reached US\$18.18 trillion [3] (Table 14.1).

TABLE 14.1. Value of Exports, Imports and Balance of Goods by Selected Countries: 2013 [4]

Value of exports, imports and balance of goods by selected countries: 2013			
In millions of U.S. dollars			
Country	Exports	Imports	Balance
Canada	172,461	201,912	-29,451
China	36,999	130,367	-93,368
Mexico	73,499	91,138	-17,639
Japan	20,791	46,381	-25,590
Germany	15,839	355,733	-339,894
United Kingdom	15,858	16,807	-949
South Korea	13,620	20,599	-6,979
Hong Kong	13,289	1,800	11,489
Taiwan	8,727	11,957	-3,230
France	9,936	14,228	-4,292
Singapore	9,734	5,930	3,804
Brazil	13,753	8,247	5,506

Research conducted in April 2013 by SCM World highlighted the growing complexity of cross-border trade [5]. Where globalization once meant low-cost country sourcing, today it is clear that goods move in all directions at once. Movement of product, whether raw

766 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

materials, finished goods, or capital equipment, requires an approach to global trade management that is ever vigilant of the dynamics of regulations, taxes, transportation cost, and more. Among the findings, it was found that

- Three-quarters of the companies surveyed conduct trade across more than 10 countries, with almost half (48 %) trading across more than 50 countries.
- Over 41 % of the companies surveyed import more than half of their products from international suppliers.
- More than 97 % of respondents feel that product cost savings are either “important” or “very important” business drivers of global sourcing.
- Thirty-five percent of the companies realize more than half of their sales from customers located in foreign markets, and two-thirds expect their total share of international sales to grow by more than 10 %, while 28 % expect growth of more than 25 %.
- Forty-eight percent of respondents felt that an inability to control global transportation costs and the lack of visibility of global shipments moving through the global supply chain constituted their top business challenges.

While there has been a resurgence of reshoring manufacturing in the mid-2010s, where companies have or intend to bring back some of their production from low-cost, off-shore locations, global trade is hardly on the wane. The reality is that while low-cost country sourcing, particularly in China, has lost some of its competitiveness, the flow of product across borders is increasing, not decreasing, and is now bi-directional or multi-directional rather than one way.

This explosion in foreign trade and increasing interdependence of global markets is the result of a number of trends driven by continued world economic growth and the connective power of technology that are expected to accelerate the growth of globalization. This growing economic internationalism, however, is not assured nor universally accepted as evidenced by the recent violent protests in recent years accompanying the meetings of international bodies like the International Monetary Fund and the WTO. Among the barriers are found political and economic regulations, financial restrictions, and poor logistics infrastructures.

14.1.1 TRENDS ACCELERATING GLOBALIZATION

There are a variety of forces driving today’s growth in international trade. Among the key factors are: maturing of the economies of developed nations, growing foreign competition, acceleration in global deregulation, growth of strategic alliances, and closer integration of domestic and international distribution systems.

14.1.1.1 Maturing of the Economies of Developed Nations

The maturing of the economies of today’s developed economies has fundamentally altered traditional thinking about global trade. For over a decade before the new millennium, it had become clearly evident that the era of high growth in developed economies was over as business consolidations, shrinking margins, aging populations, declining profitability, and production overcapacity indicated that many sectors of established economies had slipped from growth to maturity. While it is true that the U.S. still occupies a position of global

economic hegemony, it is clear that continued economic growth can only take place in the context of increased dependence on international partnerships. Today, some of the largest global corporations are combinations of once solely owned U.S. companies and foreign companies.

As markets at home have stagnated, companies in developed economies have turned to the exploding markets of the Pacific Rim, Brazil, and Eastern Europe. The decline in global tensions, the explosion in communications technologies, the movement of former closed countries toward market economies, and the easing of protectionist attitudes have made foreign trade of critical importance in sustaining competitive advantage. In addition, countries like the U.S. can no longer avoid the fact that continued economic success is predicated on international trade. Many products, such as oil and other basic raw materials, must be imported; often cost-effective components assembled in foreign countries are critical for the production of domestic finished goods. Finally, there can be no denying that certain imported products are here to stay. China's growing leadership in the production of high-labor, low-cost commodities and textiles can only expect to expand; Japanese leadership in television sets and low-priced microelectronics and parity in the automobile market are testimony of the impact of foreign products on American purchasing habits.

14.1.1.2 Growing Foreign Competition

Over the past 20 years, the expanding internationalization of foreign companies, as well as the coalescence of trading blocks in Europe and Asia, have challenged the supremacy of traditional economies and altered the balance of trade. This globalization of competition has accelerated sharply in just the past few decades. The emerging economies in Eastern Europe, China, Japan, and South Korea have long looked to the U.S. import marketplace to sustain their growing economies and to gain trade parity. In addition, many developing countries, such as Brazil, Mexico, and Viet Nam, who enjoy lower operating costs, are also seeking to catapult their economies to "world-class" status by supporting domestic companies with leadership in textiles, apparel, and electronics. The U.S. has countered by refocusing its efforts at increasing exports, not only with the major industrialized nations, but also with developing countries on a bi-lateral basis. The result has been a clear-cut requirement for American businesses to continuously decrease production and distribution costs if they are to remain competitive.

Many nations have also come to realize that deregulation and opening avenues of foreign trade, reducing tariffs, and fostering free trade are essential building blocks to their continued expansion. The growth in incomes worldwide, the development of distribution channel infrastructures, and the speed of communications have increased global demand for new products and market opportunities. Multinational efforts to divide the industrialized world into three massive trading blocs in Europe, Asia, and North America have also made an enormous impact on U.S. trade and logistics. The surprisingly easy successes enjoyed by the European Union to effect continental economic unification and a common currency in 2002 are providing Europe with the potential to assemble a powerful economic engine.

A critical development has been the emergence of the Pacific Rim countries. In 2010 China became the world's second largest economy in terms of GDP and, if its current rate of growth is sustained, will be the world's largest economy in as little as 5 years. Despite over a decade of recession, Japan still possesses the world's third largest economy. Beijing, Hong Kong, and Taiwan are becoming one China from the standpoint of trade. In 1993, the United

States, Canada, and Mexico took the first step in signing the North American Free Trade Agreement (NAFTA) as a counterbalance to the emergence of the trading blocks in Europe and Asia. While much of the early fears of massive job losses and migration of businesses to Mexico have proven baseless as the agreement completes its second decade, NAFTA has helped to expedite trade between the U.S.'s largest (Canada) and second largest (Mexico) trading partners (Figure 14.1).

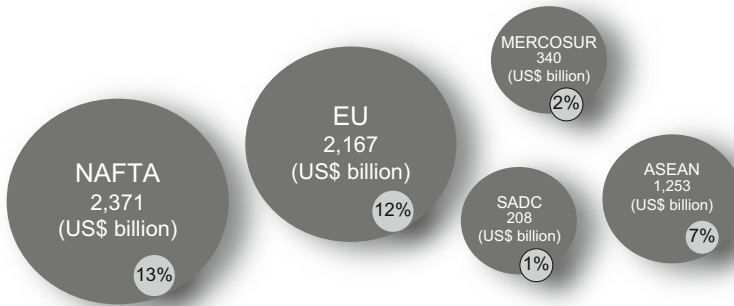


FIGURE 14.1 Top trading blocs 2013 (exports and % share of world trade) [6].

In order to manage the new era of global competition, the realization of supply chain strategies and the efficient operation of logistics is fundamental. As companies seek to export products not only to major trading partners but also to markets dispersed throughout the world, logistics costs involved in international warehousing and transportation are critical in holding down prices and assuring tolerable margins. In addition, as many U.S. companies seek to source components or relocate their operations overseas, corporate planners are having to formulate logistics strategies that will guarantee the smooth and efficient flow of materials and products through the domestic and international distribution pipeline. In summary, the goal of these movements toward regional trading blocs is to reduce tariffs and customs requirements, streamline and standardize shipping documentation, and establish compatible transportation and material handling systems that enable countries belonging to a regional trade union to act as if they were a single commercial entity.

14.1.1.3 Deregulation

A fundamental condition for the growth of global trade is the lessening or elimination of legal barriers to international trade. There are two major areas driving this trend: *financial* and *logistics deregulation*. The massive changes brought about by such events as the creation of the World Bank, the International Monetary Market (IMM), and the World Trade Organization (WTO), have enabled establishment of global financial standards, the extension and guarantee of long-term import/export credits beyond individual bank capabilities, and the mechanism to exchange currencies and trade futures at market rates. The decision of the U.S. to drop the gold standard in the early 1970s has assisted in removing previous restrictions on the setting of monetary rates. In addition, the adoption of the Euro in 2002 has greatly facilitated the flow of global trade by providing another stable medium of

exchange. While currency issues surround the Yuan and Ruble and talk of an alternate basket of currencies, financial markets so far have been content to rely on the U.S. dollar and the euro as the standard mediums of exchange.

The second area of global trade deregulation is occurring in transportation. The decision of the U.S. in the early 1980s to deregulate transportation has been slowly but steadily expanding across the globe. Historically, governments rather than market forces determined the scope and price of transportation. Many nations did not allow foreign-owned carriers to operate within their borders. Many transport modes, such as the current rail system in Mexico, are still state owned or, as in Germany, a mixture of state-owned and private companies subsidized by the government. Today, removal of these barriers to free-market drivers in most industrialized nations have followed U.S. example. UPS, for example, currently operates via any combination of rail, motor, air, or water in over 190 countries in a seamless manner via ownership, joint marketing, and operating agreements. Beyond operating privileges and privatization, changes in *cabotage* (requirement that goods and passengers within a country only use domestic carriers) have been gradually relaxed, especially between countries in the European Union and NAFTA.

14.1.1.4 Strategic Alliances

The fourth major trend driving globalization is the expansion of strategic alliances and joint ventures. In the past, most companies pursued a strategy of *vertical integration*. The argument ran that if the enterprise owned not only the production and distribution processes but also the sources of supply, then corporate control over products, market share, and profits would be assured. Today, with the growth of competitors, both domestic and foreign, focused on price parity and value-added features, such as quality and service, vertical organizations cannot hope to sustain their previous market dominance without business partners. Global competition, high product and service quality expectations, short product life cycles, and rapidly shifting markets have motivated firms to seek partnerships and alliances both domestically and internationally.

Partnerships provide the benefits of vertical integration without the risks. Joint ventures permit participating companies to leverage the competencies of partners to increase the speed of product design, and process, quality and service flexibility. In addition, other partnering advantages include access to capital, communications, and markets that businesses acting on their own could not attain or which are closed by foreign governments or restricted by trade barriers. Some of the most important trading blocs are the European Union (EU), Association of South East Asian Nations (ASEAN), Gulf Cooperation Council (GCC), Southern Common Market (MERCOSUR), North American Free Trade Agreement (NAFTA), and the South African Development Community (SADC).

One of the best examples of global partnering is found in the auto industry. Auto dealers both in the U.S. and abroad often buy vehicles from other countries to satisfy customer requirements for imports. Many a U.S. Ford or GM dealer that formerly sold only domestic models often today have foreign import divisions for sales and services. Recent trends among global auto makers have indicated a flourish of joint ventures. The merger of Fiat with Chrysler, Toyota in Australia, Isuzu in Japan, and Daewoo in Korea are examples. In addition, GM has foreign-owned subsidiaries in Europe (Opel), the United Kingdom (Vauxhall), China, Korea, and South America (GM do Brasil). As the world moves closer

770 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

to three trading blocks in North America, Europe, and Asia, U.S. firms that do not have either foreign subsidiaries or joint ventures might find themselves excluded from free trade with the European and Asian blocks.

14.1.1.5 Integration of Global Distribution Systems

The final area driving globalization is the use of international logistics service providers and information technologies to link companies spanning several continents. The objective of end-to-end service with real time order visibility and order tracking has become the mantra of today's logistics service providers (LSPs) as they search to expand their international footprint. These global LSPs provide continuity and visibility to the logistics needs of customers across the entire supply chain, rather than dependence on individual players who perform narrow local transactions and then pass shipments on to the next channel partner. The goal is to provide customers with technology tools to control the global supply chain by enabling them to manage both the velocity and delivery points of goods as they move across global networks. Such a capability is critical for companies utilizing forms of intermodalism that combine *ocean-land bridge* (ocean, rail or motor, and ocean), all water, or *ocean/mini-land bridge* (ocean and rail or motor) transport.

The key driver of global logistics integration is today's information technology tools, particularly the Internet. Through Internet marketing sites, customers can search the globe for competitive logistics service suppliers who provide as well as stimulate interest in products and services without regard for time or geographical limitations. e-Business Websites also provide anyone, anywhere on the earth the ability to buy products and participate in trading exchanges. Such tools enable companies to open real-time communication with global suppliers as well as eliminate cumbersome paper documentation relating to contracts, orders, delivery requirements, and customs forms. Finally, these systems are providing planners with real-time visibility to a range of critical functions from forecasting requirements to online track-and-trace of products in-transit and electronic bill payment.

14.1.2 BARRIERS TO GLOBALIZATION

While the above factors are driving companies world-wide to expand their international trade strategies, there remain significant barriers that threaten growth. Among these barriers are local tariffs and trade practices, cultural issues, financial restrictions, security, and logistics infrastructure weaknesses. Each of these barriers to globalization is detailed below.

14.1.2.1 Tariffs and Trade Practices

As companies draft globalization strategies, they are confronted with several regulatory barriers: international taxes, tariffs, and duties. Originally these charges were designed by governments to protect domestic industries by making imported goods more expensive. As such, they must be considered primarily as political instruments devised for the purpose of governing the practice of foreign trade within national borders. These costs not only can greatly fluctuate by country and region, they are often complex and continuously changing. While the impact of tariffs and trade regulations are compiled by every country's department of commerce, they are published in widely different formats, taxonomies, and languages. As one expert put it.

Traditionally, the only accurate way to access this information is through customs brokers, who must often research the intended shipment before they can estimate the cost. This process is painful, slow, manual, error-prone, and often outdated by the time it's completed. It does not lend itself to rapid iteration, let alone optimization [6].

What is more, as the world grows smaller, countries and trading communities can utilize threats of increased tariffs, duties, or other restrictions as a powerful diplomatic tool. Retaliation is often swift, with talk of looming trade wars. For example, President George W. Bush's decision in 2002 to increase protective tariffs on U.S. steel brought a storm of protest from the European Union who in turn appealed to the WTO for punitive action.

Beyond the use of tariffs and restrictions to control trade, countries often promote national practices that give domestic industries an unfair advantage. Sometimes these practices are administrative and consist of unnecessary technicalities or regulatory requirements that simply add cost and retard trade. Many countries require that a portion of the material composition of the product and the labor force originate from the home country. More serious are license requirements and import quotas that limit trade and protect local immature industries. Perhaps the biggest barrier is global competitors that are supported by local governments. For example, even giant UPS cannot compete with the world's largest global shipping concern, Deutsche Post DHL, which draws financial support about (25 %) from the German government.

14.1.2.2 Cultural Barriers

Building a successful global trade strategy requires bridging cultural complexities that add new dimensions to the challenges of international channel management. While trade laws, exchange rates, tariffs and restrictions, coping with long transit distance, global finance, and handling political risk are difficult enough for the international planner, cultural differences pose a serious threat to success. A failure to understand local customs or an unintentional violation of social taboos can create a veiled resistance on the part of nationals to do business with offending outside traders. While many practices and the use of logistics assets are uniform across the world, global companies must be able to manage the following cultural issues [7].

- *Trade relationships.* The personal elements necessary to develop trade relationships vary widely by nation. For example, in the U.S. business is conducted over the phone or by e-mail. In Asia, face-to-face contact is a requirement.
- *Use of LSPs.* The use of LSPs is perceived in some countries as a negative factor, indicating that a trading partner does not possess sufficient competencies.
- *Contracts.* Many cultures have different views regarding the binding power of contracts. In the U.S., contracts are perceived as legal and moral documents that possess the force of law and personal commitment. In some countries a contract is understood as a statement of intent, and if the environment in which the contract was originally drafted changes drastically, parties are justified in abandoning their commitment to the contract.
- *Working styles.* The work ethic and considerations of holidays and pay may differ greatly from country to country. In Europe, for example, many nationals expect lengthy vacation and holiday seasons. The best way to manage local workers is to have local or regional managers guiding employee decisions. The golden rule is to strategize globally, but execute regionally using the local language and culture.

- *Speed.* In many cultures the signing of contracts or commitments to strategic decisions are a lengthy affair. While U.S. strategists are accustomed to quick deals and rapid decision deployment, many cultures often wish to deliberate over alternatives before making a decision.

Differences in national management, work ethics, and decision styles can cause considerable friction and frustration when developing international strategies. Besides possessing the skill to execute the proper number crunching and legal deliberations, effective global planning teams must also possess a deep familiarity with the cultural and linguistic sensibilities of proposed local partners.

14.1.2.3 Financial Restrictions

Financial barriers to global trade consist of two critical areas: generating effective financial forecasts and charting the capabilities of institutional and monetary infrastructures. The ability to forecast financial positioning is critical to effective business management. It is the responsibility of financial managers to forecast company investment (earnings, growth, and ROI), profits (revenues and margins), assets (cash, receivables, and plant), and capital (debt) in order to chart business strategy. Domestically, creating forecasts for these elements is a challenge in itself. When combined with a global perspective, computing in additional factors, such as exchange rates, customs and tariffs, inflation, and local government policies, render the tasks of financial forecasting even more complex.

Financial infrastructure barriers arise out of the practices found in every country governing how facilitating institutions, such as banks, insurance companies, law courts and the legal practice, and transportation carriers, operate. Often, many of the financial and legal services found in the highly industrialized nations are in their infancy or simply not available in many parts of the world. For example, Hewlet-Packard found out early that legal and operating expectations with LSPs varied greatly by region. HP has solved the problem by having each LSP sign a base agreement, but then tacks-on addendums that contain regional specifics. Through this approach, HP is able to standardize its processes on a global basis while structuring the business to accommodate local and regional differences. The lack of financial and institutional structure adds a significant degree of uncertainty and poses critical challenges to the development of competitive global trading strategies.

14.1.2.4 Security

While historically a serious consideration, international trade has become exponentially more difficult today as nations grapple with the growing problem of security, international terrorism, and piracy. In fact, since the terrorist attack of September 11, 2001, governments have been erecting compliance and security restrictions on passengers and cargo that have the potential to seriously impede global trade. Global transportation costs are rising as carriers add security surcharges and delays elongating transit times. For example, Con-Way Transportation Services began charging an \$8 per shipment Homeland Security tax on January 1, 2003. The extra fee is used to pay the cost of U.S. government-mandated changes regarding registration of equipment, drivers, customs documentation, and security inspections at the U.S./Canadian border.

Several U.S. government initiatives have been passed that impact import/export operations directly. The Customs-Trade Partnership Against Terrorism (C-TPAT) and the

Container Security Initiative (CSI), both passed in the first half of 2002, are designed to protect the security of cargo entering the U.S. The Trade Act of 2002 requires exporters to electronically submit shipping documents to U.S. Customs 24 h after delivery to a port or 24 h before vessel departure. Other security measures are aimed at protecting the nation's sea-ports (Operation Safe Commerce – OSC) by making it mandatory for carriers to file electronic manifest information in advance of arrival. Such regulations were also enacted on international air cargo movements by late 2003. U.S. customs require that all carriers, deconsolidators, freight forwarders, and some consignment couriers use the Automated Manifest System (AAMS) to provide advance electronic cargo declaration information to U.S. customs.

The impact of these and other measures on global trade is potentially far-reaching. Already companies have begun to revisit their lean strategies and alter assumptions about inventory as lead times and delays elongate. Rules requiring transmission of shipment-level detail could add 24–72 h to inventory cycles, threatening to reverse decades of logistics productivity improvement overnight. These security measures have also generated a great deal more documentation which is often slower than the speed of the goods shipped, causing deliveries to languish while freight clears an increasingly entangled customs system. What is worse, as the outbreak of Severe Acute Respiratory Syndrome (SARS) in China during the first half of 2003 and the Ebola virus in later 2014 bore witness, security measures must grapple with non-terrorist attacks associated with the general health, food supplies, and well-being of trading nations.

14.1.2.5 Infrastructure Weaknesses

Beyond government policy, legal, cultural, and financial barriers, the lack of distribution infrastructure is perhaps the most critical impediment to global trade. Part of the problem resides in the lack of standardized transportation, material-handling equipment, containerization, warehousing, port facilities, and communications and technology that renders inter-country movement of goods difficult. Such barriers require products to be loaded and unloaded, sometimes by hand, from vehicles/containers as they cross national boundaries. What is worse, many developing nations do not have sufficient logistics infrastructures. Often basic transportation infrastructure, such as roads, rail lines, fuel depots, and customs agencies are rudimentary or, in some cases, non-existent. When it is considered that an average of 17–20 parties touch a typical international shipment in one way or another as it moves between carriers, brokers, and forwarders, and through customs and financial institutions, even minor problems in the global supply chain can cause major shipment delays.

14.1.3 SUMMARY

Companies today are faced with many opportunities as well as challenges in the pursuit of global trade. Each year, an increasing number of products from steel to toys and jewelry are imported, whereas at the same time, more U.S. goods are finding their way to new foreign markets. Few businesses today can feel immune from the threat of foreign competition. Bender [8] has succinctly described the conditions propelling globalization as composed of three interconnected areas. The first consists of *strategic* reasons such as:

774 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

- Leveraging shrinking product and process life cycles and recovering development costs by selling products on a global basis.
- Denying marketplace sanctuaries to competitors. Companies can sell at a high profit margin to captive markets, making it affordable to sell at a lower margin to more markets.
- Avoiding government-directed protectionism as found in many developing countries.
- Balancing production and investment with the differing economic growth patterns and economic cycles occurring across the globe.
- Profiting from global financial systems, communications and media, and market demand homogenization.
- Establishing early presence in emerging markets.
- Maximizing opportunities arising from symbiotic relations between suppliers and customers based on long-term commitments and close relationships.

The second area fostering business globalization is associated with the following *tactical* issues:

- Capitalizing on foreign trade to increase profits. Companies participating in international trade are likely to grow faster and be more profitable than companies focusing only on national or regional markets.
- Participating in countertrade agreements. About one-third of all international trade involves countertrade (bartering), rather than cash transactions.
- Achieving stabilization by matching product and investment with global business cycles.
- Obtaining economies of scope by maximizing marketing, production, and logistics advantages through international trade.
- Reducing costs by transferring products across national boundaries that reduces taxes.

The final area focuses on *operational* issues and is concerned with the following:

- Reallocating production and distribution capacities to match global market demand.
- Reassigning production, purchasing, sales, and financing to take advantage of different rates of international exchange.
- Accelerating the learning effect. As a company learns more about the global marketplace, costs associated with manufacturing and distribution processes decrease.
- Exploiting automation's declining breakeven point. As the volume of product and processes increase, technology costs are recovered much quicker.

14.2 GLOBALIZATION STRATEGIES

When embarking on an international trade initiative, companies normally will pursue one of three possible strategies [9]. The first, and most common, strategy is the simple export and import of products and services as part of a general effort to penetrate the global marketplace. Often, companies pursuing this strategy will turn over the entire effort to a broker, freight forwarder, or LSP rather than establish an internal international organization to perform search, marketing, and logistics functions. In this model, the objective of the global

initiative is more concentrated on executing basic trade functions than building a comprehensive strategy. Typically, the home company will pursue financial integration of the different regions where trade is performed, with less emphasis on integrating product development, marketing, and supply chain management and planning. Advantages of this model are enabling a company to expand into global markets without engaging in high infrastructure costs. Disadvantages are loss of flexibility and scalability and inability to respond to regional challenges and opportunities because of disjointed integration of operations and strategies.

In the second strategy, companies decide to pursue a limited form of international business. This approach abandons the home headquarter bias and focuses on local marketing, branding, sourcing, production, and distribution to ensure the transnational corporation is conveying a broad global perspective. While each region will typically have separate, autonomous supply chains, they are usually considered as secondary to the home corporate office which sets the overall business and global strategies. Generally, international operations are used to support home office operations, particularly with respect to sourcing production materials and finished goods for resale. The advantages of this model are the ability to engage in key growth markets while minimizing operational complexity between markets. Disadvantages involve loss of close customer contact and economies of scale.

In the final, and most advanced international strategy, regional facilities conduct different businesses designed to optimize the overall effectiveness of the transnational corporation. In this model, companies are truly conducting international trade and possess international brands. For example, sourcing may be done in China, production in Mexico, and distribution in the U.S. and the EU. Corporations such as Coca-Cola, IBM, Dow Chemical, Johnson & Johnson, Nestle, and Philips, utilize this model. Advantages of this model are a global focus on product, delivery, solutions, and delivery; flexible and scalable regional facilities; and significant economies of scale. Disadvantages are increased management effort necessary for coordination and information integration and loss of windows into individual market requirements.

14.2.1 GLOBAL STRATEGY DEVELOPMENT

Regardless of the approach taken, an effective global strategy identifies the nature and scope of the international trade initiative, defines the appropriate marketing and logistics strategies, drafts operational objectives, designs channel structures, and, finally, develops the appropriate performance metrics to measure success and uncover regions for improvement. According to Keegan [10], an effective international trade strategy is composed of the following five elements: (1) environmental analysis, (2) global strategic planning, (3) organizational infrastructure, (4) implementation, and (5) performance measurement (Figure 14.2). The goal of the exercise is to develop “world-class” international trade operations that provide global companies with the mechanics to optimize and align the distribution system with each international target market.

14.2.1.1 Environmental Analysis

The first step in global strategy development is defining the strategic dimensions of the enterprise. There are essentially three areas to consider. The first is detailing the *external business environment*. This process should be divided into macro-economic, socio-cultural,



FIGURE 14.2 Global strategy development.

political, and technical factors, and then into micro factors, such as markets, costs, competitors, and governments. An effective analysis should cover the whole world, ensuring that no relevant market, competitor, or trend is overlooked. The second strategic dimension involves assessing *organizational strengths and weaknesses*. A firm understanding of this strategic area enables global planners to deal effectively with opportunities, threats, and global trends. In addition, the firm should identify its own particular area of distinctive competence. This means that planners should know the products to be offered and the markets served; technological, sales, distribution and resource capabilities; and growth and profitability targets.

The final strategic dimension is coming to terms with and matching *stakeholder expectations* with perceived enterprise objectives. Stakeholders, managers, employees, and customers often have conflicting values and interests regarding enterprise size and growth, profitability, return on investment (ROI), sense of social responsibility, and ethics. Before a global strategy is constructed, planners formulating the direction of the company must be sure that objectives are in alignment with the realities of the external environment, the capabilities of the organization, and the desires and assumptions of the stakeholders.

14.2.1.2 Global Strategic Planning

Once the strategic environmental dimensions have been identified, planners can proceed to detail the nature and scope of the overall global channel strategy and define in detail the unique characteristics of each national market. Normally, a company begins to explore the possibility of entering foreign markets either because it feels it must in order to sustain corporate growth and competitive advantage or it is solicited by an importer or a foreign government. Before detailed market analysis begins, however, it is important that the firm defines its international marketing objectives and policies. This process normally consists of three parts. To begin with, global planners must determine the desired proportion of foreign sales to total sales. This ratio depends on product, competition, logistics channel requirements, and market-place aspirations. Second, planners choose between marketing

and distributing to a few target countries or to many countries. Generally, it makes sense to begin first by selecting a few countries in which a strong commitment and significant product penetration can occur. Finally, the firm must decide on the types of countries with which they would like to do business with. Issues relating to political stability, product fit, income, transportation substructure, geography, and others are possible elements to consider.

Once the global strategy has been determined, global planners must turn their attention to pinpointing which national markets are to be selected. Candidate countries should be rated on three major criteria: market attractiveness, competitive advantage, and risk. *Market attractiveness* consists in determining how well the company's products and culture will fit a local national marketplace. Key considerations are language, laws, geographical proximity, stability, cultural similarity, and other micro factors. Included in this criteria is how much of an effort an international company wants to expend to redesign or create new products and services for a local market. Termed *glocalization* [11], this effort is a combination of "globalization" and "localization." When used in a supply chain context, globalization is a form of postponement where a product or service is developed for distribution globally but is modified to meet the needs of a local market. The modifications are made to conform to local laws, customs, cultures or preferences.

Competitive advantage focuses on the level of existing competition the company can expect to encounter in the local market. Key decisions center on the cost of market entry and control; cost of product and communication adaptation; potential for growth in local population and income size; and the presence of dominant foreign firms that can impose high barriers to entry. The third criteria, *risk*, is divided into three types: asset protection/investment recovery risk, which is concerned with the possibility of foreign government nationalization or limits to the transfer of invested resources, and operational profitability/cash flow risk, which arises from the likelihood of local economic depression, currency devaluation, strikes and other factors. The third type comprises risks stemming from the local business environment and includes [12]:

- Failure on the part of the company to understand customer preferences with the result that they fail to offer a competitively attractive product and supporting envelop of services.
- The company fails to understand the local country's business culture or is unable to work effectively with foreign nationals.
- The company fails to understand the depth of local regulations and incurs unexpectedly high costs.
- The company finds that it does not possess the internal managerial competency to effectively manage global businesses.
- The local country might change its commercial laws, devalue its currency, or undergo a political revolution and expropriate foreign property.

Once these risks have been reviewed, choices are then made based on how the global strategy supports the overall corporate business plans and objectives, estimates of market potential, estimates of costs and profits, and, finally, validates the rate of return on investment.

14.2.1.3 Organizational Infrastructure

In the past, global logistics often suffered from poor organization, a lack of training, and the absence of inter-organizational power and influence. Logistics management was normally considered as playing a supporting role and not regarded as a key element in the enterprise's global marketing strategy. What is more, often the responsibilities of both domestic and global logistics were divided between competing business departments. Such immature infrastructures resulted in limited opportunities for integrating domestic and global organizations and pursuing simultaneous improvements in cost, efficiency, and productivity. Without effective global logistics organizations, the enterprise cannot hope to optimize on global opportunities and deter possible competitive threats.

The architecture of an effective global logistics organization can vary. For firms whose global effort is focused on a single country or homogeneous region, a centralized organization is particularly effective. When the scope of the logistics effort traverses many countries and diverse regions, the best form of organization is one in which the planning and control functions are centralized and integrated with other enterprise departments but the actual operations functions are decentralized. Simply, as the variety of differences in culture, governmental regulations, and knowledge of trends in local economic conditions expands, centralized global organizations become increasingly ineffective. In such environments, personal familiarity with the countries composing the international marketplace becomes invaluable.

14.2.1.4 Implementation

Once the global strategy has been completely structured, it must be implemented. This step entails obtaining and committing current resources to executing regional market, market cluster, and product life cycle plans. The key element in implementation is the presence of effective organizational infrastructures that cover all aspects of the global strategy from financial integration to logistics resource management.

14.2.1.5 Performance Measurement

A key component of global strategy is the drafting of a comprehensive program of performance measurements. The goal is to define essential metrics that are then compared with expected output. To the extent that the results of the strategy are consistent with original goals and assumptions, it can remain unaltered. If, however, wide performance variances occur, global planners must adjust the strategy by isolating specific areas for improvement. In addition, performance measurement must provide information that enables continuous strategic alignment with the external environment and organizational and value assessment assumptions established at the beginning of the strategy formulation process.

14.2.2 STRATEGY DEVELOPMENT SUMMARY

As globalization increases in the twenty-first century, corporate strategists must change fundamental methods of planning and operating the logistics functions of their companies. Firms with minimal involvement in foreign trade can defer logistics complexities to intermediaries who will handle the detailed operations necessary to conduct foreign trade. For multinational corporations who perform global logistics functions, however, a unified global strategy is necessary to ensure the smooth flow of product through the international

pipeline. Effectively executing a global logistics strategy requires companies to find solutions to the following issues:

- Balancing company resources (capital and inventories) and organizational structure with the needs of the global marketplace.
- Monitoring and managing the constant changes occurring in global trade. Trends include shifting attitudes toward tariffs, administrative procedures, restrictions on inter-country transportation modes, and warehouse storage, as well as managing the pace of rapidly changing marketing and logistics strategies, new product introduction, and increased information linkages. By responding effectively to change, multinational firms can increase the speed and reliability of global delivery and reduce overall transportation and inventory carrying costs throughout the global channel network.
- Extending and tailoring the supply chain to meet the distribution structure of each foreign nation or geographical region. Distribution channels in Europe, for example, are very mature and require local distribution centers, local management of transportation owing to the number of transit countries, knowledge of local customs, and regulations dealing with the European Union. Trade with Japan requires short delivery cycles and local inventory to meet planned and random demand patterns. Distribution in the Pacific Rim requires using local freight forwarders and lead time planning to counter delays due to the lack of a fully developed logistics infrastructures and protected local industries.
- Executing distribution for simultaneous multicountry, multiproduct introductions.
- Working with value-added taxing found in many foreign countries and transfer price regulations both domestic and foreign.
- Implementing information systems that provide for worldwide inventory planning and stock availability and customer order status.
- Benchmarking global channel performance with that of international competitors.

Effectively managing these and other global trade issues is more operational than strategic. The companies that will succeed in the highly competitive international marketplace of the twenty-first century will be those that can leverage information and decision support technology tools to solve global differences in market preferences, logistics structures, perceptions of quality and service, and performance measurement.

14.3 CHANNEL STRATEGIES

Few companies embark on a globalization strategy fully prepared to engage in international trade. Most companies begin by responding to an opportunity to sell goods and services abroad and, as the volume of sales increases, turn to the development of strategies and channel structures that will enable it to sell on a more systematic basis. According to David and Stewart [13], there are several factors influencing a company's entry into the global marketplace. An important factor is the size of the market. There is a very real difference between entering into a US\$10 million and a US\$100,000 million marketplace. Another factor is whether the target market is stable or growing. A market in which the exporter can become a major player will require a strategy different from one where the size of the

competition inhibits the exporter from being nothing more than a niche player. Another important factor is the type of product being offered. A product line competing on high quality and cost with a long life cycle will require a different entry strategy than an exporter that sells commodities or products with a short life cycle. Finally, global entry strategies are affected by the infrastructure of the local country, the sophistication of trading partners, and the overall culture and receptiveness of the local market to imported products and services.

When entering a global channel, international businesses pursue basically four alternative strategies. A company may choose to follow one or a combination to match particular objectives or marketplace conditions. The four strategies are *exporting*, *licensing*, *joint venture*, and *direct foreign investment* (ownership). Of the four, exporting is the easiest to execute. The remaining three strategies are in order increasingly more complex because they involve the establishment of production or warehousing facilities *within* foreign countries and the integration of company-owned domestic and foreign distribution channels (Figure 14.3).

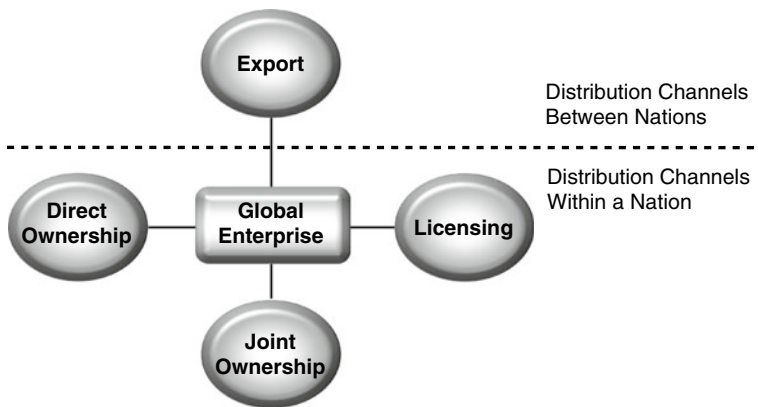


FIGURE 14.3 Alternative channel strategies.

14.3.1 EXPORTING

The most common form of global trade is the export of products into foreign markets from domestic facilities. Exporting requires the least involvement on the part of companies because the actual marketing and logistics activities are carried out by some form of international trading house or intermediary. Exporting can be pursued as either a *passive* or an *active* strategy. In a passive strategy, companies might engage in exporting products to foreign markets from time to time, or in response to an unsolicited order from a foreign customer. Active exporting, on the other hand, occurs as part of a strategic decision to expand sales into foreign markets. Regardless of the policy, exporting as a method of approaching foreign markets has the least impact on company product lines, distribution channels, internal organization, investment, and enterprise mission. Exporting can take two forms, depending on how involved the firm wants to become in the export process. Exporting can be executed *indirectly* through a variety of specialized export logistics service providers (LSPs) or *directly* by working with foreign merchants or wholesalers.

14.3.1.1 Indirect Exporting

Indirect exporting involves the least amount of effort and is the method normally pursued by firms taking their first steps toward engaging in international trade. This type of exporting is *indirect* because the company deals with some form of intermediary that is located in the local market. The major advantage of indirect exporting is that the business can engage in foreign trade without having to deal with the complexities of global logistics, tariffs and taxes, international marketing contacts, and accompanying paperwork and legal issues. In addition, it requires little risk or investment, the bulk of the work for export management falling upon the intermediary. Finally, indirect exporting renders the firm immune to possible foreign political and economic upheavals, as well as permits easy exit from a foreign market that fails over time to realize sales or profit targets. Negatives surround the company's loss of control over the ultimate cost and delivery of its products.

The various types of indirect export intermediaries (LSPs) are described below.

- *Freight forwarder.* This type of export LSP arranges transportation for cargo shipped from a domestic to a foreign market. A forwarder LSP is not by itself a carrier, nor do they buy and resell space on carriers. Instead, they act as an intermediary between the shipper and the carrier. Among the activities performed are quoting carrier rates, arranging charters or booking vessel space, preparing and presenting documentation, obtaining insurance, managing payments, and arranging inland transportation. In the U.S., forwarders must be licensed by the government, but they are not subject to certification requirements. Forwarders derive income from a combination of fees, markups, and commissions.
- *Export trading company (ETC).* This type of export LSP is an excellent choice for a company that is a newcomer to global trade or is unwilling to undertake any of the activities required of an exporter. An ETC itself is an exporter rather than a consultant to an exporter. An ETC works with producers and distributors that provide the finished goods that it wants to buy and resell in a foreign market. ETCs perform many export-related functions such as the purchasing and selling of goods, arrangement for the transportation and warehousing of goods from the export company to the foreign customer, financing currency conversion and absorbing rate fluctuations, assisting with consulting advice, and other logistics issues. More complex structured ETCs are known as *international trading companies*.
- *Export merchants.* Export merchants act as a form of international wholesaler. Similar to domestic wholesalers, they purchase goods from domestic producers and distributors and then pack and ship them to foreign markets. Although some export merchants may have facilities located in foreign countries close to the target market, they mostly deal with foreign intermediaries in the country of destination.
- *Resident buyers.* Foreign firms and governments often locate buyers directly in the import country. Their responsibility is to locate, purchase, and ship goods to their home countries. Sears, for example, maintains buyers in foreign countries who buy direct from producers for resale in the United States.
- *Export commission house.* This type of intermediary performs the same functions as a *resident buyer* except that the buyer is not an employee but rather an independent agent empowered to negotiate, buy, and ship from firms in the exporting country. In return, the commission house is normally paid a commission by the foreign buyer.

782 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

- *Allied manufacturer.* Exporting through a business partner is an easy, cost-effective way of shipping overseas. In the arrangement, a company with well-established foreign trade activities negotiates to “piggy-back” the products of other domestic firms with shipments of their own products to foreign countries. The advantage is mutual. For the shipping company, carrying other products assists in presenting foreign markets with extended product lines or achieving a higher utilization of transportation and warehousing capacities. For the exporting firm, the arrangement provides them with a good deal of the benefits of a mature foreign trade system without the investment.
- *Export management company (EMC).* An export management company is a product line or foreign market specialist who works that export for one or a group of noncompeting producers. Although most act as selling agents and consultants directly for their export clients, some of the larger firms do purchase products for resale. By working with an EMC, the exporter gains access to current information about the preferences of the local market, national customs, and government regulations.
- *Ship brokers and agents.* This type of export LSP assists exporters with the details of arranging ocean transport. A broker is an independent intermediary that brings exporters together with ship operators that have cargo space available to carry the exporter’s freight. In contrast, a ship agent works for the carrier. Agents arrange for the arrival of ships, berthing, and clearance; while the ship is in port, the agent coordinates unloading, loading, and fee payments.
- *Export packing companies.* This export LSP provides exporters with specialized packing services required for cargo being transported across continents. Besides optimizing packing space and minimizing damage, the LSP ensures that the cargo will pass customs inspection in the target nation.

14.3.1.2 Direct Exporting

Despite the advantages offered by indirect exporting, some firms choose to export directly to foreign nations. The choice of this strategy requires the establishment of company-owned exporting management functions. Usually this means the founding of an export department whose responsibility it is to establish the necessary distribution channels appropriate to each trading nation; find, maintain, and motivate intermediaries in targeted foreign countries; plan and execute all international shipping requirements; and, execute all export documentation. The major advantage of direct exporting is increased control over products sent to foreign markets. Disadvantages are found in the extra costs and overheads that arise from shipping directly to a foreign nation. The various types of direct export functions are described below.

- *Domestic-based export department or division.* Many companies have an export department or division in their organizations manned by an export manager and staff. This group executes actual selling and, in some instances, will perform other tasks associated with shipping, establishing logistics channels, and draft export documentation.
- *Foreign sales branch/subsidiary.* Companies with a significant presence in certain foreign countries might elect to locate a sales branch or subsidiary in each country. Overseas branches permit the exporter a much greater control over marketing decisions and product positioning and provides on-site skills and services necessary

for effective sales or marketing activities. In addition, branches may handle warehousing issues and promotions.

- *Traveling export sales representatives.* Export firms may send sales representatives directly to foreign nations to solicit and execute export arrangements and sales.
- *Foreign wholesale agents and merchants.* There are several types of agents and merchants. A *foreign sales agent* is an independent contract sales representative that promotes and sells for an export company. The agent is generally compensated through commissions. The actual sale is shipped and paid for by the exporter and the foreign buyer. On the other hand, *foreign merchant distributors* buy the goods directly from the exporter and establish their own pricing, promotions, and other marketing strategies except where prohibited by contract.
- *Direct sales.* This is the least used form of direct export. In this technique, exporters seek to sell products directly to foreign retailers or even end-customers. Normally, this type of exporting is used only for high-ticket and specialty items sold to foreign governments, businesses, or institutions.
- *Global web strategy.* Within the past decade some of the world's leading companies have embarked on a direct export strategy using Internet e-commerce. The Internet has enabled companies to explore radically new avenues of reaching customers, sourcing from international suppliers, building global brand awareness, and conducting business transactions unthinkable in just the recent past. Companies from GM to direct-mail businesses such as L.L. Bean, Land's End, and Amazon.com use the web to penetrate global markets and gain significant boosts to their bottom line. For example, retailer and cataloguer The Sharper Image gets more than 25 % of its online business from overseas. e-Commerce provides an effective and cost-effective mechanism for gaining free exporting information and guidelines to conducting research and offering customers across the globe a secure process for searching, ordering, and paying for products.

14.3.2 LICENSING

Similar to exporting, licensing is a relatively simple, cost-effective method of entering global markets. Licensing is defined as a contractual arrangement by which a firm (the licensor) in one country agrees to permit a company in another country (the licensee) the right to use a production process, trademark, patent, technical assistance, trade secret, merchandising knowledge, or other skill or technology. In exchange, the licensor will receive a fee or royalty. The objectives of a licensing agreement are straightforward: The licensor is able to gain access to a foreign market with a minimum of risk and capital expense; in turn, the licensee receives the right to distribute brand name products or access to proprietary processes either to found a business or to add to existing product lines. The best known examples of global licensing are Coca-Cola and McDonald's. Both firms penetrate foreign markets by licensing (franchising) product name, processes, and products to bottlers and food service companies across the globe.

There are several advantages licensing has over exporting. To begin with, licensing provides the licensor with a degree of control over how the product is marketed and distributed. For example, the local producer can modify products or services to meet local tastes and customs while the licensor retains control of the brand name, quality standards,

and so on. Also, licensing normally does not require a great deal of capital investment. Like exporting strategies, licensing provides licensors with a less risky method of gaining access to foreign markets than direct ownership, while providing sufficient flexibility to cancel unprofitable arrangements. On the negative side, the licensor has less control over the licensee than if the firm had established a directly-owned business. If the licensee does not live up to the terms of the contract, all the licensor can do is threaten to end the agreement. Finally, if the licensor decides to cancel the contract, they might find that they have not only lost control but have created a competitor with a strong market position in a foreign country where the licensor might subsequently find it difficult to penetrate on their own.

There are several forms of licensing in foreign markets. One is to execute a *management contract* in which a licensor sells management services for a fee to a foreign company to assist in managing a factory, distribution center, hospital, or other organization. Management contracts are low-risk methods of gaining entrance to a foreign market, especially if the contracting firm provides an option to purchase a portion of the business. Another method is *contract manufacturing*. In this method a firm licenses and agrees to assist a foreign company produce or distribute its products. Although licensing has the drawback of potential loss of control over processes, it does provide the firm with the opportunity of partnership or acquisition if the market matures. Perhaps the most recognizable form of licensing is *franchising*. In this model, the licensor offers a complete brand and marketing concept and a mature operating and structural format. In exchange, the licensee must buy product and infrastructure from the licensor and pay a royalty or fee.

14.3.3 JOINT VENTURES

Unlike the first two strategies, the decision to execute a joint venture with a foreign company directly involves a company in the management of a foreign enterprise. Normally, a joint venture occurs when a firm decides to join with a foreign company for the purpose of exercising joint ownership and control over a business. Joint ventures may occur when a firm invests in the production and distribution operations of an existing foreign company, or the two parties may join together to found an entirely new company.

Companies decide to enter into joint ventures for several reasons. The most obvious is to significantly increase local control over the product, distribution, and marketing strategies of the foreign company due to its financial partnership. A firm may also enter into a joint venture to utilize the specialized skills or gain access to the production or distribution systems possessed by the foreign partner. Companies are sometimes prohibited by foreign governments from entering alone into a local marketplace (such as India). Such restrictions often occur in less developed countries where government is actively promoting the growth of home industries. A partnership with a local firm may provide an avenue around this difficulty. Finally, a firm may lack the capital, managerial, and personnel capabilities to enter a foreign market on its own without the assistance of an established foreign company.

There are a number of drawbacks associated with joint ventures. The most obvious is the significant degree of risk involved. Outside firms normally invest capital in foreign ventures that they wish to convert to profits that are returned to the home country. Disagreements with the partner or even government restrictions may inhibit return on investment expectations. In addition, disagreements might also arise over local product, marketing, and distribution channel strategies. Settling these differences might be a difficult affair requiring some

compromise on the part of both parties. Finally, joint ventures might even impede a multinational company from executing specific marketing and distribution strategies on a worldwide basis.

14.3.4 DIRECT OWNERSHIP

The direct ownership of production and distribution companies in a foreign country represents the highest level of control and involvement an enterprise can have in the pursuit of foreign trade. Instead of working through an intermediary or a venture partner, the firm assumes all responsibilities for facilities, personnel, marketing, and product distribution. Ownership occurs through two methods. In the first, a company may seek to build a new facility. This method is the more difficult of the two. The company must gain the permission of the government and fulfill all regulations, establish marketing contacts and distribution channels, select the site, hire personnel, acquire equipment, and provide for capital funding among other things. A far more cost-effective method is to acquire an established foreign firm. All the company has to do is to buy into the preexisting structure, making alterations as required to meet changes in regulatory, product, and marketplace emphasis.

There are some significant advantages to direct ownership. As the company now controls the foreign venture, it can determine the marketing, product positioning, and distribution strategies to be pursued in the local market without interference from a local partner. This point is critical for multinational enterprises seeking to develop long-term, unified strategies throughout the globe. Second, direct ownership provides the ability to compete more effectively on price. Because the cost of transportation of the product from the home country is eliminated along with import taxes and customs duties, the foreign subsidiary can become more price competitive. Third, the new venture might be able to achieve cost economies in the form of cheaper labor or raw materials, foreign government incentives, or process improvements. Fourth, the company's image may improve in the foreign country due to its commitment to the local economy. Finally, as the company's knowledge of the foreign country grows, it might be able to improve on its marketing techniques and product offerings to match the ongoing needs of the local community.

Although the benefits of direct ownership are substantial, so are the drawbacks. The most obvious negative is the enormous risk a company takes in investing in a wholly-owned foreign venture. Some of the concerns are currency devaluation, political unrest, declining markets, and nationalization. In addition, the investor company can find its flexibility to respond to home or other foreign markets circumstances curtailed because of the financial commitment involved in a foreign venture. In addition, if the company decides to discontinue the operations, it may involve not only forfeiting the cost of the plant, equipment, and personnel but also the company's reputation in that region. Finally, reorienting the product and the sales environment in response to overall changes in the company's internal objectives might be more difficult to implement due to governmental and regional regulations.

14.3.5 OTHER METHODS OF ENTRY

International trade strategies include other methods of entry.

14.3.5.1 Foreign Trade Zones (FTZ)

An inexpensive and non-complicated method of engaging in foreign trade is to use a foreign free trade zone. A FTZ is defined in the *APICS Dictionary* as

Areas supervised by U.S. Customs and Border Protection that are considered to be outside U.S. territory. Material in the zone is not subject to duty taxes, which are payable when the material is moved outside the zone for consumption. There is no limit on the time material may remain in the zone. Internationally, similar areas are called free trade zones.

FTZs can also be defined as labor intensive production centers that involve the import of raw materials or components and the export of factory products [14]. Typically, goods are landed, repackaged, produced or reconfigured, and re-exported without the intervention of local customs authorities. If the goods are re-exported, they never pay duty to the local government in which the FTZ is located. If they are sold in the country the FTZ is located, they must pay the necessary duties when they leave the FTZ. Some countries aggressively encourage FTZs by allowing just about any economic activity in the zone. FTZs are usually found around major seaports, international airports, and national frontiers, such as Hong Kong, Singapore, New York City, and Los Angeles.

There are several advantages to using FTZs.

- *Deferral, reduction, or elimination of certain duties.* FTZs receive goods without any customs formalities or import duties. This includes exemption from inventory taxes and quotas.
- *Duty exemption on re-exports.* Since an FTZ is considered outside the commerce of the local government, a company importing materials or components into the FTZ does not pay customs duty until the inventory enters the nation's commercial system. If the inventory is exported from the FTZ, no customs duty is due.
- *Duty elimination on waste, scrap, and yield loss.* Since a producer in an FTZ does not pay duties on imports until the goods enter the commerce of the local country, it is essentially paying for the duties on the materials after they have been processed. As a result, duties owed do not include production waste and scrap, thereby reducing the amount of goods taxed.
- *Relief from inverted tariffs.* When the duty on imported components is higher than the duty on the finished product, it is called an "inverted duty." To avoid the duty, a producer can bring low cost production inventories into the FTZ and process them into a finished good for export. When going through customs, the producer pays the duty on either the components or the finished goods, whichever is more advantageous.
- *Weekly entry savings.* Instead of filing an entry every time a shipment enters a country, an importer in an FTZ only needs to file one customs entry a week, thereby reducing documentation costs.
- *Improved compliance, inventory tracking, and quality control.* FTZs allow companies to more closely track their inventory. By bringing inventories into an FTZ warehouse controlled by the company, it is possible to identify and classify goods at the warehouse instead of at the port at a customs control location.
- *Indefinite storage.* A company can hold goods in an FTZ indefinitely. If there are quotas, the goods can be held until they are entered into the local country's commercial system without falling under quota restrictions.

- *Avoidance of fines.* Imports can be processed, relabeled, and repackaged in an FTZ before going through customs. This would help a company with potential product compliance problems to correct the violations before going through customs. The same conditions would apply for products that need to be inspected and tested prior to paying import duties.

14.3.5.2 Maquiladoras

Maquiladoras offer exporters another easy way to engage in international trade without absorbing the administrative and assets costs. A maquiladora is a company located in Mexico that has the status of an FTZ. The company imports production inventories from the U.S. duty-free, process them into finished goods, and then re-exports them back to the U.S. The only customs duty imposed is on the value-added in Mexico. Maquiladoras have declined in popularity with the passage of NAFTA.

14.4 MANAGING GLOBAL TRADE NETWORKS

The establishment and maintenance of a global trade network is a complex affair involving most of the functions of domestic distribution and logistics, plus additional requirements associated with structuring global market channels, financing and terms of sale, pricing, and documentation. What is more, whereas the functions of distribution and logistics are universal, the structure and performance criteria of global trade networks vary throughout the world. It used to be assumed that the level of distribution channel structure development found in one country paralleled the structures of other countries that had attained the same degree of economic and technological development. As international trade exploded over the past decades, it was found that actual global network structures are so closely intertwined with a country's social, cultural, technological, and political conditions and stage of economic development that it is impossible to generalize about one specific form or structure throughout the world. As a result, firms aspiring to participate in global trade must constantly rethink and adjust to the marketing and logistics channel structures of their trading partners if effective global strategies are to be realized.

In general, structuring a global trade network requires making many of the same decisions concerning cost, product positioning, sales and profitability, channel control, and flexibility that are made when defining the objectives for domestic channels. There are, however, a number of issues that are specific only to global channels. Managing these issues will be the subject of the sections below.

14.4.1 ESTABLISHING GLOBAL DISTRIBUTION CHANNELS

Establishing and maintaining effective global trade channels requires significant planning and understanding of international markets.

14.4.1.1 Cost Versus Level of Service

In the creation of any distribution channel, planners must begin by charting the desired customer service level targets and the cost of meeting those objectives. This factor is even more critical when it comes to structuring a global trade channel. Because of the increased

number of variables and constraints clearly understanding service and cost ratios can be a difficult exercise. The flow of communications is easily interrupted by distance and differences in language, culture, and legal factors. Documentation is more extensive, often resulting in long delays. Financial flows are full of roadblocks in the form of cash and payment transaction conversions, pricing, credit management, insurance, and liability. Furthermore, the presence of legal and regulatory restrictions, duties and taxes, export and import restrictions, and local laws and customs make measurement difficult. Finally, the number of channel echelons in the pipeline, the use of intermodal freight carriers over long distances, and packaging and labeling make it difficult to create precise metrics to weigh the cost versus the level of service.

Bender [15] feels that four service criteria (response time, order completeness, shipping accuracy, and shipment condition) are critical in making any evaluation of service versus cost. *Response time* refers to the time elapsed from receipt of a customer order until goods are received by the customer. Viewed from a service/cost perspective, as global lead times decrease, the cost of operations increases. When it comes to global distribution, the market is less sensitive to long lead times. Owing to the size and complexity of the channel, most foreign customers normally increase lead times and inventories to compensate for longer delivery times. Still, a global distributor must constantly search for methods of increasing delivery service while maintaining or lowering costs. Developing alternate distribution systems, streamlining paperwork flows and operations, and using computerized supply chain management applications, and others are possible avenues for improvement.

Due to the length of the channel and the time required for order delivery, the last three service elements are of much greater importance. Probably the most critical of these elements is *order completeness*. Order completeness is defined as the percentage of how close the actual shipment matches the products and quantities originally ordered. As the percentage of order completeness grows, logistics costs decline correspondingly. Simply, the less a company has to handle backorders and expediting, the less the cost for order completion processing and shipping.

The next service element, *shipping accuracy*, is the ratio between the number of deliveries that have the correct products, quantities, prices, and so forth, and the total number of deliveries for a specific time period. The level of accuracy depends normally on the level of control. However, as the level of control increases, the greater the expense. The cost of poor accuracy in global distribution is excessive, including paying for and processing returns, reshipping orders, canceling orders, and loss of customer goodwill.

The final service element is *shipment condition*. This measurement is defined as the ratio between the number of orders delivered in good condition and the total number of orders shipped. Unlike domestic shipments, international orders are often handled many times as they move through the global pipeline. At each occasion, the order is exposed to the possibility of delay, damage, and theft. Considering the cost of backorders, packaging, and time spent in order replacement, undamaged orders are a significant service versus cost element. Improving the five service versus cost elements requires global organizations to constantly search for ways to continuously increase service/cost ratios.

Finally, effective management of a global distribution network requires close supervision of channel operations costs. Many of these costs are the same whether they are associated with domestic or foreign distribution channels. Costs for administrative facilities and warehouses, transportation rates and fleet maintenance, purchasing, value-added processing,

inventory, and information processing are part of both domestic and international channel management. In addition, global channels incur costs such as developing new marketing channels, maintaining an internal international trade department, carrying the cost of in-transit inventory, insuring deliveries, and incurring product packaging, customs duties, and taxes. As a result, areas for cost controls and potential improvement grow significantly as the size and scope of the global channel expands.

14.4.1.2 Understanding International Distribution Channels

Unlike domestic distribution channels, global trade channels often move goods through several levels of geographically dispersed channel control points. As illustrated in Figure 14.4, there are several international links to consider when constructing a global channel network.

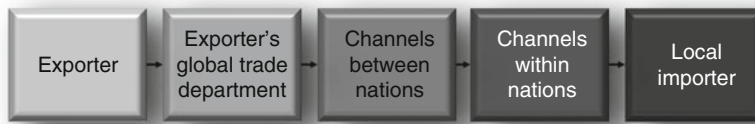


FIGURE 14.4 Global trade network.

The exporter is the first link in the global trade network. The exporter decides how products are being stored in the home country, what marketing efforts are underway, the nature of the physical channels of distribution the network must traverse, and other issues. Once a global trade strategy has been drafted, the exporter's global trade department or international division determines what the physical network channel will look like and other critical marketing decisions, such as product mix and service performance targets.

In the next link, channels between nations, the product is moved from the domestic market into international channels of distribution. Often shipments pass through several iterations of unloading and reloading, transport consolidation, and warehousing occurring in different foreign countries. These distribution nodes can represent an intermediary, government customs and tariffs check points, or stocking locations. In addition, because of the relative size of the distribution channel, there are a significant number of options available to suppliers and customers. One option is a strategy that enables customer orders to be filled from multiple locations in the global channel. Because of the size and flexibility of the global network, it is of critical importance that planners structure a channel that optimizes cost and service objectives and is in alignment with marketing, product, and financial strategies.

The fourth global network link occurs when the product arrives at the destination country and enters the local distribution channel. Depending on the nature of the trade agreements, the product could traverse a variety of intermediaries from FTZs, to local brokers and LSPs, to customer distribution channels. For example, to sell soap in Japan, Proctor & Gamble must sell through a labyrinth of intermediaries starting with sales to a general wholesaler, who sells to a product wholesaler, who sells to a regional wholesaler, who sells to a local wholesaler, who finally sells to retailers [16]. At the end point of the global trade network is final delivery to the customer.

In a classic article, Picard [17] segmented global channels into four systems. These systems cut across the channel strategies described above. In the first system (Figure 14.5), products are shipped directly from the home country to intermediaries or customers in a single foreign market. The advantages of this system are that there is no need for foreign warehousing or shipment consolidation and there is less product in the distribution channel. A serious drawback of this system is the accompanying long lead times and delivery costs for customer delivery. In addition, the length of the supply line renders the shipment subject to possible disruption and delay. Finally, the packaging and documentation costs associated with this system are normally higher than for the other three systems.

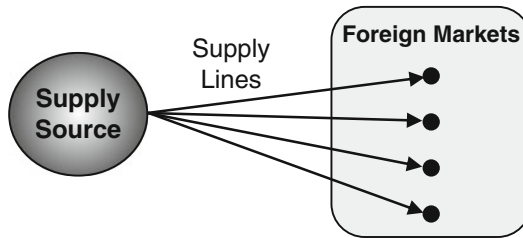


FIGURE 14.5 Direct system of global trade.

The second channel system (Figure 14.6) attempts to solve some of the problems of the direct system by interposing a shipment consolidation center in between the domestic warehouse or producer and the foreign market. The purpose of the consolidation center is to decrease the overall cost of transportation and shorten service lead-times. Product can be shipped from the home country in bulk and then converted (bulk break) into individual customer orders and stocking units and distributed within the foreign market.

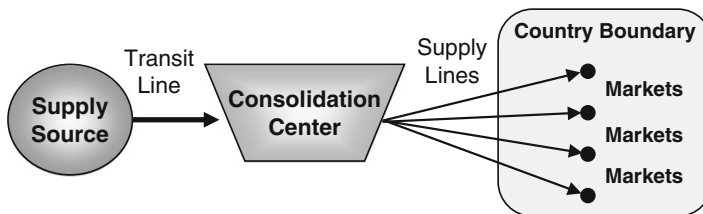


FIGURE 14.6 Global trade consolidation strategy.

The last two global channel systems are distinguished from the first two by the fact that they both require the creation of a consolidation warehouse in the foreign market. In the third system (Figure 14.7), inventory is shipped from the home country to a stocking warehouse located within the foreign market. The benefits of this arrangement are obvious. Delivery to the foreign warehouse can be done in bulk and with slower transportation modes, thereby decreasing shipping costs; order lead times are shorter than in the first two systems; customers have greater flexibility in product and quantity selection; and, because the shipment is really an intracompany transfer, the costs associated with tariffs and documentation are reduced. Negatives to the system are the cost associated with maintaining a foreign facility and higher levels of pipeline inventory.

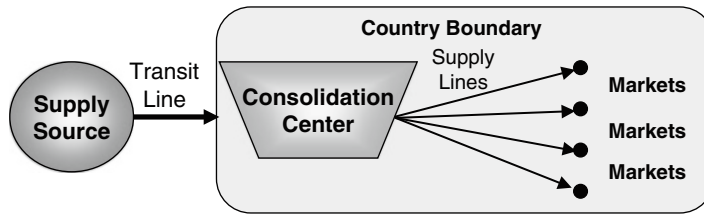


FIGURE 14.7 Consolidation strategy within a country.

The final global channel system (Figure 14.8) expands on the concept of a foreign consolidation warehouse by enabling product sales to multiple foreign markets from a single strategically positioned warehouse. The most significant advantage of this system is reduction in facilities and inventory stocking costs while preserving shorter lead times and customer flexibility. Benefits, however, might be compromised by transport and administrative costs as shipments are sent to other foreign countries. Multicountry warehouses should ideally be located in a free-trade zone, thereby eliminating costs arising from local tariffs and taxes.

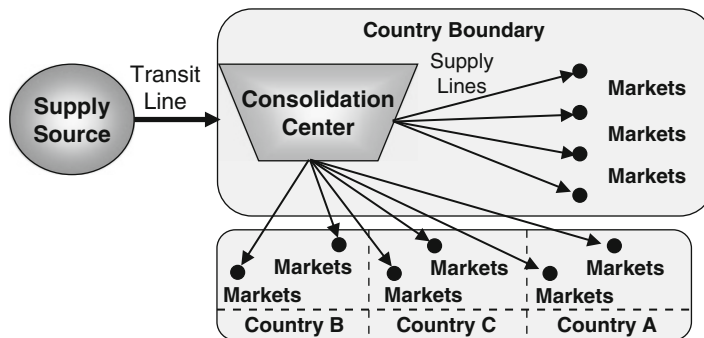


FIGURE 14.8 Consolidation strategy for multiple countries.

In deciding which channel system or combination of systems to implement, channel planners must carefully review a number of key factors relating to the nature of the product, the target marketplace, export requirements, and the local country environment. *Product*-related issues focus on such attributes as value density, product line variability, perishability, obsolescence, position in the product life cycle, and expected turnover rate. *Market*-related issues refer to the number and size of the foreign customer base, level of expected service, sales volume, quality of foreign intermediary or company-owned distribution channels, fitness of product, and prospects for growth. *Export*-related factors center on export marketing strategy, sophistication of intermediaries, and firm size. *Foreign environment* issues focus on sophistication of global channel infrastructure, political and economic stability, degree of government regulation and customs constraints, and the presence of strong, cost-effective foreign partners and transit contractors. By using these key factors, planners have the ability to develop several different global channel systems. For instance, a direct channel system could be used to supply bulk shipments to large foreign customers, whereas a multicountry approach could be employed simultaneously to penetrate several different countries supplied from a central foreign warehouse.

14.4.2 GLOBAL MARKETING ISSUES

Although there are great similarities when constructing domestic and global trade channels, there are also a number of significant differences regarding products, pricing, contracts and terms of sale, and marketing department organization that are unique to international transactions. These features are described below.

14.4.2.1 Global Marketing Department Organization

Probably the first place to start in conducting global trade is deciding on the type of global trade department to be established. Large multinational companies may pursue several types based on their global channel strategies. The least complicated type of organization is the domestically based *export department*. As discussed previously, such a department normally consists of an export clerk, a sales manager, and a few assistants, or it can be a complex business unit with expanded roles and service offerings. Exporting departments can be *indirect*, contracting with domestic or foreign wholesalers or distributors, or *direct*, shipping product directly to foreign buyers.

If a company decides to expand beyond just exporting and importing goods into more complicated global trade activities, such as licensing, joint ventures, or direct ownership, they will need to establish an *international division*. This organization is staffed by dedicated global trade specialists capable of provide a wide array of services to various operating units. According to Kotler and Keller [18] the division could be organized in several ways. They could be formed as a *geographical organization* reporting to a regional country vice-president responsible for the salesforce, branches, distributors, and licensees in the local country. Another option would be to organize the division into *world product groups*. In this format, each operating unit would have a national vice president responsible for worldwide sales of the corporation's product groups. Finally, operating units could be organized as *international subsidiaries*, each with a president reporting to the president of the international division.

Finally, some organizations have become so big that they consider themselves *global organizations* rather than national marketers. Companies like Walmart, Apple, Microsoft, Black and Decker, Warner Lambert, and others are involved in the planning and execution of global distribution channels, involving local production, marketing strategies, and financial systems. Bartlett and Ghoshal [19] distinguish three global organizational strategies: (1) the world is treated as a single market—selected when the company has a very strong product; (2) the world is treated as a portfolio of national opportunities—selected when the company is competing with other strong players in the local market; and (3) a combination of strategies 1 and 2. In the end, finding a successful balance is a tricky affair where even giant corporations like Coca-Cola and McDonald's have often pursued what turned out to be a failing strategy.

14.4.2.2 Products and Services

An important step in global distribution surrounds several decisions regarding the marketing approach driving product positioning. Classically, the product marketing strategy takes one of two approaches. In the first option, international marketers choose to follow a *standardized approach* by offering the same products, prices, advertising, promotions, distribution channels, and value-added services to all foreign market segments. This option

is the less costly, as little or no modification is made to the product and global marketing strategy. On the other hand, marketers might pursue a *customized approach* in which the product and distribution support structure is tailored to meet the needs of local markets. Many international trading companies develop a strategy somewhere in between these two extremes, searching for ways to leverage the two approaches in an effort to optimize sales and profits while reducing costs.

Regardless of the approach selected, even heavily branded and labeled products such as Coca-Cola, Toyota automobiles, and McDonald's, often require some adaptation to meet local tastes in foods, fashion, or other attributes. Keegan [20] has identified five possible product and communications strategies. In the first, *straight extension*, the product is offered to the marketplace without modification to local needs. This is the least expensive of the options and is used for most durable goods such as appliances, cameras, consumer electronics, tools, and machinery. Although a tempting option, since it requires no additional R&D, production, or promotional modification expense, it can be costly in the long run.

The second product strategy is *product extension-communications adaptation*. In this strategy, the product is offered to the marketplace essentially unchanged; the only adjustment required is in marketing communications. For example, the product is standard while the brand message varies in language, name, colors, and so on to meet the local market. Another approach is to use the same product theme globally, but the content used is adapted to each market. An example is the use of women in advertising which can be radically different by country. Another approach is to have a pool of ads, from which each local market selects the one that best fit its home environment. Bicycles and motor scooters are examples of products that fit this approach.

The third product management approach is *product adaptation*. This strategy requires changing the existing product to meet the standards or tastes of local nations. There are several alternatives in this strategy. In the first, the exporting company produces regional (Western Europe, Middle East, and so on) or local country versions of its product. This strategy can even extend to micro-versions of products geared to a specific city or retailer. This option is particularly important for food distributors who must change seasonings, textures, and colors to meet local preferences. Durable goods, such as automobiles, sometimes are modified to fit the safety requirements of foreign countries.

The final option, *product invention*, occurs when a firm decides to create a new product just for the regional or local market. This option can take two forms. The first, termed *backward invention*, occurs when the exporting company reintroduces previously successful products to the former local market. *Forward invention* involves creating a new product to capture the market of a local country. This option may result in significant advantage as the new product can be introduced into different markets as well as the home market. Still, it is a risky and costly strategy, the benefits of which must be closely tracked.

Another key area in this sphere is the use of advertising and promoting products in foreign lands. This area is a critical activity that requires an intimate knowledge on the part of the exporting company's marketing team of the cultures, languages, and histories of each local market. Even small things such as name, color, and nuance can have an enormous impact on foreign market acceptance. One alternative is to promote products using the same messages as those used in the domestic market. The familiar sight of the Coca-Cola logo and MacDonald's "Golden Arches" are good examples. However, sometimes product names, advertising media, and labeling need to be changed because of local customs and language.

For example, the color purple is associated with death in most of Latin America, and white in Japan with mourning. Finally, the utility of advertising media throughout the world varies. Television is a universal medium in the U.S. but limited by country in Europe and almost nonexistent in poor countries. The same variance in global audience occurs for ads placed on the radio, in newspapers or magazines, or available through the Internet.

14.4.2.3 Terms of Trade

In the process of conducting global trade, several activities need to be performed, such as clearing the goods for export; arranging for the transportation of the goods between the exporter and the customer, often performed using different channel intermediaries and means of transport; and clearing customs in the importing country. Three major terms of sales are critical in an international environment: Incoterms[®], harmonized system (HS) codes, and preferential fees, duties, and taxes.

The purpose of the *International Commerce Terms* or *Incoterms*[®] is to determine the contract of sales detailing whether it is the responsibility of the exporter or the importer to perform and pay for these activities. Incoterms[®] were first introduced in 1936 to help exporters and importers clarify issues regarding title transfer and responsibility for costs and insurance during shipping. Since their initial introduction, the Incoterms[®] rules have been periodically updated, with the eighth version published on January 1, 2011. Incoterms[®] determine whether the exporter or the importer assumes the risk at certain points in the shipment in addition to indicating which party is responsible for each task in the transportation process. Incoterms[®] attempt to minimize the confusion over the interpretation of shipping terms by outlining who is obliged to take control of and/or insure goods, who is responsible for the clearance of the goods for export or import, and who is responsible for executing requirements on the packing of items. Although Incoterms[®] are not legally binding, they are globally accepted as the standard terms to use in contracts of carriage. Incoterms[®] by themselves *do not*:

- Constitute a contract;
- Supersede the law governing the contract;
- Define where title transfers; nor,
- Address the price, payables, currency, or credit terms.

The current Incoterms[®] are divided into two categories *based on method of delivery*. The larger group of seven rules applies regardless of the method of transport, with the smaller group of four applying when international trade is entirely conducted by sea and inland waterway. The 11 Incoterms[®] are described in Table 14.2.

Table 14.3 illustrates buyer and seller responsibilities for major international transportation activities by Incoterm[®].

Besides Incoterms[®], the terms of sale in an international environment are governed by the following two other factors:

- *Harmonized system (HS) codes*. These six-digit codes (some countries like the U.S. have added four additional digits to make a 10 digit code), which vary by country and number in the hundreds of thousands, detail the fees and restrictions associated with the transport of goods across national borders. Their main purpose is to facilitate the recognition of cargos by customs officials to ensure that the correct items and duties can be assessed on a shipment. These codes are defined and harmonized for all

TABLE 14.2. Incoterms®

Group	Term	Description
General transport		
E	Ex Works (EXW)	The importer agrees to take possession of the shipment at the point of origin and to bear all of the cost and risk of transporting the goods to the destination
F	Free CARRIER (FCA)	The exporter incurs the cost of delivering the shipment to the carrier designated by the importer. FCA is normally used with intermodal transport
	Carriage Paid To (CPT)	Same as above, but is applied to any transport mode. Risk passes to importer when shipment delivered to the main carrier
	Carriage and Insurance Paid To (CIP)	Same as above, but importer bears the risk of loss or damage
D	Delivered at Terminal (DAT)	Seller delivers goods to a named place of destination. The seller bears all risks involved in bringing the goods to and unloading them at the place of destination
	Delivered at Place (DAP)	Seller delivers goods at the buyer's disposal arriving for unloading at the named destination. Seller bears all risks involved in bringing the goods to the named place
	Delivered Duty Paid (DDP)	Same as above, plus exporter is responsible for clearing the goods for import and paying the customs duties
Sea and Inland waterway		
F	Free Alongside Ship (FAS)	Same as above, but is used for water transport only. Risk is transferred when goods are delivered alongside the ship. Importer pays cost of loading
	Free on Board (FOB)	Same as above, but is used for water transport only. Risk is transferred when goods cross the ship's rail. Exporter pays for loading
C	Cost of Freight (CFR)	Shipment contracts that obligate the exporter to obtain and pay for shipment.
	Cost, Insurance, Freight (CIF)	CFR is used for shipments by water only. Risk passes to importer at ship's rail
		Same as above, plus exporter pays for the cost of insurance. Risk of damage is the same as that for CFR and CPT

goods crossing a border. Currently, the coding system is used by more than 200 countries and economies as a basis for their customs tariffs and for the collection of international trade statistics.

- *Preferential fees, duties, and taxes.* This area can be separated into three broad areas:
 - Import tariffs are normally comprised of *general* and *preferential duty rates*, in addition to other fees and charges. Preferential duties are influenced by such elements as *most favored nation's* (MFN) status and duty rates based on specific country agreements.
 - Other charges, such as the *anti-dumping duty* (ADD), are often imposed on certain products (steel, for example) from certain countries to offset unfair pricing of the imported product.
 - Finally, transportation managers must be aware of taxes, such as *valued-added tax* (VAT), *general services tax* (GST), and *merchandise processing fee* (MPF) and a host of fees collected for *other government agencies* (OGA), including excise taxes, harbor fees, trade promotion fees, control taxes, and others, that impact global trade.

14.4.2.4 International Trade Contracting

Another factor associated with international sales is contacting. When a business decides to engage in international trade, it often enters into a number of contracts, written and implied, with many different trading entities. Examples include the contract of sale between the exporter and importer; insurance contracts; carriage contracts involving the exporter, importer, and shipper; and financial contracts associated with payment arrangement and letters of credit. Unlike contracts executed within a country, global trade contracts are often negotiated within a complex framework of local laws and traditions, multilateral governmental agreements, and international treaties. Sometimes there is even debate about what a contract represents in the first place.

Since there is no set of jurisprudence and legal expertise common to all nations to govern contracts, global traders depend on a universally accepted trade law termed *Lex Mercatoria*. David and Stewart define this convention as

The sum total of all the international agreements, international conventions, and other international trade customs that complement the domestic laws of any given country, and to which all international trade transactions are subject. [21]

Lex Mercatoria is complex because it includes a number of different international source of law and jurisprudence such as United Nations treaties and other decisions; international agreements, such as the General Agreement on Tariffs and Trade (GATT); the World Trade Organization (WTO); European Union conventions; NAFTA; and others. For the most part, contracts of sale are covered by the United Nations Convention on Contracts for the International Sale of Goods (CISG). Established in 1980, the CISG has been ratified by more than 60 countries and represents more than 80 % of all world trade. CISG is substantially different from the Uniform Commercial Code (UCC) of the U.S., noticeably in contract formation and remedies in the instance of nonconforming goods or late delivery.

Another type of contract is one executed between an exporter and its representatives (agents and distributors) located in foreign markets. An agent represents the exporter who,

for a commission, performs the duties of promoting and executing the exporter's products in the local market. Both represent the decisions regarding price, delivery and other sales terms specified in their contracts. A possible issue is whether the courts in a dispute will consider the contract as "between equals" or between "unequal partners." When the former is the case, normal contract law will be applied; in the former, the practice is to ignore the terms of the contract and apply local laws to arrive at a remedy.

14.4.2.5 Pricing [22]

Closely aligned with terms of sale is global pricing. Similar to the process of determining domestic prices, global prices are set in accordance with the price-setting behavior of competitors, customers' ability to buy in various national markets, strategic cost and profit goals, place of product in the product life cycle, and local legal and pricing regulatory environments. At the base of international pricing is the problem of *price escalation*. For example, a product made in the U.S. would sell in the domestic market for US\$100, but in Europe the price might escalate to US\$205. The difference between the two prices is the cost to the exporter for transportation, tariffs, importer margins, wholesale margins, and retailer margins above the factory cost. To solve this problem, exporters have three options. A company may, first of all, establish a *uniform price* for all markets. When pursuing this policy, all nations, whether rich or poor, would pay the same price. A second method would be to set a *market-based price in each trading country*. In this strategy, the firm would charge what each country could bear. Finally, a firm may pursue a *cost-based price in each country*. Selling price would be cost plus a standard markup. In any case, prices for products sold in foreign countries are likely to be higher than in domestic markets.

There are several additional pricing problems in global trade. The first involves the price the domestic country charges a foreign subsidiary or *transfer price*. If too high a price is charged, the company may end up paying higher tariff duties. On the other hand, if it charges too little, the company may be accused by the importing nation of *dumping*. Dumping occurs when a company charges less than cost or less than what it charges in the domestic market in order to enter or win a market. When such abuses are caught, various governments force the subsidiary to charge the *arm's-length price* or the same price as being charged by local competitors. Another pricing problem occurring when a distributor in a low-cost country buys excess product and diverts some of the quantities to a high-cost country to capitalize on higher prices (termed the *gray market*). The European Union has been able to virtually eliminate this practice through a common currency. Another leveling practice is the use of e-commerce. Customers can easily compare prices from different vendors and choose the lowest one.

Once a pricing policy has been determined, actual pricing is governed by the terms of sale. The pricing set by the terms of sale differs in the way transportation, insurance, tariffs, and other costs are incorporated into the total price. Prices charged at the point of origin are normally the domestic selling price minus any export discounts. Beyond *Ex* (point of origin) pricing, pricing schemes normally fall somewhere in between two basic methods: *ex works*, where the foreign customer bears the freight and insurance costs, and *delivered* pricing. When using delivered pricing, the shipper's price includes not only the price of the goods but the cost of transport, customs, tariffs, insurance, documentation, and other expenses. Delivered price provides certain advantages. To begin with, the seller gains control over the distribution process, thereby ensuring customer service and pricing competitiveness.

Second, the seller may be able to obtain bulk discounts, which ultimately allows price reduction. Finally, delivered pricing has the effect of increasing the nation's balance of trade and utilization of domestic logistics services.

There are several forms of *FOB* pricing depending on the type of carrier. The price is basically a composite of the transportation costs associated with packing, marking, loading, and transit freight costs. To this price is added other charges for unloading/loading, material handling, and transit duties. *CFR* pricing includes the *FOB* cost plus the ocean freight charge, export license, and export duties and taxes. *CIF* pricing consists of *CFR* cost plus marine insurance. *Ex ship* and *ex quay* pricing consists of *CIF* costs plus expenses for consular invoices, certificate of origin, unloading, import licenses, tariffs and taxes, customs clearance, and additional marine and war risk insurance coverage.

14.4.2.6 International Trade Financials

An enterprise involved in global trade is faced with a number of financial issues that are not present in the domestic market. These issues are concerned with such factors as cash flow and currency conversion, fluctuating cost for inventory, the role of government, and methods of payment. Without a doubt, cash flow is of prime importance. Typically, global companies need a great deal of working capital to pay for plant and equipment, transportation services, inventories, and credit. Much of the reason lies in the great distances goods have to travel and the normal administrative delays encountered in foreign trade. Even when the transactions are relatively simple, customs clearance, the transfer of international payment documents, government restrictions, and shipment disputes can hold up payment. In addition, variations in the rate of currency exchange can severely impact capital planning. This is particularly true when it is considered that the value of the currency upon which the price was based could devalue between the time of shipment and the time of delivery. For this reason, very few global transactions are financed by payment in advance or cash on delivery. Besides cash flow issues, currency variation will have an effect on local costs associated with warehousing, labor, transportation, information processing, and other costs. Finally, there are also potential collection issues arising from inadequate credit reports on customers, problems of currency exchange controls, distance, different legal systems, and the cost and difficulty of collecting delinquent accounts.

While it has been pointed out that international trade requires exporters and importers to detail the *terms of trade* (who has responsibility for what trade activities as specified in the Incoterms[®]), two other issues need to be resolved: the *terms of sale* (the agreed upon method of payment) and the *currency* used for the trade transaction.

Terms of Sale. There are essentially six basic forms of rendering payment in a global transaction. Each of these methods has its advantages and disadvantages, but in the end the form of payment is determined by weighing the risk of not getting the sale versus the risk of nonpayment. Trade with high risk countries usually warrants less risky methods such as cash in advance or a bank letter of credit. Using such conservative methods, however, risks the potential of lost sales.

- *Cash in advance.* In this method, the exporter requires payment in advance before shipment of the goods occurs. The transaction is performed by an electronic transfer of payment from the importer's to the exporter's bank. In this method, all of the risk is

placed on the importer and is the recommended method when dealing with very risky trade transactions.

- *Open account.* In this method, once the goods are shipped, the exporter sends an invoice to the importer. The exporter expects payment based on the accounts payable agreement executed between the two parties. The agreement will state such key provisions as number of days until past due, possible early payment discounts, cost of risk insurance, and possible interest charges on late payments. This form of payment is only used when the exporter has established a firm partnership and feels that there is minimal risk of nonpayment from the importer.
- *Letter of credit.* In this method, a bank in the importer's country issues a commercial letter assuring the exporter that the importer can make payment for the purchase of goods and that the bank will honor a draft issued by the importer up to that amount. The letter of credit is therefore a contractual agreement between the issuing bank and the exporter independent of the exporter/importer relationship. This means that the bank, if the importer is unable to pay, is contractually obliged to pay the exporter. There are three types of letter of credit:
 - *Irrevocable.* This type of letter of credit cannot be canceled by the issuing bank without the consent of the exporter. Most letters of credit are executed as irrevocable.
 - *Confirmed irrevocable.* In this situation, a foreign bank issues the letter of credit and it is guaranteed by a bank in the exporter's home country. The drawback of this option is that it is more expensive than an irrevocable letter of credit.
 - *Revocable.* Normally, this letter of credit is really a pro-forma document to be used as a basis when preparing irrevocable letters of credit.

A letter of credit would be used when there is a significant risk of nonpayment.

- *Documentary collection.* In this method, the importer asks the bank not to release key shipment documents, such as bill of lading which transfer ownership of the shipment, until the importer pays for the shipment or promises to pay within a certain time window.
- *Procurement cards.* Using the idea of the standard *P-card* used in domestic purchasing, a bank offers credit cards to be used by the importer. Similar to a consumer credit card, a procurement card allows an importer to make purchases directly with an exporter. When the transaction is completed, the bank immediately pays the exporter, minus a certain transaction percentage usually around 2 %. This method present a very low risk way of conducting international trade.
- *Direct debiting.* With the advent of the Internet and electronic networking, most global trade systems enable direct, electronic debiting of an importer's purchase and immediate payment into the accounts payable of the exporter. How the process works is when the shipment takes place, the exporter's accounts receivable module automatically debits the bank account of the importer, subject to the payables agreement executed between the two parties. This type of automatic payment is fundamental to e-commerce.

Currency Issues. Beyond terms of trade and terms of sale, companies engaging in global trade must be aware of currency issues. When selecting a currency for the transaction, three options exist: use of the exporter's currency, the importer's currency, or a third party currency. When deciding on the currency, two factors should be considered:

- *The risk of currency fluctuation.* This factor is associated with the possibility of currency gain or loss and who is incurring the risk. If the exporter's currency is used, the importer incurs the risk, and vice versa. This risk can be mitigated significantly by using a benchmark currency such as the U.S. dollar or the euro.
- *The convertibility of the currency.* This factor is associated with the ease in which a currency can be converted into other currencies. A currency that can easily be converted into another currency is termed a *hard currency*; a currency that is not easily convertible is termed a *soft currency* or one that cannot be converted at all is termed an *inconvertible currency*.

A final issue to consider is the use of *exchange rates*. An exchange rate is the value of one currency expressed in units of a second currency, for example U.S. dollars into euros. An exchange rate used for immediate trade is termed a *spot exchange rate*. For longer-term risk management, parties may engage in *currency hedging*. Some of the financial instruments available is using a *forward exchange rate* where the parties are committed to a forward currency contract to be delivered 30, 90, 180 days, or 1 year from the quote. Other tools used in hedging are currency futures (where currencies are traded in futures' markets similar to other commodities such as wheat and corn), swaps, and options.

14.4.2.7 International Trade Documentation

Another aspect differentiating international from domestic distribution is the additional documentation. International trade documents must be completed in a very specific fashion taking into consideration such things as the country of destination, the type of goods, the method of transportation, the method of financial settlement, the bank(s) involved, and more. In addition, these documents must contain very detailed information and filed in a certain time frame with the right administrative trade bodies. A problem that is just recently being overcome is the requirement of many nations that all trade documents be issued in paper in favor of electronic versions issued through software such as a global trade management (GTM) system.

International trade documentation can essential be broken down into six basic types. While this text will not go through all of the various types of documentation the more important ones will be singled out [23].

Invoices. The invoice is simply the bill for the shipment to be paid by the importer. There are several types of invoice:

- *Commercial.* This is the most recognizable type of invoice which is presented to the importer upon shipment and receipt of commercial goods. The invoice contains a very precise definition of the goods shipped, the terms of trade (Incoterms[®]), all order charges, and the terms of payment and currency.

802 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

- *Pro-forma invoice.* This type of invoice is actually a quote detailing the final cost of an anticipated order provided by the exporter to the importer for the purpose of the importer obtaining a letter of credit.
- *Consular.* This type of invoice is nothing more than a commercial invoice that is printed on stationary provided by the consulate of the country in which the goods will be imported.

Export Documents. The purpose of export documentation is to record data about what products have been exported from a country.

- *Export license.* This document is used to attain authorization from the exporter's government for the shipment of a specific product. Normally, governments require export licenses to control foreign trade for political or military reasons.
- *Shipper's export declaration.* This document is required by U.S. customs for all exports valued at more than US\$2,500 per item category (as determined by the Harmonization Codes) and that require a valid export license.
- *Export taxes and quotas.* Some countries require exporters to pay taxes on certain goods as well as conform to all quotas on certain exported goods.

Import Documents. There are several objectives for using import documents. Among the uses are ensuring that only quality goods are imported; determining the proper tariff classification and the correct value of the goods; protecting local importers from fraudulent exporters; and to limit the volume of certain imported commodities.

- *Certificate of origin.* This is the most common import document which must be signed by the exporter's Chamber of Commerce authenticating that the goods *originated* from a certain country. This document is also used by importing countries to determine the tariff to be applied to the goods.
- *Certificate of manufacture.* This document, provided by the exporter's Chamber of Commerce, authenticates that the goods to be imported were produced in the country in which the exporter is located.
- *Certificate of inspection.* This document, provided by an independent inspection organization, validates that the imported goods conform to their stated description.
- *Certificate of certification.* This document, provided by an independent inspection organization, validates that the imported goods conform to the standards set by the importing country.
- *Import license.* This document must be obtained by the importer from the importing country (mostly developing nations) authorizing the importation of a particular product or commodity.

Transportation Documents. These documents govern the transportation of goods and commodities.

- *Bill of lading (BOL).* The BOL fulfills three critical roles in transportation: it is a *contract* in which the transportation agrees to transport goods from one place to

another and to deliver to a designated consignee; it is a *receipt* for the goods signed by the consignee; and it is a certificate of title to ownership of the goods. In case of loss, damage, or delay, the BOL is the basis for filing freight claims. There are several types of BOL: an *ocean BOL* is used for goods on oceangoing vessels; an *air waybill* is used for goods transported by air; a *soiled (foul) BOL* reflects the fact that the goods transported are damaged in some way; a *clean BOL* reflects the goods transported are in good condition; a *uniform BOL* is used in the transportation of goods on trucks and trains, domestically or internationally; an *intermodal BOL* is used in intermodal transportation of goods domestically or internationally.

- *Packing list.* This document always accompanies the shipment and specifies the exact content of the shipment, such as number of boxes or containers. Some shippers combine the invoice and the packing list in one document.
- *Shipment of dangerous goods.* There are several forms of this document depending on how the goods are transported, the nature of the hazardous goods, and country of import.
- *Manifest.* This document is internal to the shipper and lists the exact makeup of the cargo, its ownership, its ports of origin and destination, special handling instructions, and so on.

Electronic Documents. Over the past several years, international trading companies have been migrating their documentation to two forms of electronic transfer.

- *Electronic Data Interchange (EDI).* This technology sends international trade documents from the shipper's computer to the buyer's computer expressed in a format acceptable to both parties.
- *Internet networking.* This technology uses the medium of the Internet to transmit international trade documents from the exporter to the various trade intermediaries, ending with the final receiver of the goods.

14.4.3 GLOBAL TRADE MANAGEMENT (GTM) SYSTEMS

Companies going global today are beset by a range of problems: unexpected transportation costs, increasing regulations, higher inventory investment, and longer and more unpredictable cycle times, while experiencing demand for lower costs, more unique services, and improved responsiveness. Many shippers working in the global market know that the typical international transaction involves up to 30 different parties, 200 data elements, and 40 or more documents. In addition, shipments are expected to arrive on time, complete, and within budget. As a result, businesses are searching for ways to render global supply chain processes more reliable, more flexible, and less expensive. As the increased risk and complexity associated with the effective management of export/import cost management, government compliance, documentation, and security regulations grow, companies have been turning for solutions to a relatively new software application termed *global trade management* (GTM).

Historically, global trade management was a small part of a typical company's business, run typically through stand-alone spreadsheets. Today, managing the flow of goods,

804 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

information, and money across borders (totaling more than \$32.5 trillion in 2008) is a highly complex, regulated, and dynamic process that can no longer rely effectively on manual processes. In some ways, a GTM solution can be considered as simply supply chain management applications with a world-wide reach. As illustrated in Figure 14.9, a GTM system links the exporter's ERP/WMS systems to a set of software applications that enable global trade departments to optimize, automate, and monitor transactions with trading partners and service providers. Transaction data used by the exporter, its vendors, LSPs, customers, and other trading partners flows through a central GTM platform. The flow of data, in turn, triggers other transactions and the system ensures each party receives the information it requires. For example, an international importer might use GTM functionality to transmit purchase orders, share information with suppliers, book transportation, track shipments, and perform several other activities involved in global procurement and moving goods.

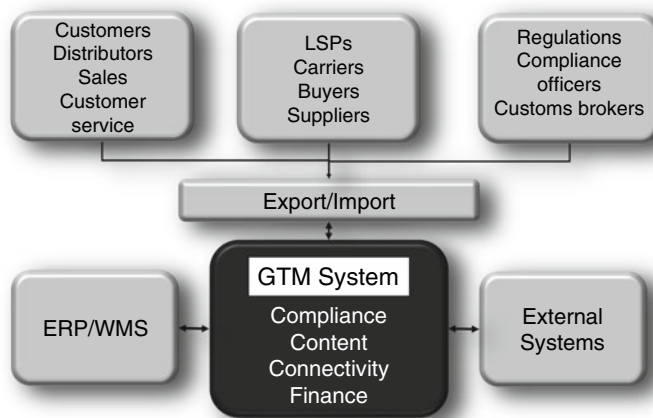


FIGURE 14.9 GTM system architecture.

The components of a GTM system are defined as a software solution that manages global trade events by achieving efficiencies and excellence in four critical areas:

- *Compliance.* Functionality in this area provides capabilities focused on automating customs and regulatory compliance activities, such as product classification, restricted ship-to party screenings, and embargo checks, trade documents, calculation of total landed costs, assignment of export and import licenses, electronic communication with legal authorities, management of customs processes and transit procedures, and determination of preferential trade eligibility. A GTM can also help global traders profit from foreign trade agreements and FTZs, and participate in security programs such as C-TPAT.
- *Content.* This area is concerned with establishing accurate and complete trade content for every country a company trades with in order to successfully comply with trade regulations and prevent customs clearance delays. Such data include denied parties and embargoed countries; harmonized system chapters and descriptions; license

codes, descriptions and requirements; document templates; and value-added tax, excise tax, and seasonal tax. Real-time databases of import duties, tariffs, and other charges, as well as exemptions, help shippers calculate complete landed costs. A GTM enables global traders to update the “trade content” continuously, so that any time a shipper performs a transaction, the system applies the latest information automatically.

- *Connectivity.* Establishing and maintaining connectivity with trading partners, as well as keeping up with customs modernization efforts around the world, is a critical component of a GTM system. Because global trade involves multiple transportation modes, a GTM connects those modes so shippers know where their goods are and identifies and improves bottlenecks and finds cost reductions. With a complete picture of the global supply chain, global companies can better manage inventories. Many of today’s GTM software vendors have solutions utilizing cloud computing; other vendors enable companies to host the system inside their firewalls.
- *Finance.* Global trade requires the effective management of transaction financing. A GTM must be able to create, present, and manage all documentation required for export and import letters of credit. For more advanced relationships, companies can use GTM functionality for open account payment methods to support international trade transactions. This method streamlines paperwork and documentation, automates invoice flows, and protects transactions from exceeding credit limits.

Today’s GTM attempts to assist global traders solve several key challenges: gaining visibility to the global supply chain; leveraging essential financial tools to achieve increased bottom-line results; modernizing the antiquated global trade management process; and ensure global compliance requirements are met. An effective GTM system enables global traders to focus on these challenges by increasing overall supply chain efficiency. The following five essential advantages are provided by a GTM [24]:

- *Streamlining the export management process.* A GTM relieves global traders of the task of manually screening every order from an international customer to ensure the customer and associated parties are not on the sanctioned party lists of various governments and that they conform to export license requirements. GTM functionality instantly either clears or inhibits orders, preventing shippers from experiencing costly bottlenecks and delays in shipment.
- *Elimination of order processing delays.* After order authorization, global shipments are subject to an array of documents that must be completed accurately and filed correctly. When it is considered that around 10 % of international orders are delayed due to documentation or license requirements errors, such delays can significantly affect delivery and customer satisfaction promises. An effective GTM enables shippers to notify customers of violations in a timely fashion and avoid potential fines due to non-compliance.
- *Visibility to landed costs.* GTM systems enable global traders to quickly and accurately determine shipment landed costs and to factor in decisions on product pricing, rebates, and discounts. A clear understanding of landed costs assists global companies to locate plants, production sites, and warehouses in countries where landed cost is lower due to smaller import duties on materials and finished goods.

806 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

- *Reduction of inbound shipment delays.* By providing visibility to shipment status and ensuring the right documentation is prepared and ready, a GTM can assist in significantly lessening customs delays. In the very near term, this means importers can carry less inventory and still maintain targeted levels of customer service.
- *Streamlining financial trade.* A GTM facilitates the accurate and complete submission of financial instruments, such as Letter of Credit documents, thereby reducing payment delays and additional fees.

14.5 INTERNATIONAL PURCHASING

As was discussed in Chapter 11, the outsourcing of materials, component, and finished goods to companies across global space and time has become a critical strategic in the quest for competitive advantage in the twenty-first century. Increasingly, global purchasing decisions are having an important impact on product quality, delivery reliability, increased flexibility, and cost competitiveness. As companies intensify their dependence on global partners and expand their use of e-commerce to leverage the competencies of low-cost countries and reach new markets in far-away lands, planners have increased their efforts to use global purchasing to search for new sources of supply outside the domestic market. The effective management of this movement toward international sourcing is pivotal to the acquisition of the best products to meet ever-accelerating levels of customer service and cost efficiencies to match global competitors.

14.5.1 OVERVIEW

Historically, U.S. firms first embarked on a serious concern with importing products and raw materials as far back as the 1960s. At that time, the motive was purely to reduce the cost of labor. By the 1980s, this central concern with cost reduction, a somewhat negative approach to foreign sourcing, began to be replaced by the realization that a number of dramatic changes in the global economy had altered the traditional view of international sourcing and ushered in the current era of globalization. There have been several changes in the basic business mechanisms of nations that have facilitated the emergence of international purchasing as a strategic weapon.

To begin with, the growing competitive intensity and interdependence of the global marketplace, complicated by pressures in all countries to reverse trade deficits, have “internationalized” the purchasing function. Second, pressures to reduce costs while simultaneously increasing quality and customer satisfaction in mature markets has pushed purchasers to look for the best, and lowest-cost sources of supply, either domestic or foreign. Third, purchasers regard importing foreign components as a way to increase their company’s flexibility to quickly retool product design, production processes, and delivery channels. Capital invested in new products and process equipment is expensive and restricts the firm’s ability to rapidly respond to changes in the market. Importing components permits them to sustain “world-class” leadership by purchasing demonstrated international engineering, technological, and process capabilities. Leveraging the competencies of supply partners enables companies to reduce cycle times for new product development and increased quality. Finally, importing provides purchasers with the ability to leverage the technologies

and cost-efficiencies of other nations to acquire commodity-type components and mass-distributed finished goods such as industrial machinery and consumer electronics. Instead of being merely a market for cheap labor, overseas suppliers are now viewed as prime sources of strong production and distribution expertise that enable businesses to be as agile and close to the demand-pull of the customer as possible.

14.5.2 ADVANTAGES OF INTERNATIONAL SOURCING

There are many reasons for today's purchasing function to explore international sources of supply. Key sources of value-add are:

- *Availability.* Due to the growth of foreign competition, many products that were once made domestically are now available only through international sources. Among such products are many electronic components, machine tools, capital equipment, specialty metals and alloys, and electromechanical equipment.
- *Quality.* Many buyers look to global sources for products that meet the levels of quality demanded by the marketplace. Although the quality and JIT/lean movements in U.S. manufacturing have enabled many domestic producers to quickly close past "quality gaps," the lead in quality seized by some foreign companies provides buyers with little alternative but to purchase from them.
- *Timeliness.* As lean techniques and management styles continue to decrease inventories, the need for reliability in meeting schedule requirements correspondingly has grown in proportion. Many purchasers have had to import products from global companies who have developed philosophies, production, and delivery techniques focusing on 100 % customer satisfaction at significantly less-than domestic prices.
- *Continuity of supply.* Increased demand and competition for goods worldwide have made purchasers sharply aware of possible shortages in raw materials and finished components due to strikes, economic downturns, or even political unrest. Today's purchasers must be aware of and cultivate alternative sources of supply to ensure continuity of product availability.
- *Cost/price.* Generally, foreign companies have been able to offer international buyers lower prices on goods because of lower material, labor, and overhead costs. This is particularly true of products, such as textiles, apparel, shoes, molds and dies, assembled components, and automobiles. Coupled with this advantage, some foreign producers also possess specialized skills, technologies, or patent rights that provide them with an overwhelming competitive advantage. In exploring cost advantages, buyers must be careful to calculate the total landed cost, including transportation, communication, import duties, source investigation and so forth, when pursuing global sourcing.
- *Technology.* Many foreign nations have historically prided themselves on the high level of craftsmanship and quality that characterizes their products. Today, there are many foreign nations, particularly Japan, Germany, and China, which possess strong technology competencies in some industries comparable to U.S. companies who often are charging a higher price. Buyers who do not take advantage of this technological leadership to acquire high-quality products might find themselves losing to competitors that do. In addition, the strong technology competencies of some foreign

companies may permit other firms to “acquire” the technology without investing in the development of the process itself. Importing the products of these technologies permits companies to remain focused on core competencies while leveraging imported components to offer to the market a wide variety of highly competitive products.

- *Market entry.* Some nations require foreign exporters to also buy from their country, or have a certain percentage of the export product be produced from materials or components originating from the home country. International purchasing requires buyers to know the overall sources of products if they are to effectively procure components or finished goods in support of marketing, production, and sales plans.

14.5.3 COUNTERTRADE PURCHASING

Countertrade defines any transaction in which payment is made partially or fully with goods instead of money. Countertrade links together two normally independent functions: the export of sold goods to a specific country and the import of purchased goods from the same country. Countertrade occurs for a number of reasons. For example, the importing country has balance-of-payments, currency exchange, or political restrictions preventing cash purchase. Sometimes this condition is imposed by governments in an effort to promote local products or to gain imports while also keeping currencies inconvertible. In this environment, countertrade provides certain advantages such as facilitating sales, expanding competition, improving profit potential, opening responsive markets, developing new capabilities, and retarding inflation. There are, however, drawbacks. It complicates purchasing, adds administrative costs, extends transportation time and cost, incurs duties and taxes, drains home technology resources, and imposes unfamiliar activities to be performed.

There are five types of countertrade. These types, in turn, are driven by four variables: (1) the nature of the goods, (2) the percent of payment made in goods, (3) length of time before full payment is made, and (4) the number of parties involved [25]. The five major types of countertrade are:

- *Barter.* This is probably the oldest form of transaction. Barter is the direct exchange of goods or services or both between two parties without the exchange of cash. Problems with this type of countertrade are the normal lag in time before goods are fully received, the possibility that one party may receive goods they cannot use, or one party receives goods that are less than the expected value.
- *Counter-purchase.* Many times two companies will agree upon reciprocal buying arrangements. Both companies agree to buy the products of each, pay for the majority of their purchases in cash, and fulfill their mutual sales obligations within a specified time period.
- *Offset.* This type of countertrade is similar to counter-purchase. The difference is that some or 100 % of the counter-purchase obligation is offset by buying from any company in the foreign country. Offset countertrade agreements are normally executed with countries with centrally planned economies.
- *Compensation or buy-back.* In this type of countertrade a company agrees to build a plant or supply technology, equipment, and/or technical advice to a foreign country, and, in exchange, takes a percentage of the output from the facility as payment. Occidental Petroleum, for example, negotiated a US\$20 million deal with Russia to

build several plants there and receive ammonia over a 20-year period as partial payment. Normally, the host country receives ownership when the terms of the agreement are completed.

- *Switch-trading*. This countertrade method utilizes a third-party trading house that buys the selling company's counter-purchase goods, services, or trade credits, and sells them to another company that requires them.

Purchasing plays a key role in countertrade. On the strategic side, a successful global countertrade system requires effective global purchasing planning. It is the role of purchasing to develop the long-term relationships with foreign suppliers necessary for the effective acquisition of products, skills, and technologies from across the globe in support of internal enterprise production and distribution requirements. In detail, it is purchasing's responsibility, along with marketing, to pursue, negotiate, and schedule delivery of those products whose value will assist in competitive sourcing. Also, it is purchasing's role to monitor and control the costs involved in countertrade transactions. These costs are comprised of the cost of fees paid to trading agents and companies and the discount from the perceived or fair-market value of the goods versus the value actually received.

14.5.4 INTERNATIONAL PURCHASING MANAGEMENT PROCESS

Perhaps the best way to look at the process of international purchasing is to divide it into several critical activities. As illustrated in Figure 14.10, the first step is to identify that a foreign source is necessary or economically feasible for the procurement of raw materials, a component, or a finished good. This step could be undertaken for a variety of reasons: product unavailability in the domestic market, requirements for a higher level of quality than can be found from domestic suppliers, search for alternate suppliers other than domestic sources, and search for lower-cost alternatives. In addition, more detailed criteria, such as the length of the supply line, strategy for supplier partnership and involvement, stability of product design, completeness of engineering documentation, length of the product life cycle, superiority of production methods, necessary materials and tooling, and terms and conditions of contracts, are also critical criteria that must be determined ahead of any outsourcing negotiation.

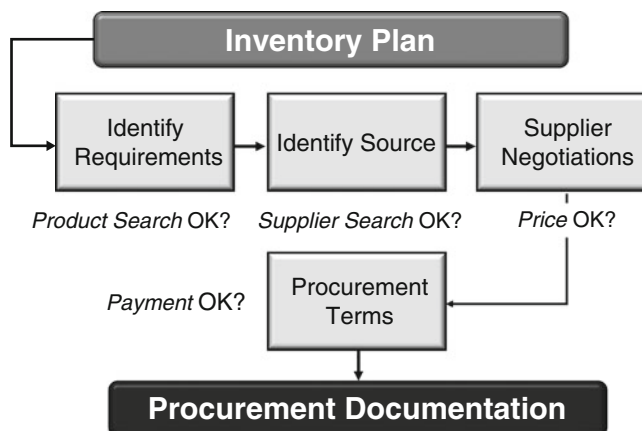


FIGURE 14.10 International procurement process.

810 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

As procurement planners begin to map out the first leg of the process, it is critical that they also detail the drawbacks as well as the advantages of international sourcing. In most cases, purchasing from foreign sources is a good deal more difficult than buying from domestic sources, requiring the ability to solve not only the same kind of problems encountered in domestic procurement but also problems accentuated by language, culture, currency, transportation, and government regulations. The contrast between domestic and global purchasing are illustrated in Table 14.4. In managing these and other differences, global purchasers must continually review foreign sourcing to ensure that anticipated advantages associated with lower prices, better service, quality, and technological innovation do not evaporate over time.

TABLE 14.4. Comparison Between Global and Domestic Purchasing

Domestic purchasing	Global purchasing
<i>Culture</i> Single nation and culture	Multinational/multilingual factors
<i>Communications</i> Single language; short lines of communication	Multilingual; long, complex lines of communications
<i>Currency exchange</i> Single currency	Currencies differing in stability and value
<i>Customs regulations</i> Relative freedom	Complex customs and tariff requirements
<i>Lead times and inventories</i> Stable/decreasing lead times and inventories	Long lead times and large safety stocks; need for repackaging and relabeling
<i>Payment</i> Cash and credit transactions	Letters of credit, electronic payment, and countertrade
<i>Quality</i> Common quality standards and specifications	Different standards of quality
<i>Government involvement</i> Minimal interference	Direct involvement in national economic plans
<i>Economic stability</i> Uniform economic environment	Variety of financial climates ranging from over-conservative to wildly inflationary
<i>Operational coordination</i> Easy access to plant visits and technical assistance	Long-distance coordination with local managers

Once the determination to use a foreign source is made, the next step is to begin the search for a global partner. This step can be as easy as making a phone call or as complex as a small project. Information concerning prospective suppliers can be gathered from trade journals and newspapers, directories of manufacturers and distributors, government trade lists and surveys conducted by the U.S. Department of Commerce, professional purchasing associations, global trade brokers, and word of mouth. A critical part of the process is deciding whether the goods are to be purchased directly from a foreign supplier or indirectly

through a trading intermediary. If the latter is chosen, purchasing will have the choice of working with import merchants, commission houses, manufacturer's/distributor's agents, import brokers, or trading companies. Some of these intermediaries assume financial risk and carry inventory; brokers and agents, on the other hand, do not.

Global purchasers that choose to buy direct must perform the services normally executed by intermediaries. Besides administrative functions, the most important of these services is qualifying the prospective supplier. Intermediaries, through long experience, know the international market and can make arrangements with the best foreign companies. When buying direct, the importing company must verify the supplier on its own. Among the criteria that should be used are: (1) evaluation of the supplier's experience and management expertise in global trade; (2) supplier's financial strength and capability to meet requirements for new equipment and inventories; (3) availability of excellent communications for speedy decision-making on markets, equipment, and inventory control; (4) ability to maintain levels of inventory necessary to meet longer lead times and faster delivery; and (5) willingness of the supplier to enter into a long-term partnership. Sometimes firms with strong global purchasing functions will establish foreign offices to assist in supplier relations. Such offices normally cost less than intermediary fees; provide purchasing with better controls over price, quality, and delivery; provide more current information; and encourage better understanding with the supplier [26].

With the selection of prospective suppliers, the next step in the global purchasing process is *request for quotation* (RFQ). The purpose of this step is to detail the purchase requirements and evaluate the total landed cost of the proposed purchase. The former consists of such elements as submission of necessary specifications and drawings, statement of quality requirements, special packaging needs, likely lead times, and estimated annual volume and quantities. Calculating the total cost also requires extensive analysis. Closely monitored costs ensure that price advantages are not lost over time due to cost changes that erode the initial total landed cost advantage. Among the cost elements to be considered are transportation, customs duties, tariffs, licenses, transfer fees, taxes, insurance and broker costs, inventory carrying costs, risk of damage or spoilage, fees for documentation, terminal and port costs, and letters of credit.

Of particular importance in price negotiation is currency valuation management. One of the realities in international purchasing is that no matter what currency is used for the base price, fluctuation in exchange rates will ultimately shift currency values. Currency fluctuation is influenced by such factors as government policies, domestic interest rates, recession, inflation or deflation, and relative balance of trade. There are several strategies purchasers can use to counter currency fluctuations. The most radical approach is to insist that negotiation and payment be executed in the home currency. Another alternative is for buyer and seller to split fluctuations in value either 50/50 or by some other agreed upon formula. Many buyers will negotiate a price along with a variance, say of plus or minus 5 %. If the price exceeds the variance threshold, buyer and seller would equally share in the variance. Finally, some companies hedge currency fluctuations by purchasing fixed rates via currency futures or forward contracts [27].

Negotiations with prospective foreign suppliers, once price and product issues have been resolved, require purchasers to acquire a good deal of understanding and insight about the supplier's country and customs. Although the normal planning activities associated with a negotiation, such as team membership, establishment of objectives, and issues up for

812 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

compromise, are critical, purchasers must be prepared to tailor the process to meet the often very different practices and perceptions of foreign negotiators. One of the most critical decisions to be resolved during negotiations is shipping terms and method of payment. Most of the Incoterms[®] reviewed earlier in this chapter relating to exports (Table 14.2) also apply to product imports. Among the most common are FOB, Ex Works, FAS, CFR, CIF and DDP. Traditionally, a number of payment methods are used when transacting international trade including the following:

- *Cash in Advance.* Often when buyers do not have a good credit rating or are unknown, or when the buyer's country is politically or economically unstable, sellers will require them to pay for purchased material in advance.
- *Open Account.* Although this is the preferred method of payment for domestic business in the U.S., it is not often used in international purchasing. The reason stems mostly from the uncertainties in currencies and international political conditions.
- *Drafts.* This is currently the most widely used of the payment methods. A draft is a negotiable instrument that contains an order to pay. When a sale takes place, the seller forwards the transfer documentation and draft through its bank to the buyer's bank for payment. A *sight draft* is executed when the buyer pays the draft. A *time draft* requires that the buyer pay the draft on a specific due date. In a *clean draft*, the seller presents its draft to the buyer for collection and the transaction documents are delivered directly to the buyer.
- *Letter of Credit.* In this method, letters of credit are arranged by the buyer with a bank, and the supplier can draw payment against the credit with the submittal of the appropriate transaction documents.

The final area relating to pricing and terms is the payment of tariffs or duties on imported goods. Tariffs are used by countries as a method for revenue generation, a device to protect domestic industries, and a means to discourage the importation of certain products. There are three major types of tariffs: ad valorem, specific, and compound. *Ad valorem*, the type of tariff most applied, is calculated as a percentage of the appraised value of the goods received. A *specific* tariff is defined as a specified amount per unit weight or other unit of measurement. For example, \$0.20 per gross. Finally, a *compound* tariff is calculated as a combination of both an ad valorem and a specific rate. The payment of tariffs can be delayed by warehousing goods in a *free-trade zone*. Tariffs are not paid on the goods until they are removed from the free-trade zone and sold. Another method used by firms that re-export products is a duty *drawback*. The drawback provides for a 99 % refund of ordinary customs duties paid when the goods were originally received.

The last step in the international purchasing process is the completion of the trade documentation. Whether handled by an international freight forwarder, customs-house broker, or the company's own agents, the proper execution of documentation is critical. The following represents the key purchasing import documents:

- *Arrival Notice.* This document is sent by the carrier and informs the buyer of the estimated arrival date of the shipment, identifies the shipment with details such as number of packages and weight, and indicates when "free time" will expire. The notice is often used as a freight bill.

- *Customs Entries.* There are several different types of forms used when entering imported goods into the U.S. The first type, *consumption entry*, is required of all entering goods by U.S. Customs. The form contains information as to the origin of the cargo, a description of the merchandise, and estimated duties applicable to the particular commodity. Estimated duties must be paid when the entry is filed. The second type of entry form, an *immediate delivery entry*, is used to expedite the delivery of cargo. It allows up to 10 days for the payment of estimated duty and processing of the consumption entry. In addition, it permits delivery of the cargo prior to payment of the estimated duty and then allows subsequent filing of the consumption entry and duty. It is also known as “I.D. entry.” The third type of customs entry, *immediate transportation entry*, allows the cargo to be moved from the pier to an inland destination via a bonded carrier without the payment of duties or finalization of the entry at the port of arrival. It is also known as an “I.T. entry.” The final type of customs entry, *transportation and exportation entry*, permits goods coming from or going to a third country to enter the U.S. for the purpose of transshipment. It is also known as “T&E entry.”
- *Carrier’s Certificate and Release Order.* This document is used to advise U.S. Customs of shipment details, ownership, port of lading, and other information. By means of this document, the carrier certifies that the company or individual named in the certificate is the owner or consignee of the cargo. It is commonly known as the “Carrier Certificate.”
- *Delivery Order.* This document is issued by the consignee or authorized customs broker to the ocean carrier providing authority to release the cargo to the inland carrier. It includes all data necessary for the pier delivery clerk to determine that the cargo can be released to the domestic carrier. This document is also known as a “Pier Release.”
- *Freight Release.* This document provides evidence that the freight charges for the cargo have been paid. If in writing, it may be presented at the pier to obtain release of the cargo (Normally, once the freight is paid, releases are arranged without additional documentation). It is also known as a “Freight Bill Receipt.”
- *Special Customs Invoice.* This is an official form usually required by U.S. Customs where the rate of duty is based on shipment value exceeds \$500. The document is usually prepared by the foreign exporter or authorized forwarder and is used by Customs in determining the value of the shipment. The exporter or designated agent must attest to the authenticity of the data furnished.

The execution of the international purchasing process is significantly different than domestic purchasing and must be effectively managed if it is to be successful. As illustrated in Figure 14.11, the first step is the development of a formal global purchasing plan. This exercise should detail international sourcing requirements, the methods to be followed for achieving these requirements, and how the strategy is to be aligned with and supportive of overall enterprise goals. The second step is the organization of an international purchasing function whose role is to gather information and evaluate opportunities, as well as execute the activities associated with managing global channel inventories, foreign negotiations, pricing, and delivery issues. This department can be organized several ways, including the use of a resident foreign purchasing office, import broker, merchant or international trading company, or formal structure within the corporate purchasing function. Third, the

814 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

international purchasing organization needs to be closely integrated with other company and channel functions. This will assure that individual departmental objectives as well as the supply chain strategy are effectively supported. Finally, the purchasing planners must devise detailed procedures that assist in international sourcing program evaluation. Among key activities are review of cost-reduction strategies, pursuance of targeted value-added services, maintenance of quality levels, and others.

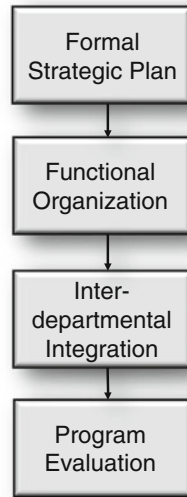


FIGURE 14.11 Managing the global procurement process.

14.6 INTERNATIONAL TRANSPORTATION AND WAREHOUSING

The scope of an enterprise's global supply channel dictates the structure and defines the boundaries of its international trade strategy. The *execution* of the global channel strategy is the function of transportation and warehousing. As is the case with other elements of the supply chain, international transportation and warehousing have a number of distinguishing factors that require them to perform operations differently than their domestic counterparts. The most obvious differences are found in the long distances goods are transported, heavy reliance on intermodal transport methods, and interaction with foreign companies and governments. More subtle differences are found in political issues, such as trade imbalances, the right of nations to use their own carriers for all domestic trade (known as *cabotage*), and arrangements made by nations to facilitate and make international transportation more affordable.

14.6.1 INTERNATIONAL TRANSPORTATION: OPENING ISSUES

All nations engaging in global trade are concerned about their balance-of-trade position. A favorable balance of payments occurs when more goods are exported than imported into a country. The objective is to ensure that more "hard" cash is entering the country than leaving it. Beyond fiscal concerns about product, pivotal to this strategy is the possession of viable

transportation modes that span global borders. To this end, governments will subsidize the growth of local carriers with international capabilities to ensure that as large a portion as possible of exports and imports are carried in home country transport modes. Also, nations sometimes have cargo preference laws requiring that certain types of goods can only be carried by domestic carriers. For example, all military supplies and cargoes arising from U.S. government appropriations, such as charitable foodstuffs being sent to foreign lands, must be carried in U.S. vessels.

Transportation services may even themselves be considered an export product that is offered to the global community. For nations wishing to engage in cross-border trading, the possession of a diverse transportation fleet acts as an additional competitive advantage when engaging in global trade. An example is the huge advantage enjoyed by China in maritime shipping, considered a backbone of Chinese economic growth. Cross-border trading occurs when a country's maritime vessels or aircraft is contracted to transport products of other nations. Some nations have attempted to control cross-border trading by a pooling agreement. Such agreements require that all or part of the products moving between the agreeing countries must be transported by their own international carriers.

14.6.2 SURFACE TRANSPORTATION [28]

Companies wishing to either export or import products have a wide range of transportation modes available. Most trade flowing from the U.S. to Canada and Mexico use motor carriage and rail to move goods. International shipments, however, must traverse large distances and overcome oceans and long delivery times. In such cases, the surface shipment requires a combination of more than one of the five transportation modes. As introduced in Chapter 13, the basis of intermodal forms of transportation resides in the development of systems that integrate or combine together various elements of the five modes of transportation. For example, a U.S. shipment to Asia might require containerization of the goods, motor carriage to a local rail siding where the container is loaded onto a flatbed car, delivery to a West coast port where the container is loaded on ocean transport, and arrival in China where rail and motor carriage are again used to complete the delivery.

The selection of the most efficient and cost-effective intermodal combination is a complex affair requiring an expert knowledge of intercontinental transport mediums and the internal transport systems of foreign nations. Many exporters will use the services of a freight forwarder in structuring the proper mix of transportation modes for foreign shipments. The capacity and efficiency of ocean transport, combined with container, motor, and rail transport enables goods and materials to be rapidly transported to their destinations across global space and time efficiently and at the lowest cost making international trade economically and marketplace-wise possible.

A critical part of intermodal selection is the ability of the transport mode to handle *unitized* loads. Although the transfer of products in bulk, such as petroleum, coal, and grains, comprises an enormous portion of the world's international trade, specialized vessels and equipment are usually employed. Non-bulk products, on the other hand, are best handled through unitization. Whether packed in a container, rigid boxes, shrink wrapped pallets, or other packing forms, unitization is significantly more efficient than handling loose individual products. It facilitates loading, marking, and shipment identification as well as intermodal product transfer. Furthermore, it removes the need for enclosed storage space at ports,

816 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

consolidation points, and freight terminals. Finally, it also reduces the chance of damage or theft while in transit.

An important form of unitization is containerization. The use of standardized containers to transport large quantities of non-bulk items has been a critical part of materials handling since the dawn of the Industrial Revolution. Containers have been designed to realize two goals: (1) maximization of the cubic capacity within the container and (2) maximization of the cubic capacity within the transport equipment. The great advantage of containers is that they can be used practically with any transportation mode. In today's global environment, containers are built to standardized dimensions, and can be loaded and unloaded, stacked, transported efficiently over long distances, and transferred from one mode of transport to another – container ships, rail and semi-trailer trucks – without being opened. Containers enable companies to greatly reduce transport costs and are a fundamental building block of international trade. As of 2009, approximately 90 % of non-bulk cargo worldwide is moved by containers stacked on transport ships.

There are five standard container sizes: 20 ft (6.1 m), 40 ft (12.2 m), 45 ft (13.7 m), 48 ft (14.6 m), and 53 ft (16.2 m). United States domestic standard containers are generally 48 ft (15 m) and 53 ft (rail and truck). Container capacity is often expressed in *twenty-foot equivalent units (TEU)*. An equivalent unit is a measure of containerized cargo capacity equal to one standard 20 ft (length) \times 8 ft (width) container. As this is an approximate measure, the height of the box is not considered; for instance the 9-ft 6 in. (2.9 m) *high cube* and the 4-ft 3-in. (1.3 m) *half height* 20-ft (6.1 m) containers are also called one TEU. The maximum gross mass for a 20-ft (6.1 m) dry cargo container is 24,000 kg, and for a 40-ft (including the 2.87 m (9 ft 6 in.) high cube container), it is 30,480 kg. Allowing for the tare mass of the container, the maximum payload is therefore reduced to approximately 22,000 kg. for 20-ft (6.1 m) and 27,000 kg. for 40-ft (12 m) containers.

There are many different types of containers. For example there are general purpose (dry), closed ventilated, open top, refrigerated, heated, tanker, and air freight. A critical advantage of containers is that many small, non-bulk products are stored conveniently and safely for transport. Other advantages are security and physical protection of goods, reduced handling, a “through” bill of lading, and the use of containers for outside storage. Disadvantages of containers are:

- Containerization increases fuel costs and reduces the capacity of the transport because the container itself, in addition to its contents, must be transported.
- Containers have been used to smuggle contraband. The vast majority of containers are never subjected to scrutiny due to the large number of containers in use. The U.S. government has advanced the Container Security Initiative (CSI), intended to ensure that high-risk cargo is examined or scanned, preferably at the port of departure.
- The cost of transporting an empty container to a place where it can be reused is considered to be higher than the worth of the container.
- They can be lost, particularly at sea.
- The high cost of shipping a less-than-full container.
- Mixed reception of the intermodal transportation concept. Containers are 27 % smaller than the standard motor trailer.

Besides containers, trucking is an important facilitator of international surface trade. While in the U.S. trucking is primarily used for domestic transportation, in other parts of

the world it is vital to international trade. For example, in 2009 more than 70 % of EU cross-border trade was by motor carrier. Drawbacks are traversing the great amount of rules and regulations involved in cross-border trucking, state of local infrastructures, fuel taxation, and capabilities of local rail service. Tractor trailers are, in essence, a form of self-mobile or partially mobile container. When used in an intermodal fashion, trailers can be accompanied by a tractor or shipped alone. In the latter case, the trailer is usually loaded aboard a rail car or canal or ocean vessel and sent “piggyback” to the next terminal, where it is then transferred to another form of transportation. Besides advantages associated with handling, trailers pass relatively easily through customs, thereby reducing lead times and speeding overall trailer utilization. Disadvantages to utilizing trailers are the cost of operating the tractors and paying for drivers and other support staff. Unaccompanied trailers normally take longer to move from terminal point to terminal point and require a high level of organizational control.

14.6.3 OCEAN TRANSPORT [29]

Ocean transportation is probably the most import type of transport in sheer volume of international goods carried. Ocean transport carries around 80 % of global trade merchandise by volume and 70 % by value. In 2011, the total volume of goods transported globally was 8.7 billion tons. Ocean transport varies from domestic water transportation in the variety and sizes of the vessels used and in the required services provided. Ocean transport is a very diverse industry with a variety of service options, vessel types, service providers and pricing alternatives. Ocean transport offers basically two types of service. The first is *liner* vessels that operate on a pre-established schedule with specific ports of call. Normally the size and equipment of the vessels depends on the type of cargo carried and the ports-of-call. The second type of service is *charterers* or *tramp* vessels. This type of vessel does not have scheduled destinations but rather is for hire or has a charter with the shipper referencing ports-of-call, product, terms and conditions, and so forth. Normally these vessels transport bulk products such as grains, oil, and other commodities and large or bulky goods such as automobiles.

There are at least five different types of ocean vessel, which can be further divided into several subtypes based on size, intended use, and specialization. The five types are described as follows:

- *Break-bulk freighters*. These vessels primarily transport individually packaged or crated cargoes, each of which is loaded one piece at a time. Often these vessels carry cargoes for dozens even hundreds of individual shippers at a time. These vessels may specialize in carrying products that require refrigeration or other services. A negative feature of this type is the huge costs involved in loading and unloading cargoes.
- *Container vessels*. These vessels primarily transport products stored in containers. The containers are brought to the seaport by other modes of carriage, loaded aboard ship, and distributed at destination seaports by other modes of carriage. Container ships normally stow all types of containers. A great advantage of container vessels is their loading/unloading speed, intermodal transferability, and freight protection. The most common types of container vessel are *Panamax ships* (capable of transiting the Panama Canal); *New Panamax ships* (carrying 15,000 containers and capable of

transiting the New Panama Canal); and *Post New Panamx ships* (reaching 18,000 containers).

Containers moving between the Far East and Europe often make use of the *landbridge route* across the United States. In this process, containers are unloaded in U.S. West coast ports, then moved by railroad across the country to the east coast, and then reloaded aboard vessels for the voyage across the Atlantic. Landbridges have the advantage of dramatically reducing transit time by avoiding much slower and often circuitous water routes, and increasing the utilization of containerships. A variation of container vessels are *Lighter Aboard Ship* (LASH) and *Roll-on/Roll-Off* (RO/RO) vessels. LASH vessels handle floating containers and are used most advantageously in areas where the central port is connected to inland areas by shallow waterways. RO/RO vessels are designed to transport trucks, tractor trailers, and other self-propelled vehicles that roll on and off when loading or unloading.

- *Dry-bulk vessels.* These vessels are designed for transporting non-packaged dry goods commodities such as grain, coal, and ores. They rarely carry more than one type of product at a time and usually service only one shipper, or a few shippers, on one voyage.
- *Tankers.* These vessels have been designed to transport liquefied products. Among these products are crude and refined petroleum, liquefied gases, chemicals, wine, and molasses. Much of the world's total shipping tonnage is the transportation of petroleum.
- *Seagoing barges.* These types of vessels are carriers involved with small cargoes, short hauls, or routes with narrow or shallow channels. These vessels are much larger and built sturdier than river barges. Normally seagoing barges can handle bulk, bulk break, containerized, and liquid cargoes.
- *Combination ships.* These are multipurpose vessels capable of transporting different types of commodities and load types. Normally, these vessels are structured to carry bulk cargoes below decks, a tweendeck to hold vehicles or break-bulk products, and a main deck used to carry containers. Their versatility and small size are ideal for small markets and developing countries.

The control of shipping rates differs by type of service. There are three basic types of service provided by ocean vessels: liner, tramp, and industrial carriage. *Liner service* provides scheduled for-hire carriage for general goods between ports based on published freight rates. Ocean general cargo (or break-bulk liner) rates are set by *shipping conferences*. A conference is an organization consisting of all vessel owners operating in a common shipment lane who have legally agreed not to compete on price and agree to charge the same rate for the same type of cargo and the same voyage. A common rate or *tariff* is published for each commodity and is to be charged by all members of the conference. *Tramp services* are offered by vessels that literally "tramp" from port to port looking for freight. Tramp vessels do not follow established schedules or routes, and rates are established by individual charters with shippers. This type of service is used by most of the world's bulk freighters, tankers, and seagoing barges. The final type of service is *industrial carriage*. Here the shipper uses its own, or a leased vessel, to transport its own goods.

14.6.4 INTERNATIONAL AIR TRANSPORT [30]

Whereas air transportation accounts for only a small fraction of the total international freight, it has become, nevertheless, the fastest growing mode of transportation. The amount of international freight transported by air grew from 75 billion FTKs (freight ton kilometer, measured as the number of metric tons of freight carried multiplied by the distance carried) in 1994 to 120 billion FTKs in 2002 to 145 billion FTKs in 2005. In 2012, international freight amounted to a US\$6.4-billion business accounting for 35 % of global trade by value. Nations big and small have the ability to open lanes of international trade simply by buying aircraft and opening an airport. In many nations, the air transport industry is either wholly- or partially-owned by the state.

The main advantage of air transport lies in the speed by which goods traverse the globe in comparison to other carrier modes. Although even the largest cargo aircraft has a tonnage-carrying capacity of about 1 % of a fairly small break-bulk ocean vessel, it can make a delivery within a few hours or a few days that would take an ocean vessel several weeks. International air carriers are normally used to transport small quantities of high-value, low-weight, semifinished and finished goods. Typical products include computers, extreme seasonal and perishable commodities, products sensitive to fashion, precision instruments, and electronics. Often, such products would never be able to find their way into foreign markets without air transportation. The negative side to air transport is obviously the cost for aircraft, maintenance and repair, terminal fees, and facilities costs. Recently, airline transport was significantly challenged by the recession of 2009, the continuously rising cost of fuel, and the threat of terrorism. In addition, the limited storage capacity of aircraft and the inability to carry many types of products limit its use to all but emergency-type deliveries.

Broadly speaking, international air transportation consists of two types: passenger services and cargo operations. Passenger services account for almost 94 % of total traffic. Similar to ocean transport, air offers two modes: *scheduled* and *charter*. Using scheduled air consists of two options. The first is using freight space in the “belly” of passenger flights (United, American) and the second is all-cargo air freighters (FedEx and the USPS). When using this mode, shippers have the benefit of planning delivery almost anywhere in the world by consulting the published routes of commercial airlines. The second mode is a charter flight. Companies can charter an aircraft from a variety of private and commercial services. Although chartering an aircraft is expensive, it could be justified for the shipment of a product whose nature or demand requires extreme reduction in transit time over other forms of carriage. Theoretically, tariffs follow the guidelines established by the International Air Transport Association (IATA), a cartel consisting of almost all of the world’s airlines. In practice, rates are based on the principle of charging what the market will bear. Tariffs are normally charged on the basis of volume or weight, whichever is higher.

14.6.5 INTERNATIONAL WAREHOUSING

International warehousing is divided into two basic categories. The first consists of a variety of different types of consolidation warehouse. These facilities are privately owned by the exporting firm or offered for public use by local LSP companies and are found at seaports, airports, and in most large cities. The basic purpose of consolidation warehousing is to receive foreign shipments and prepare them for the next leg through the home-country distribution channel as they move toward the end customer. The functions of international

820 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

consolidation centers are similar to those performed by domestic counterparts. Operations may consist of such activities as bulk breaking, conversion of the shipment to other modal means of transport, repacking, labeling, and marking. Among this type of warehouse are the following:

- *Transit Sheds.* This is perhaps the most basic form of international warehousing. Transit sheds are normally enclosed facilities at piers used to temporarily store shipments. The shed provides sufficient protection against weather conditions and assists in organizing the shipment for the next carrier. Transit sheds usually contain cargo, such as containers and trailers that have been unloaded from an ocean vessel and are waiting to be loaded onto a rail or motor carrier.
- *In-Transit Storage.* Often, international shippers need to temporarily store inventory while performing consolidation activities and negotiating rates with local carriers. In-transit storage warehousing provides this service. These warehouses are normally provided by the nation's railroad system and are located at seaports and airports.
- *Hold-on-Dock Storage.* This type of storage is offered by ocean carriers who permit shippers to warehouse cargoes in their facilities, usually at no charge, until the next scheduled sailing. Often shippers take advantage of the free storage to warehouse goods and perform consolidation activities.
- *Public Warehousing.* When shipments are delayed or held by the customer or government regulation, shippers may contract with a public warehouse to store the cargoes. Practically all international ports offer public warehousing to foreign shippers.
- *Shared Warehousing.* It is not uncommon for foreign shippers to pool their resources and contract as a co-operative for public warehousing. This practice enables companies to retain public warehouse storage at lower costs.
- *Bonded Warehouse.* This type of warehouse is operated under government customs supervision for the express purpose of storing imported goods. Bonded warehouses are owned directly by the government, by private companies for their imported goods only, or by public warehousing LSPs. All shipments to and from bonded warehouses are handled by government-licensed bonded carriers. While they are stored in a bonded warehouse, goods cannot be further processed or manufactured.
- *Foreign Trade Zones.* As discussed earlier in this chapter, FTZs are a special type of warehouse in which imported goods are stored duty free until they are sold in the foreign market. In addition, goods marked for re-export do not pay any duties as long as they remain in the free-trade-zone location. While in storage, goods can be further processed or manufactured. Shippers must be thoroughly familiar with the regulations affecting both bonded and free-trade-zone warehouses [31].

The second category of international warehousing is privately owned warehousing. The decision criteria for building and maintaining a foreign warehouse is fairly close to that for owning a domestic warehouse. Criteria are divided into two sets of elements: macro and micro. *Macro* elements can be divided into five major factors.

- *Transportation.* One of the most critical factors when making a decision to locate a warehouse in a foreign country is the availability of local transportation. The site should provide easy access to foreign terminals, such as sea docks and airports. Also, the state of local land transportation is critical. Quality and accessibility of the road

system, availability of local carriers, and ability to use a private fleet must be determined before site selection.

- *Labor.* Once a warehouse has been built, it will need to be staffed. Issues considered are the level of education and skill possessed by the local work force, requirements for training, ability to recruit local management, attitudes and customs of the local populace, and government restrictions and labor laws.
- *Land.* The property occupied by the warehouse must be thoroughly investigated. Key issues are ownership of the land, the existence of public services such as sewers, water, roads, refuse pick-up, police and fire protection, governmental construction requirements, terrain, and possibility for expansion.
- *Energy and utilities.* A constant and uninterrupted source of power is crucial for effective warehouse operations. In countries where utilities are inadequate, companies may have to construct and operate their own power plants.
- *Taxes and incentives.* When looking for an off-shore warehouse site, companies often get local governments to assist in construction and operation, as well as to grant special tax breaks. The reverse can just as easily be the case, with some nations placing high taxes and restrictions on foreign operations in an endeavor to protect local businesses.

Once these macro factors have been addressed, the firm must consider a host of *micro* concerns. Some of these issues relate to the following:

- Currency exchange rates
- Government and social stability
- Currency stability
- Ability to take profits out of the country and availability of barter agreements
- Popular attitude of the locale toward the company
- Government attitude toward the company
- Depth and complexity of import and export regulations
- Availability of required materials handling equipment
- Free trade or most-favored nation status
- Culture and customs of the host country

14.7 SUMMARY

The globalization of the marketplace has become one of the most critical components shaping today's business climate. The explosion in international trade is the result of the maturing of the economies of the highly industrialized nations, growing global competition, the formation of powerful international trading blocks, the establishment of strategic alliances and joint ventures with foreign companies, and the development of integrated logistics systems focused on attaining the best cost and service possible. While global trade offers many advantages, companies need to be aware of the many barriers that render an international trade initiative difficult. Global strategists must be prepared to find solutions to

822 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

such barriers as tariffs and trade practices, cultural issues, financial and regulatory restrictions, security requirements, and local logistics infrastructure weaknesses.

Embarking on global trade requires companies to develop a comprehensive international trade strategy to effectively guide the effort. The construction of such a strategy is composed of five steps. In the first, planners identify the strategic dimensions of the internal and external business environment. The goal of this step is to isolate the macro economic, political, and governmental environments as well as the micro factors of markets, costs, and customers, and determine how well the organization is posed to handle identified opportunities, threats, and trends. In the second step, planners select those markets that match enterprise aspirations and capacities. The third step consists in defining the structure of the organization to optimize objectives given existing skills and resources. The fourth step is implementing the product, marketing, communications, and logistics channels detailed in the third step. The final step is concerned with the measurement and monitoring of the success of the strategy.

In developing the strategic approach to the global marketplace, firms have four possible alternatives. One strategy is to export products into foreign markets from domestic sources passively through the use of a domestic intermediary, or actively by seeking out intermediaries in foreign countries. A second possible avenue is licensing. In this strategy a company (the licensor) agrees to permit a company (the licensee) the right to use a production process, trademark, patent, trade secret, or other skill or technology in exchange for a royalty or fee. Another strategy, joint venture, differs from simple exporting in that the firm invests and is directly involved in the management of a foreign enterprise. The final strategy is direct ownership of a company located in a foreign country. Once the international channel strategy is defined, it must be effectively managed. Maintenance of a global channel is a complex affair involving most of the decisions required to run domestic functions, plus additional requirements associated with the realities of international trade. Of critical importance is the management of international transportation and warehousing. Transportation is essential in delivering the product through the distribution channel to foreign destinations and warehousing with consolidating and storing it on its way to the customer.

Managing global networks also requires handling additional functions associated with establishing global market channels, financing and terms of sale, product marketing, investment and payment, pricing, and documentation. International companies can facilitate and streamline the management of these activities by implementing a global trade management (GTM) system. Broadly speaking, a GTM provides software solutions to assist companies in four areas: (1) automation of customs and regulatory compliance activities; (2) establishing accurate and complete trade content (duties, tariffs, taxes, interdicted products and nations, and others) to reduce regulatory and customs delays; (3) establishing and maintaining connectivity with trading partners and changing regulations; and (4) facilitating the execution of international transaction financing.

Global companies have also turned to global purchasing as a critical source of competitive advantage. The advantages of importing products from international sources are access to low cost, quality products produced by advanced engineering, technological, and production processes without investing in those resources. Fundamental to effective global sourcing is the execution of the international purchasing management process. The first step in the process is to identify the feasibility of using a foreign source for the procurement of a

component or finished good. Once the decision to outsource is made and appropriate suppliers are identified, the second step is request for quotation. The purpose of this step is to detail the purchase requirements and evaluate the total cost of the proposed purchase. After the list of perspective suppliers is finalized, purchasers negotiate prices, delivery schedules, and contracts detailing the scope and length of the proposed partnership. The final step in the process is the completion of the shipping documentation.

The execution of international trade strategies is the function of global transportation and warehousing. In many ways, global logistics performs the same functions as domestic transportation and warehousing. The most obvious differences are found in the long distances goods are transported, heavy reliance on intermodal transport methods, and interaction with foreign companies and governments. The selection of the most efficient and cost-effective intermodal combination is a complex affair requiring an expert knowledge of intercontinental transport mediums and the internal transport systems of foreign nations. Many exporters will use the services of a freight forwarder in structuring the proper mix of transportation modes for foreign shipments. The capacity and efficiency of ocean transport, combined with container, motor, and rail transport, enables goods and materials to be rapidly transported to their destinations across global space and time efficiently and at the lowest cost rendering international trade economically and marketplace-wise possible.

DISCUSSION QUESTIONS

1. What are the major trends driving globalization?
2. What are some of the barriers blocking globalization?
3. What are the three possible globalization strategies?
4. What are the four global trade channel strategies?
5. What is a Free Trade Zone (FTZ) and what are some of its advantages to global traders?
6. What are the service criteria reviewed by global planners when evaluation the level of service versus the cost?
7. What are the strategies a company can pursue regarding marketing products in a foreign country?
8. What are the six basic forms of rendering payment in a global transaction?
9. What are the advantages of using a GTM?
10. What are the differences between domestic and international purchasing?

REFERENCES

1. All references to the *APICS Dictionary* are from the 14th edition.
2. U.S. Census Bureau, U.S., Bureau of Economic Analysis. 2014. *Exhibit 1: U.S. international trade in goods and services, 2013*, 4 June 2014, 1.
3. U.S. Census Bureau. 2014. *Exhibit 14a: Exports, imports, and balance of goods by selected countries and areas: 2013*, 17.
4. World Trade Organization. 2013. World commodity profiles for 2012. http://www.wto.org/english/res_e/statis_e/world_commodity_profiles12_e.pdf
5. SCM World. 2013. Managing global trade: Rising importance but lagging execution. *SCM World White Paper*, September 2013, 4–18.
6. Horne, David J. 2003. Global sourcing scenario. *APICS: The Performance Advantage* 13(5): 21–24.
7. See the discussion in Harps, Leslie Hansen. 2003. Bridging the cultural divide. *Inbound Logistics* 23(3): 4–40.
8. Bender, Paul S. 1994. International logistics. In *The distribution management handbook*, ed. James A. Tompkins and Dale A. Harmelink, 8.2–8.4. New York: McGraw-Hill.
9. Some elements of the discussion are summarized from Bowersox, Donald J., David J. Closs, M. Bixby Cooper, and John C. Bowersox. 2013. *Supply chain logistics management*, 4th ed, 273–276. New York: McGraw-Hill Irwin.
10. Keegan, Warren J. 1989. *Global marketing management*, 4th ed, 41–49. Englewood Cliffs: Prentice-Hall.
11. This term is from the *APICS Dictionary*, 14th edition
12. These points have been summarized from Kotler, Philip, and Kevin Lane Keller. 2006. *Marketing management*, 12 ed, 668–670. Upper Saddle River: Pearson-Prentices Hall.
13. David, Pierre, and Richard Stewart. 2008. *International logistics*, 2nd ed, 56. Mason: Cengage Learning.
14. This shortened definition can be found at www.cscmp.org/resources-research/glossary-terms.
15. Bender, Paul S. 1985. The international dimensions of physical distribution management. In *The distribution handbook*, ed. James F. Robeson and Robert G. House, 784–786. New York: The Free Press.
16. This example is described in Kotler and Keller, 685.
17. Picard, J. 1982. Topology of physical distribution systems in multi-national corporations. *International Journal of Physical Distribution and Materials Management* 12(6): 26–39.
18. Kotler and Keller, 689.
19. Bartlett, Christopher A., and Sumantra Ghoshal. 1989. *Managing across borders*. Cambridge, MA: Harvard Business School Press.
20. Keegan, *Global marketing management*, 378–382. See also the analysis in Kotler and Keller, *Marketing management*, 678–683.
21. David and Stewart, *International logistics*, 78.
22. Part of this section on pricing draws on the topic discussed in Kotler and Keller, *Marketing management*, 684–685.
23. For an extensive discussion of global trade documentation see David and Stewart, *International logistics*, 178–204.
24. Gonzales, Adrian. 2009. Beyond software: The role of content and connectivity in global trade management. *ARC Advisory Group Whitepaper*, Dedham, August 2009, 2.
25. See the discussion in Norquist, Warren E., Robert H. Lees, James E. Morton, and Frank Tahmoush. 1993. Global purchasing. In *The purchasing handbook*, ed. Harold E. Fearon, Donald W. Dobler, and Kenneth H. Killen, 194. New York: McGraw-Hill.

826 INTERNATIONAL DISTRIBUTION AND SUPPLY CHAIN TECHNOLOGIES

26. Carter, Joseph R. 1993. *Purchasing: Continued improvement through integration*, 121–122. Homewood: Business One Irwin.
27. For more information on currency issues see Heinritz, Stuart, Paul V. Farrell, Larry C. Giunipero, and Michael G. Kolchin. 1991. *Purchasing: Principles and applications*, 8th ed, 196–198. Englewood Cliffs: Prentice-Hall.
28. This section on surface transport draws from Coyle, John J., C. John Langley, Brian J. Gibson, Robert A. Novack, and Edward J. Bardi. 2009. *Supply chain management: A logistics perspective*, 8th ed, 359–368. Mason: South-Western Centage Learning; Goldsby, Thomas J., Deepak Iyengar, and Shashank Rao. 2014. *The definitive guide to transportation: Principles, strategies, and decisions for the effective flow of goods and services*, 174–178. Upper Saddle River: Pearson Education, Inc.; and David and Stewart, 290-306.
29. This section on ocean transport draws from Coyle, et al., *Supply chain management*, 368–374; Goldsby, et al., 162–168; and David and Stewart, 248–272.
30. This section on air transport draws from Coyle, et al., *Supply chain management*, 375–380; Goldsby, et al., 168–174; and David and Stewart, 278–286.
31. See the discussion in Bender. The international dimensions of physical distribution management. In *The distribution handbook*, 799–802.