Learning OBJECTIVES

- Appreciate the complex issues facing managers of global supply chains and the challenges of the more volatile global economy
- Understand the rationale for global trade flows (imports and exports) and especially the concepts of absolute and comparative advantage in explaining international trade
- Discuss the role and importance of the Factors of Production in providing a trade advantage to countries and/or regions for participating in global trade
- Appreciate how population size and age distribution differ among various countries and the impact that they have on their economic growth and vitality
- Recognize and understand how the growth in urban areas around the world provides challenges and opportunities for their countries especially, the development of the so-called mega-cities
- Discuss the challenges and importance of migration for the economies of the world, especially the developed countries
- Understand the internal and external roles of technology and information systems for economic growth and development
- Appreciate and discuss the trade flow volumes (imports and exports) among and between countries of the world
- Recognize and appreciate the importance of the various trading partners of the United States
- Discuss the importance and nature of the major trade agreements that impact the United States and its trading partners

INTRODUCTION

Global Supply Chains are dependent on the efficient and effective flow of commerce between and among the countries and regions of the world. There are numerous factors that can impact and influence the flow of global goods and services, especially economic and political factors. Before discussing the Global Drivers, the rationale for global and regional trade will be summarized.

RATIONALE FOR GLOBAL TRADE AND COMMERCE

As European countries advanced economically, particularly during the 18th century, there was a growing awareness of the potential value of international trade. Adam Smith in his renowned treatise, THE WEALTH OF NATIONS, provided not only a rationale for a market economy based upon competition, but also advanced a rationale for trade among nations called the Theory of Absolute Advantage. Smith argued that countries would be better off if they would trade commodities where each country had an economic or cost advantage for one or more of the products that they produced

The underlying logic of Absolute Advantage was also used by Adam Smith to advance the rationalization what he called "division of labor" or specialization of labor.

The theory of Comparative Advantage was advanced about 40 years later by several economists. The analyses were also somewhat simplistic because not all of the relevant costs were considered. However, the logic was sound as long as total landed costs were considered. The importance of both Absolute and Comparative advantage is they demonstrate that global trade and related global supply chain flows can be based not only upon scarcity of items among countries but also differences in the cost of production with implicit benefit to all parties involved.

Later economists explored more fully the rational of global trade and specialization. The Factor Endowment Theory postulates that when a country has more of one of the four so-called Factors of Production (land, labor, capital and entrepreneurship), they may have a comparative advantage in producing one or more products.

The current more complex global economy means that there are more variables than the traditional factors of production that can provide advantages to countries and be a basis for global trade flows. Some of these factors help to explain the development of the so-called BRIC (Brazil, Russia, India and China) and VISTA (Viet Nam, Indonesia, South Africa, Turkey and Argentina) countries. India and China have developed and prospered in recent years because of improved global transportation, faster communication systems, population growth, education, and technology advancement.

CONTRIBUTING FACTORS FOR GLOBAL COMMERCE AND SUPPLY CHAIN FLOWS

Essential factors for economic growth and increased development of global trade flows include population growth and age distribution, urbanization, land and resources, economic integration, knowledge dissemination, labor mobility, financial flows and investment in infrastructure by public and/or private sources, faster communication systems, improved financial services for the effective flow of goods and services. These factors are the driving forces for globalization around the world and need to be discussed in order to understand the future course of global trade and development.

Population and Distribution

The top ten countries account for almost 60% of the total world population. Interestingly, two countries account for about 36% of the total, China and India. The U.S. is a distant third and China and India have over four times as many people as the U.S. Another interesting statistic is that India is projected to have a larger population than China by 2050 and that Russia (#9) and Japan (#10) are projected to have fewer people in 2050 than they had in 2015.

The sheer size of the populations in China and India will provide these two countries with a potential economic advantage in terms of labor for growth as long as the economies can support that population size. The decrease in size for Russia and Japan reflects an aging population and has the potential of being an economic disadvantage in terms of labor availability and the social cost to support an aging population.

The median age is increasing, with one exception, over the course of the four years for all categories. Developed countries have the highest median age in each year, and the least developed counties have the lowest median age. The differences are generally explained by the level of education, quality of health care and economic well-being. The difference in median age between the most developed and least developed is interesting to note. It is 21 years in 2010 and 2025 but drops to a projected 18 years by 2050. Overall, however, the challenge is evident that the more developed countries have a lower birth rate and an aging citizenry which has implications for future economic development and prosperity.

Japan and three European countries are projected to have populations with median ages over 50. The aging populations in these countries will result in increased health care costs and a reduction in the size of the working population. This could result in a lowering of labor productivity and increased taxes. The consequences of this phenomenon could mean high unemployment, scarcity of some resources, and a need for more housing, infrastructure (water, sewers, roads, etc.) education and other services thus straining their economic viability even more. However, the size of the potential workforce can attract industries that are labor intensive. Migration to countries with aging populations is another possibility if not constrained. From the perspective of world business and global supply chains, this data has some important implications relative to economic growth, market size and development, capital flows, labor availability consumer needs and utilization of natural and strategic resources.

A related issue is urbanization with the increase in migration in many countries from rural areas to cities or urban areas. As one would expect this shift will be most profound in the less and least developed countries of the world. The United Nations projects by 2025 that 50% or more of the total Asian population will be in cities with China having the largest urban population. A new category of city has been identified, namely, Megacities (10 million or more inhabitants) which is a manifestation of the migration to urban areas. One of the interesting and important dimensions of the new Megacities is “where” they will develop.

The private sector can play an important role in the developments of these large urban communities. The sheer size and density of the cities will require much effort and innovation. To address the infrastructure shortages of transportation, fresh water, sewage disposal, health services, educational facilities, etc. Meeting these needs will require public and private funding. Global trade flows and global supply chains will be impacted and businesses must be prepared to take advantage and participate for the welfare of the citizenry.[2]

Migration can be disruptive and dysfunctional when it occurs with large numbers under conditions of political upheaval. Absorbing that crush of humanity strains the existing economic and social systems and causes unstable conditions. However, humanitarian concerns dictate that every effort possible be made to accommodate this mass migration from Syria and other nearby countries. The European Union countries have felt the major impact of migration pattern because of their proximity and economic status.

The United States should be given some attention. Table 2.4 addresses the U.S. population (third largest) by age and gender for five years from 2010 to 2014. While the population has increased during this period, the increase has been modest, an increase of about 9.5 million people over the five year period. Interestingly, there are more females than males which is primarily due to their longer life expectancy. The median age has remained stable during this period unlike some other developed countries because of migration from various countries of the world

Land and Resources

Two other "Factors of Production" land and resources are also important for economic advancement and development. These are general terms and would include such items as energy, food and water which are critical for economic viability and future development. Technology can play an important role in mitigating scarcity of key resources, from desalinization of ocean water and fracking for gas and oil production to bio-technology for improving crop yield and agricultural production. Public and private sector collaboration and partnerships, could be very instrumental in alleviating global economic disparities that currently exist around the world. Investment in infrastructure will be required but most important will be the elimination of terroristic acts along with economic and political stability!

Technology and Information

Technology has two important dimensions. It can be viewed as an internal change agent that can enhance organizational efficiency and effectiveness and enhance the ability to compete in the global marketplace. Technology, however, can also be viewed as an external driver of change similar to globalization. In fact, one could argue that its external role in recent years has moved technology ahead of globalization as an agent or driver of change. The rapid development of new technology whether it be hardware or software has changed the "rules of engagement" and enabled new sources and forms of competition and especially new "business models".

The availability and sharing of such information has become a major force for driving competition and the development of new business models. A very important outcome of these developments has been the opportunities for expanding global participation with efficient and effective supply chains via outsourcing to other countries of the world. It has made it possible for relatively small companies to participate in some of the processes and expand their footprint.

Global Supply Chain Flows

As indicated previously, early in the 21st century there was frequent reference made to the acronyms, the BRIC countries and the VISTA countries. The former were identified as the top emerging economies and the latter as developing at a fast pace.. The development of global supply chains provided an opportunity for these economies to participate in the global landscape because of material resources, the size of their workforce, their technical skills or some other economic advantage that made them attractive to companies from more developed economies. Their population size also made them attractive as potential markets to businesses in the United States, the European Union (E.U.), and Japan. They were hailed as a sign of more global economic balance, and one author declared that the "world was becoming flat" on an economic development basis.[5] Their status at the time was largely based on inherent factors of production and related development. At this point there have already been some shifts and the future importance of some of the VISTA countries is not clear. The political upheaval occurring during the 2nd decade of the 21st century along with terrorism have disrupted some economic development, Never-the-less, global supply chain flows are significant and an examination of some of the related trade data provides some important insights into the significance of various countries on the world stage.

Figure 2.2 and the related Table provides data on the volume of export trade moving from the top 12 countries of the World and the associated world map depicts numerous circles which indicate, by their size, the volume of exports .Looking at the map with its numerous circles indicating exports or out flow of merchandise, it reflects good news and bad news. The good news is the number of countries participating in exporting or global commerce. The bad news is the disparity among the countries in terms of volume of exports. Certainly, some of this is attributable to the size of the country, its stage of economic development, and the value of the merchandise being exported, but the concentration of economic power is obvious.

The Table indicates that the European Union as a whole with its 28 countries is the leader in terms of exports. This listing may seem unfair to some readers. But, the total geographic size of the E.U. is smaller than of Russia and China, for example, and it is considered an economic entity. Also, it is interesting to note, that in spite of their relatively small geographic size, four European countries are among the top nine countries on the list. Overall, the EU is an important component of the global economy and a major economic force.

China is the leading individual, exporting country followed the United States which exports about 30% less than China. The U.S. is followed closely by Germany, and Japan is a somewhat distant 4th on the list. It is also, interesting to note that the Republic of Korea and Hong Kong and both compare favorably with Italy and France in terms of their exports. If the Table were expanded to include the top 12, the United Kingdom and the Russian Federation would make the list at 11th and 12th respectively.

Figure 2.3 and the related table provide data on the volume of imports moving into various countries. Again, the EU is at the top of the list, but the U.S and China have changed positions with the U.S. being number two. The two tables indicate China's position as a net exporter and the U.S. as a net importer. Keep in mind, however, that these table are showing merchandise flows, and are not the equivalent of the Balance of Payments which also reflects financial flows. The trade data in terms of value is the most relevant to the instant discussion for global supply chains but one could argue that the actual physical volume of the flows could also be important from a supply chain perspective. An overall comparison of imports and exports is interesting. Note the data for China and Germany in terms of exports versus imports.

Another set of data that is of interest for this discussion is the trading partners of the U.S. with respect to exports and imports. Table 2.4 shows the total exports of the U.S. and their top 25 export partners for 2014. Canada, Mexico and China are the top three recipients of exports from the United States, in that order. Japan is a distant fourth with about half of what is exported to China, and China only receives about half of what is exported to Mexico. Canada is by far the most important trading partner of the

U.S., in terms of exports. Note that six European countries are in the top 25and an array of Asian and South American countries, for the most part, complete the list. As indicated above, the U.S. is a major global exporting country with some concentration of trade with its two closest “neighbors”, but also with a broad reach throughout the world. The U.S. imports presented in Table 2.5 indicate a counterbalancing global flow as one might expect. However, in this case China is the top partner followed by Canada and Mexico.

Supply Chains in a Global Economy

An important characteristic of today’s world economy is the increasing regional economic integration. The globalized economy, the establishment of the General Agreement on Tariffs and Trade (GATT) and its 1995 successor, the World Trade Organization (WTO) have together led to multilateral trade promotion and lowered barriers to international business transactions. Nevertheless, a growing number of countries have grouped together to form Regional Trade Agreements (RTAs). The biggest and best known example of an RTA is the European Union (EU), with number of memberships growing from six members in the 1950s to 28 members by 2015.

Operating globally has become easier to accomplish for even individuals and small companies, because of the advances in information/communications technology, as noted above, and the continuing improvement of specialists such as UPS, FedEx, DHL, etc., which can provide global supply chain services at a very reasonable cost. A growing number of specialists and continuing improvements in information technology/communications are contributing to the flattening of the world. Obviously, large global companies are also contributing to this phenomenon.

Global supply chains impact all with lower prices, increased array of products, and convenience (read 24/7, one-stop shopping, etc.), but some are critical of the outcomes when individuals lose their jobs; businesses are closed, and so forth. Many would argue the advantages outweigh the disadvantages, for instance, lower prices have saved consumers billions of dollars in purchase prices. There are tradeoffs (advantages and disadvantages), but there is no turning back.

Global Markets and Strategy

The global business environment has changed significantly and companies are not just importing and exporting products but are also locating plants and other facilities in other parts of the world. Honda and Toyota used to produce cars in Japan and ship them to the United States. Now their cars are also produced in the United States for sale in North America.

Tariffs and other trade barriers have been significantly reduced among many countries, allowing a much more competitive global economy. Many *Fortune* 500 companies experience 50 percent or more of their sales in global markets. Small and medium-sized companies have also been able to be players in global markets, with the opportunity to source and sell on a global basis by developing appropriate relationships.

Success in the global market-place requires development of a cohesive set of strategies including product development, technology, marketing, manufacturing, and supply chains. Global companies tend to be more successful when their strategies help them to simultaneously achieve their business objectives at their various global locations. From a supply chain perspective, this means strategically sourcing materials and components worldwide, selecting global locations for key supply depots and distribution centers, evaluating transportation alternatives and channel intermediaries, providing customer service, understanding governmental influences on global supply chain flows, examining opportunities for collaboration with third-or fourth-party logistics companies, and other supply chain issues.

From a customer service perspective, global markets and strategy have four important characteristics.

- First, companies attempt to standardize to reduce complexity, but they have to recognize that global markets need some customization.
- Second, global competition often reduces the product life cycle, Technology companies are faced with this phenomenon even in the U.S. market, but globally other products are faced with similar experiences. Technology companies counteract with continual upgrades and new products.
- Third, traditional organizational structures and related business models frequently change since companies get more involved in outsourced manufacturing and some logistical activities such as transportation, warehousing, and order fulfillment. All of this impacts the supply chain and its related customer service activities.
- Fourth, globalization introduces more volatility and complexity The need for flexibility and responsiveness is a requisite for customer service throughout the supply chain. The expanded networks cover long distances and many are complex. Trade policy, regulations, tariffs and currency exchange rates exacerbate the level of complexity for global supply chains. Furthermore, the number of intermediaries that can be involved adds another additional layer of complexity.

In addition to the four areas indicated above, some of the customary strategies used in the domestic market are also challenged. The increased length and complexity of the supply chain make it more difficult to achieve shorter lead times. Also, demand-driven supply or pull systems can lower inventory levels significantly, but they are challenged by the longer distance and complexity of multi-layered supply chains. Other strategies such as compression and lean supply chains are also more difficult to achieve in the global environment.

Supply Chain Security: A Balancing Act

Given the importance of global trade to the United States, a delicate balance exists between security and the efficient flow of global commerce. If security is too tight it could impede the flow of needed goods or materials, causing delays and decreased efficiency. Ports and border gateways can become congested because of security measures. Consequently, clearance time has increased from hours to days in some instances. Steps have been taken to improve the flow through border crossing. This is necessary for our global economy.

Electronic filing of cargo information has helped to improve the border clearance times. The Trade Act of 2002 requires exporters to electronically submit shipping documents to U.S. Customs 24 hours after delivery to a port or 24 hours before vessel departure. For imports, the manifest must be filed by the ocean carrier or the consolidator 24 hours before the U.S.-bound cargo is loaded on the vessel in the foreign port. Because of Canada's importance as a trading partner, an expedited procedure (FAST) has been developed to speed up clearance through the U.S.-Canadian border.

The U.S. Coast Guard was authorized by the U.S. Maritime Transportation Security Act of 2002 to assess the vulnerability of U.S. ports and to deny entry to ships from countries that do not meet U.S. security standards. This act requires the development of standards for container seals and locks, cargo tracking, identification, and screening systems for ocean containers.

In addition, the Customs Trade Partnership Against Terrorism (C-TPAT) was established under the direction of the U.S. Department of Homeland Security in November 2001. This voluntary initiative to secure the global supply chain was started with seven companies; by 2007, some 7,400 corporations were involved in this cooperative effort to secure the global supply chain and to facilitate legitimate cargo and conveyance. C-TPAT functions under the U.S. Customs and Border Protection (CBP) Agency, which previously was known as the U.S. Customs Service.[7]

CBP has responsibility for the traditional role of the U.S. Customs Service, namely, preventing illegal entry of people and drugs, protecting agriculture from harmful pests and diseases, protecting the intellectual property of businesses, collecting import duties, and regulating and facilitating global trade. Partner companies in C-TPAT agree to be responsible for keeping their supply chains secure to agreed standards and to implement needed changes. One of the key features of this program is information sharing of best practices for security among members. The goal is to develop a "green lane" to speed goods across the border but also to protect the United States and the global supply chains of the participants.

Ports

Ports are a critical part of global supply chains and also a major focus for global security. Over $2 trillion in trade value per year passes through U.S. ports, and over $20 billion is collected in industry fees and taxes. The 50 states utilize about15 ports to handle their imports and exports; over $6 billion worth of goods moves in and out every day. About 99 percent of the international cargo of the United States moves through its ports, or about 3 billion tons annually. In 1960, international trade accounted for about 9 percent of U.S. gross domestic product (GDP). Today, it is over 30 percent.[8]

The North American Free Trade Agreement was signed by leaders of Canada, the United States, and Mexico in 1993 and was ratified by Congress in early 1994. NAFTA establishes free trade between these three countries and provides the way the agreement is to be interpreted. NAFTA states that the objectives of these three countries is based on the principles of an unimpeded flow of goods, most favored nation (MFN) status, and a commitment to enhance the cross-border movement of goods and services. MFN status provides the lowest duties or customs fees, if any, and simplifies the paperwork required to move goods between the partner countries.

In the long run, the goal of NAFTA is to create a better trading environment. NAFTA's goals involve making structural changes to operate a borderless logistics network in North America. Information systems, procedures, language, labels, and documentation are being redesigned to expedite the border crossings and the flow of commerce. There are continuing challenges to achieving the established goals among all three countries. Migration from Mexico into the U.S continues to be a political "hot button" because of the relative ease of entry into the U.S.

SUMMARY

- Global companies usually are faced with more complex and longer supply chains which challenge them in terms of efficiency, effectiveness and execution.
- Successful global companies have transformed their supply chains on a continuing basis as economic and political circumstances have changed to enable them to deliver best cost and best value to the ultimate customer.
- The scope and magnitude of trade flows between the United States and other countries have grown considerably in the last several decades. One very important development has been the growth in the volume of trade with China and several other Asian countries.
- Global trade is based upon economic factors of production including land, labor, capital, and entrepreneurship. Population and the age distribution of a country total population are important factors for labor availability
- Migration and urbanization are important issues for economic development and vitality of the economy.
- Success in the global marketplace requires ongoing development of a cohesive set of strategies including customer service, product development, business model, and supply chains management. Supply chains have become increasingly more important during the 21st century.
- Supply chain security has taken on increased significance since September 11, 2001. Companies individually, jointly, and in cooperation with the various levels of government are actively involved. The federal government, in particular, has expanded the scope of its regulations and policies for global security.
- U.S. ports play a critical role in global supply chains since over 90 percent of global trade U.S. passes through them. Ports are also an important focus for security. The U.S. needs to focus more attention upon port infrastructure.
- Canada and Mexico are ranked number 1 and 3, respectively, on the list of most important trading partners with the United States. That relationship is enhanced by the North American Free Trade Agreement ratified by Congress in 1994. While the treaty had lofty goals, it still is experiencing problems with full implementation of its objectives. Nevertheless, it has helped to foster trade in North America.

STUDY QUESTIONS

1. Explain the underlying rationale for global trade and explain the difference between comparative and absolute advantage.

Answer: Adam Smith in his renowned treatise, THE WEALTH OF NATIONS, provided not only a rationale for a ***market economy based upon competition***, but also advanced a rationale for trade among nations called the Theory of Absolute Advantage. Smith argued that ***countries would be better off if they would trade commodities where each country had an economic or cost advantage for one or more of the products that they produced***. In other words, ***sell or trade products where they had a cost advantage and buy or trade for products where they did not have an advantage***. Smith concluded that all participants in such transactions would be better off than trying to be self-sufficient. While the analysis was relatively simplistic, it was valuable advice, especially for that time period.

The underlying logic of Absolute Advantage was also used by Adam Smith to ***advance the rationalization what he called "division of labor" or specialization of labor***. The latter concept led to mass production or assembly lines in manufacturing plants. The underlying logic was that the specialization led to increased aggregate output and lower unit cost, and provided an opportunity for regional specialization and inter-region commerce for an overall economic benefit.

The theory of Comparative Advantage was advanced about 40 years later by several economists. They maintained that even ***if one country had a comparative advantage (lower cost) in the production of two products, they should focus on the production of the one that they had the greatest advantage and trade for the other***. The analyses were also somewhat simplistic because not all of the relevant costs were considered. However, the logic was sound as long as total landed costs were considered. ***The importance of both Absolute and Comparative advantage is they demonstrate that global trade and related global supply chain flows can be based not only upon scarcity of items among countries but also differences in the cost of production with implicit benefit to all parties involved***.

As one would expect, later economists explored more fully the rational of global trade and specialization. For example, the Factor Endowment Theory postulates that ***when a country has more of one of the four so-called Factors of Production (land, labor, capital and entrepreneurship), they may have a comparative advantage in producing one or more products***. For example, a country with an abundance of capital and an educated workforce may produce high tech products and import labor intensive products and agriculture products.

2. What are the essential factors for economic growth and increased development of global trade flows? Why are they so important in today's global economy?

Answer: Essential factors for economic growth and increased development of global trade flows include population growth and age distribution, urbanization, land and resources, economic integration, knowledge dissemination, labor mobility, financial flows and investment in infrastructure by public and/or private sources, faster communication systems, improved financial services for the effective flow of goods and services. These factors are the driving forces for globalization around the world and need to be discussed in order to understand the future course of global trade and development.

3. **A number of authors have observed that traditional, hierarchical organizations have changed in the current global economy. How have organizations changed? Why have they changed? What are the impacts of those changes likely to be?**

Answer: Changes have resulted in shorter product life cycles, new forms of competition and new business models. Traditional organizational structures and related business models frequently change as companies get more involved in outsourced manufacturing and some logistical activities such as transportation, warehousing, and order fulfillment. All of this impacts the supply chain and its related customer service activities. Out sourcing, off-shoring and insourcing have become part of the lexicon of 21st century businesses, and information technology has allowed supply chains to be redesigned for more efficiency and effectiveness as well as better execution. Supply chain management has become an important and for some organizations, even critical ingredient for their competitive strategy and success in this global environment. Companies have transformed themselves by changing their supply chains to take advantage of global opportunities.

The synergism between globalization and technology, especially, has permanently changed the dynamics of the world's marketplace. This new era has and will continue to spotlight supply chains as a critical part of the ability of organizations to compete economically.

4. **What private sector company epitomizes the concept of a global company with a well managed global supply chain? Provide a rationale for your response.**

Answer: Evaluate each student on the merits of their work

5. **What special role do supply chains play in the globalization of organizations? What contributions do successful supply chains make to companies?**

Answer: A supply chain is boundary spanning; that is, encompassing a group of interrelated firms focused on delivering the best price or value products and services to the ultimate customer at the end of the supply chain. It was also noted a supply chain can manage four important flows, namely, materials/products, information, financials and demand.

An important characteristic of today's world economy is the increasing regional economic integration. The globalized economy has led to multilateral trade promotion and lowered barriers to international business transactions. The best supply chains allow organizations to compete very successfully on a national, regional and global basis.

6. **What is meant by the current description of the global economy that "time and distance have been compressed"? Do you agree? What has been the impact of this compression?**

   One can hardly dispute that the exponential rise and evolution of information technology, boundary spanning trade agreements, advances in transportation medium capabilities/capacities (better shipping, better over-ground transportation, access to ports and shipping lanes, etc.), and reduced product life cycles, along with many other factors, have combined to relatively "compress" time and distance when compared to business models of yesteryear. Whereas a customized personal computer may have taken weeks to build and ship in the mid-90s, an accepted standard due to lack of available alternative, can now reach the customer in a matter of days, if not hours.

   It can be argued supply chains help to establish the limits of what is competitively possible in the market. In other words, the cost and value at the end of the supply chain help determine a firm's ability to compete in a global marketplace. Good supply chains are business power and good supply chain managers are continually pushing the limits of their supply chains to be viable in both domestic and global markets.

   Operating globally has become easier to accomplish due to advances in information/communications technology, as noted above, and the continuing improvement of specialists such as UPS, FedEx, DHL, etc., which can provide global supply chain services at a very reasonable cost. A growing number of specialists and continuing improvements in information technology/communications are contributing to the flattening of the world.

   Obviously, large global companies are also contributing to this phenomenon.
   It is safe to conclude supply chains and supply chain management play an important role in the global economy and have helped to push the growth and success of companies that do "supply chaining" very well. Reduced order cycle time, for example, has become an important part of supply chain management since it can lead to lower inventory levels for customers, improved cash flow, lower current assets and accounts receivable. Conversely, the increased length and complexity of the supply chain make it more difficult to achieve shorter lead times. Global supply chains impact all with lower prices, increased array of products, and convenience (read 24/7, one-stop shopping, etc.), but are not without challenges.

7. **Why are customer service and its related strategy so important for companies operating global supply chains? Do you think that customer service is more important than lower cost to the customers?**

From a customer service perspective, global markets and strategy have four important characteristics. First, companies attempt to standardize to reduce complexity, but they have to recognize that global markets need some customization. For example, in contrast to the U.S. market where large retail stores buy in volume quantities for delivery to their large warehouses, less developed countries may have tiny retail stores that are only 80 to 100 square feet. This means deliveries of small quantities, more frequent deliveries, different packaging, etc. Customer service levels have to be adjusted for these markets in terms of delivery schedules, volumes, order fulfillment, and other areas.

Second, global competition often reduces the product life cycle, as previously mentioned, since products can be copied or reengineered quickly by competitors. Technology companies are faced with this phenomenon even in the U.S. market, but globally other products are faced with similar experiences. Technology companies counteract with continual upgrades and new products. Apple, for example, had great success with its iPod, but it quickly followed this with the iPhone, and now the iPad, to maintain financial momentum. Shorter product life cycles present challenges for inventory management with respect to obsolete items. Customer service levels are also impacted because changes have to be made as the product matures in terms of sales volume and then declines, which reduces product profitability. Usually, companies cannot afford to provide the same level of customer service when the product volume declines.

Third, traditional organizational structures and related business models frequently change since companies get more involved in outsourced manufacturing and some logistical activities such as transportation, warehousing, and order fulfillment. All of this impacts the supply chain and its related customer service activities. The collaboration indicated requires effective coordination among the various parties to ensure that customer service levels (on-time delivery, complete orders, reliability, etc.) are maintained.

There are many challenges for supply chain managers. The soft side of global supply chain management presents significant challenges. The social and cultural elements come into play when dealing with foreign business partners and require daily effort to ensure smooth supply chain execution. This is because “soft” issues and physical problems are, in many cases, not mutually exclusive. Misunderstanding the culture and miscommunicating can cause havoc on the physical side of global supply chain planning and execution. Cross-cultural communication is made complicated by not only different languages and time zones, but also other culturally-rooted practices such as communication styles, different approaches to completing tasks, different attitudes toward conflict, and different decision-making styles, among other factors.

Fourth, globalization introduces more volatility and complexity. It is much more likely that global supply chains will experience challenges with weather, terrorism, strikes, and other disruptions. The need for flexibility and responsiveness is a requisite for customer service throughout the supply chain. The expanded networks cover long distances and many are complex. Trade policy, regulations, tariffs and currency exchange rates exacerbate the level of complexity for global supply chains. Furthermore, the number of intermediaries that can be involved adds another additional layer of complexity.

When considering which is more important, customer service or lowered cost, one must take into consideration not only physical, but “soft”, cultural factors as well. Some, more affluent sectors may be willing to pay an increased price for goods so long as those goods are backed by a good and robust customer service “tail” – think customer loyalty. However, more developing nations and counties, whose population may be more defined by “fickle” youth and rapid change of taste, customer service becomes less important when compared to price point. These phenomenon must then be weighed against the physical cost of providing either prime customer service, competitive cost, or a delicate balancing of both.

8. What is meant by the phrase “that supply chain security, especially on a global basis,” is a balancing act? Is the pendulum swinging in one direction or the other?

Given the importance of global trade to the United States, a delicate balance exists between security and the efficient flow of global commerce. If security is too tight it could impede the flow of needed goods or materials, causing delays and decreased efficiency. Ports and border gateways can become congested because of security measures. Consequently, clearance time has increased from hours to days in some instances. Steps have been taken to improve the flow through border crossing that include infrastructure improvements/adjustments, and regional and global trade agreements. This is necessary for our global economy. There are continuing challenges to achieving this balance, for certain. For example, migration from Mexico into the U.S continues to be a political “hot button” because of the relative ease of entry into the U.S.

Due to globalizations inherent threats, physical, geopolitical, weather related, or otherwise security measures are necessarily increasing to adjust, while still attempting to pay homage to cross-boundary principals that help define global supply chains and corresponding management thereof.

9. Why are regional trade agreements among countries so important in the global economy? What is your evaluation of NAFTA and its impact on the participating countries?

Steps have been taken to improve the flow through border crossing that include infrastructure improvements/adjustments, and regional and global trade agreements. This is necessary for our global economy.
Electronic filing of cargo information has helped to improve the border clearance times. The Trade Act of 2002 requires exporters to electronically submit shipping documents to U.S. Customs 24 hours after delivery to a port or 24 hours before vessel departure. For imports, the manifest must be filed by the ocean carrier or the consolidator 24 hours before the U.S.-bound cargo is loaded on the vessel in the foreign port. Because of Canada’s importance as a trading partner, an expedited procedure (FAST) has been developed to speed up clearance through the U.S.-Canadian border.

The North American Free Trade Agreement was signed by leaders of Canada, the United States, and Mexico in 1993 and was ratified by Congress in early 1994. NAFTA establishes free trade between these three countries and provides the way the agreement is to be interpreted. NAFTA states that the objectives of these three countries is based on the principles of an unimpeded flow of goods, most favored nation (MFN) status, and a commitment to enhance the cross-border movement of goods and services. MFN status provides the lowest duties or customs fees, if any, and simplifies the paperwork required to move goods between the partner countries. In the long run, the goal of NAFTA is to create a better trading environment. NAFTA's goals involve making structural changes to operate a borderless logistics network in North America. Information systems, procedures, language, labels, and documentation are being redesigned to expedite the border crossings and the flow of commerce.

Canada and Mexico in the top three recipients of exports from the United States. Canada is by far the most important trading partner of the U.S., in terms of exports. The U.S. is a major global exporting country with some concentration of trade with its two closest "neighbors", but also with a broad reach throughout the world.

10. What is the role of ports for global commerce and why is that role important? Is our current port infrastructure sufficient? Why or why not?

Ports are a critical part of global supply chains and also a major focus for global security. Every day, thousands of containers from countries all around the world arrive at U.S. seaports.

Over $2 trillion in trade value per year passes through U.S. ports, and over $20 billion is collected in industry fees and taxes. The 50 states utilize about15 ports to handle their imports and exports; over $6 billion worth of goods moves in and out every day. About 99 percent of the international cargo of the United States moves through its ports, or about 3 billion tons annually. In 1960, international trade accounted for about 9 percent of U.S. gross domestic product (GDP). Today, it is over 30 percent.8 Accounting for a threefold increase in international trade using largely the same historical number and locations of ports, infrastructure may need to be reevaluated, particularly if, due to globalization and global warming other shipping routes gain primacy (Suez Canal widening, Northeast with Northwest Passage, etc.).

U.S. ports also play a vital role for the cruise industry. In 2015, about 80 million passenger nights were booked on North American cruises. The top five departure ports account for about 60 percent of the North American cruise passenger departures. The top three are Florida ports: Miami, Fort Lauderdale and Port Canaveral. This flow of passenger traffic has a very positive economic impact on the U.S. economy because of the expenditures to support the cruise industry.9

The ports also play a vital role in national defense and security. The ports are bases of operation to deploy troops and equipment. Port security is very important for military and civilian purposes, and it is a shared responsibility between the public and private sectors.

Case Study

CASE 2-1

Red Fish, Blue Fish, LLP:

1. **Explain the advantages of a trade agreement and how it might impact a company like red fish-blue fish?**

While the answer to this question is straight forward, an option for the instructor is to have the students do some research on the internet about the so-called Trans-Pacific Trade Agreement which was a major goal of the Obama Administration and was supported and opposed by legislators and others. It is a far reaching agreement intended to have a major influence on trade between the U.S. and many Asian countries. Students could be assigned to present the case for and/or against the agreement. It will elevate their understanding and appreciation of the discussion pro and con about such agreements.

As indicated in the Chapter the advantages of such an agreement is that it eases the trade barriers between the various countries and promotes a flow of commerce (goods and services) that can have a very positive impact on the countries participating as suggested by the concepts of Absolute and Comparative advantage in the Chapter. The expectation is that the long run advantages of lower prices, improved product availability enhanced employment along with economic growth will outweigh any short run economic displacement.

2. **What makes the demographics of the Asian countries attractive for future trade development?**

One of the important dimensions of the Asian populations is the size of the potential workforce. The median age of some of these countries is also important along with their education. As Adam Smith and other economists have pointed out Labor is one of the four most important factors of production. European countries and even the U.S. are faced with aging populations that can be a disadvantage to economic growth in terms of a dynamic work force but also a liability in terms of the health care needed for an aging population. The very important related aspect of the larger, younger population is the size of the consumer market and their need (if gainfully employed) for goods and services. Some of these countries can be a source for minerals and agriculture products also. Developed countries can frequently be the source of the needed capital for economic expansion. The mutually beneficial dimension is an important argument for such a relationship. The U.S. was an example during the Colonial Era of such a relationship in terms of its development.

An interesting addition to this discussion is to ask the students to examine the data presented in the chapter (as well as other sources) and present an analysis of what countries would be most attractive for U.S. trade relations.

3. What challenges would red fish-blue fish likely experience?

Like many small companies they would probably be faced with the challenge of not enough experience and talent to exploit all the opportunities. However, they have been selling and buying in these countries using intermediaries and the internet which they can continue to do. They need to add resources ((people and capital) to be more aggressive. Also they need to analyze the comparative data presented in the chapter and from other sources to determine if the are focused upon the right market opportunities.

This question can also be refocused by assigning groups of students to work as teams to analyze assigned countries to evaluate for Red Fish-Blue Fish,