**Chapter 1 Solutions Manual**

**Integrative Learning Exercises**

During this first exercise, students discuss how SC&O is relevant to their areas of study, such as finance, marketing, or the like. The purpose of this exercise is to help the students understand how SC&O is relevant to their careers. Let the students spend 5–10 minutes in groups to discuss this and then open up class discussion.

**Integrative Experiential Exercises**

In this exercise, students go into a company and identify a couple of key processes. They discuss process design and process control. They also find out how the companies are improving processes. Usually, the assigned teams make about a 10-minute PowerPoint presentations with their findings.

**Discussion Questions**

1. **How is operations management different from supply chain management?**

Supply chain management is cooperation between different firms to create value for customers. Operations management is the administration of transformation processes that create value for customers by meeting their needs or enabling them to meet their own needs.

1. **Why have organizations combined supply chain and operations management into SC &O?**

Combining the terms “supply chain” and “operations” emphasizes the linkages between firms that tie the operations of those different firms together with the goal of satisfying customers. The move to SC&O management from just operations management externalizes the view of a productive firm in a way that is healthy for the world, individual firms, and their global competitiveness.

1. **Identify some of the strategic factors associated with the decision to bring manufacturing back on-shore (e.g., nearshoring).**

The strategic factors associated with the decision to bring manufacturing back on-shore can be separated into two categories: those related to the physical environment and those related to the task environment. Important strategic aspects of the physical environment include access to physical resources and suppliers, as well as sustainability initiatives and costs. Strategic aspects of the task environment include economic structures, skills of the employees, compensation structure, technologies, and government agencies.

1. **What is meant by a process? Why do business students need to understand processes?**

Processes are the means by which all work is performed. Business students must understand processes because all managers are responsible for the management of processes.

1. **What are the phases involved with process design? How can process design be expedited?**

The phases of process design are concept design, preliminary design, implementation, and post-design review. This process is expedited through concurrent engineering.

1. **What is process improvement, and how is it related to customer needs?**

Process improvement is a proactive effort to enhance process performance. Specifically, it means to enhance the ability of the process to provide products or services that are aligned more closely with customer needs.

1. **What is meant by globalization? Why is this concept of importance to SC&O managers?**

Globalization is the establishment of production and marketing facilities in foreign countries. This concept is important for SC&O managers given the global nature of supply chains in most industries. SC&O managers must recognize that through globalizing, processes are disrupted as there are significant changes to the physical environment, the task environment, and the social environment in which they operate.

1. **Briefly list and define three mechanisms that firms use in globalizing their operations.**

Firms license their products overseas which gives them market penetration without spending money to globalize. Firms enter into joint ventures and find partners to help them navigate difficult foreign markets. Firms can also globalize which involves investing in international operations.

1. **What is meant by the statement “companies no longer compete against one another; supply chains compete against supply chains”? Why is this statement important to understand?**

This statement means that a supply chain must compete with supply chains of other firms that follow their own supply paths. The supply chain that performs the most efficiently wins the customer. This is important to understand because the each step of the chain must be managed to deliver the most value to the customer. A firm’s performance is no better than the weakest link in its supply chain.

1. **How do value chain activities differ from support activities? What are a firm’s core activities?**

Value chain activities are the core activities that a firm performs. These core activities are process steps that enhance products in a way that makes them more valuable to customers because the products are better suited to meet customer needs. The core activities are inbound logistics, production, and outbound logistics.

1. **Identify the three primary flows found in a supply chain. Why is it important for an SC&O manager to understand these flows?**

The three primary flows of a supply chainare (1) *product flows*, (2) *monetary flows*, and (3) *information flows*. These flows are important to understand because they directly affect the ability of a supply chain to compete in providing value to end customers.

1. **In what fundamental way do information flows differ from monetary and product flows in a supply chain?**

Information flows are fundamentally different from monetary and product flows because they are bidirectional, meaning that information flows move both upstream and downstream in the normal conduct of supply chain commerce.

1. **What makes service supply chains more complex to manage than product supply chains?**

Service supply chain management is often even more complex than manufacturing management because the customers are also the suppliers. The fact that the customer is also the suppliermakes services supply chains especially bidirectional, meaning that product resources flow from customers to producers and then back to those same customers.

1. **Briefly describe two basic feedback loops found in operations management.**

The first feedback loop occurs when information is gathered about processes in order to monitor and to improve their efficacy. We term this monitoring activity as the control process. Control activities may take the form of process control, cost control, labor control, inventory control, or quality control. The second feedback loop is where information is gathered from customers, either by the firm or a third party.

1. **Why are many colleges and universities seeing an increase in the number of students who are interested in studying SC&O management?**

The increase in the number of students interested in supply chain management is due to recent upswings in job openings, comfortable salaries, and prospects for advancement.

**Case: Williamston Manufacturing**

**Answer**

The decision to manufacture in low-wage countries is really a question of trade-offs and access to manufacturing expertise. Although the low wages paid to workers help to reduce manufacturing costs, other costs often offset those gains, and the total cost of ownership must be considered. There is also increased risk of supply as the length of the supply chain grows, and there are currently potential risks regarding the protection of intellectual property.

Shipping is a primary offsetting cost to savings in wages. As the length of the supply chain physically grows, and distance from the end consumer increase, so do shipping costs. “Shipping costs have been rising, containers are expensive and staff have to be maintained in both countries to manage the operation.”

Another cost trade-off concerns the potential level of automation in the manufacturing process. The more a process can be automated, the less advantage is gained in moving the production further from the end consumer. Often there is a larger cost savings by maintaining local manufacturing and production and increasing the level of automation in the manufacturing process.

Manufacturing overseas also affects a firm’s ability to react rapidly to changing customer needs and preferences. “It is also difficult to react quickly if the market changes.” One reason for the difficulty is that the physical length of the supply chain increases the minimum amount of inventory needed to maintain customer service levels. In the case of Peerless AV mentioned in the article: “Typically there would be 30 days or so of inventory at each stage of the supply chain: the stock held by the suppliers to the Chinese factory, that factory's inventory, the content of a shipping container on its way to America, and so on. A design change could take at least six months to implement. Now the company can get a prototype to a customer in a couple of weeks.”

Another factor affecting the decision to move manufacturing is access to the required manufacturing expertise. Often manufacturing in China, for example, is not cheaper, but manufacturing expertise is concentrated in some regions that simplifies the supply chain and reduces complexity in procurement. This strategy targets an established area of suppliers and producers who work in tandem to reduce manufacturing costs through collaboration and physical proximity.

A further consideration in overseas manufacturing is the protection of intellectual property. Although this situation is improving in China, there is still a risk of losing control over sensitive information that could cost a company its strategic advantage in the world’s markets. This has significantly affected many companies whose products have been reverse engineered and sold throughout the world.

Finally, the decision of where to manufacture is also a question of supply chain exposure to disruption from natural disasters and unstable political systems. Often there is advantage to spreading out production across multiple locations to ensure alternate supply sources when disruptions occur at a primary source. This ensures a firm’s ability to supply their customers continuously.