# *OperationsÂ and Supply ChainÂ Management 16th edition Jacobs Solutions Manual*

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# CHAPTER 1
# OPERATIONS AND SUPPLY CHAIN MANAGEMENT

## Discussion Questions

1. Using Exhibit 1.3 as a model, describe the source-make-deliver-return relationships in the following systems:

   *a. An airline*
   *Source: Aircraft manufacturer, in-flight food, repair parts, computer systems*
   *Make: Aircraft and flight crew scheduling, ground services provided at airports, aircraft maintenance and repair*
   *Deliver: Outbound and arriving passenger service, baggage handling*
   *Return: Resolve any post-service issues such as lost or damaged luggage*

   *b. An automobile manufacturer*
   *Source: Suppliers of components and raw materials*
   *Make: Manufacturing of vehicles and components or subassemblies to be sold as spare parts*
   *Deliver: Delivery to and sales from dealerships, delivery of spare parts to the wholesale system*
   *Return: Warranty and recall repairs, trade-ins*

   *c. A hospital*
   *Source: Medical supplies, cleaning services, disposal services, food services, qualified personnel*
   *Make: Inpatient rooms, outpatient clinics, emergency room, operating rooms*
   *Deliver: Scheduling patients, providing treatment, ambulance service, family counseling*
   *Return: Billing errors, follow up visits*

   *d. An insurance company*
   *Source: Supplies needed for the office, underwriters, legal authority to operate*
   *Make: Establish policy guidelines and pricing, field agent/representative and facility network, develop Internet service capabilities, establish preferred vehicle repair service network*
   *Deliver: Meet with and advise clients, write policies, process and pay claims*
   *Return: refund of overpayments*

2. Define the service package of your college or university. What is its strongest element? What is its weakest one?

   *The categories with examples are:*
   *Supporting facility - location, buildings, labs, parking*
   *Facilitating goods – class schedules, computers, books, chalk*
   *Explicit services – classes with qualified instructors, placement offices*
   *Implicit services – status and reputation (e.g., Ivy League schools)*



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*At Indiana University and the University of Southern California, among their strongest elements are their business schools and their Operations Management programs (of course). Both also have very dedicated alumni networks. A weak element of Indiana University is its weak football program; for USC, weak elements are on-campus parking and housing.*

3. What service industry has impressed you the most with its innovativeness?

   *Our vote goes to cruise lines which have introduced such onboard innovations as wave machines for belly boarding and rock climbing walls, as well as all sorts of other amenities to keep cruisers involved. The industry is doing record business as well.*

   *Some of the standout companies in less innovative industries are Bank of America (has a formalized research program to try out new customer services/amenities such as video screens in next to teller lines), Intuit (e.g., putting Quicken money management software online), Ikea, JetBlue Airlines, and Progressive Insurance (discussed later in the book).*

4. What is product-service bundling and what are the benefits to customers?

   *Product-service bundling is adding Value-added services to a firm's product offerings to create more value for the customer. This provides benefits in two areas. First, this differentiates the organization from the competition. Secondly, these services tie customers to the organization in a positive way. Alternatively, bundling can also involve adding products to a service, for example, adding the sale of convenience items and snacks at a hotel.*

5. What is the difference between a service and a good?

   *A service is an intangible process (you can't hold it in your hands), while a good is the physical output of a process.*

6. Look at the job postings at http://www.indeed.com and evaluate the opportunities for an OSM major with several years of experience.

   *There are pages and pages of these when you do a search on operations supply chain management. Here are some examples:*

   *Global Active Ingredient Supply Planner*
   *FMC Corporation*
   *US - PA - Philadelphia*
   *This is your opportunity to join the Agricultural Products Group (APG) and work on the team responsible for global active ingredient planning. You'll serve as a central Supply Planner working in tandem ...*

   *Purchasing Manager (Buyer)*
   *Texas Dow Employees Credit Union (TDECU)*
   *US - TX - Lake Jackson - Nearest Metro area - South Houston*



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*Education Accredited university degree in Business or Marketing with certification in Purchasing, Inventory Management, or Logistics. Accredited Purchasing Practitioner (APP) or Certified Purchasing ...*

*Product Line Manager*
*Cintas Corporation*
*US - OH - Mason*
*High School diploma or GED required, 4 year degree preferred Knowledge of and experience using Internet and Microsoft Office (Word, Excel, PowerPoint, and Email) 3 years management experience preferred ...*

*Director Purchasing*
*Legendary Baking*
*US - CO - Denver*
*CERTIFICATIONS & LICENSES • Valid Driver's License and car insurance. • Certified Purchasing Manager certification (C.P.M.) preferred. • Certified Food Purchasing Manager ...*

*Process Improvement Manager*
*ARAMARK Corporation*
*US - TX - Houston*
*Bachelor's Degree required. Technical Engineering discipline within Industrial, Mechanical, Chemical, or Food Operations strongly preferred. • Minimum 5 years Lean manufacturing experience coupled ...*

7. Recent outsourcing of parts and services that had previously been produced internally is addressed by which current issue facing operations and supply management today?

   *The coordination of relationships between mutually supportive but separate organizations.*

8. What factors account for the resurgence of interest in OSCM today?

   *With companies facing competition on a global scale, and ever-advancing manufacturing and information technologies, firms realize the competitive advantage their OSCM functions can provide if properly managed. Many have found that the same old way of doing business leaves them unable to compete successfully.*

9. As the field of OSCM has advanced, new concepts have been applied to help companies compete in a number of ways, including the advertisement of the firm's products or services. One recent concept to gain the attention of companies is promoting s*ustainability*. Discuss how you have seen the idea of sustainability used by companies to advertise their goods or services.

   *There of course will be a number of examples that students will bring up, though they may need some prodding to jog their memories. Some examples to start with might be IBM's "I'm an IBMer" campaign where they advertise how they are "building a smarter planet." Bottled*



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*water manufacturers have reduced the amount of plastic used in many of their products, thus saving production and distribution costs, but also allowing them to advertise how the new bottles are better for the environment because they result in less waste.*

10. Some people tend to use the terms effectiveness and efficiency interchangeably, though we've seen they are different concepts. But is there any relationship at all between them? Can a firm be effective but inefficient? Very efficient but essentially ineffective? Both? Neither?

    *Firms can be anywhere on these two dimensions. It is possible for a firm to be the best at what they do in serving their market, but be very wasteful in doing so. Alternatively, a firm could squeeze every last dollar out of their processes but fail to deliver what the market expects and desires. Of course, the best firms will provide the goods and services that the market desires, exactly as the market desires, and do so at a minimum cost. Firms that are both inefficient and ineffective do not survive for long in any market.*



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## Objective Questions

1. What are the three elements that require integration to be successful in operations and supply chain management? (Appendix E)

   *Strategy, Processes, and Analytics*

2. Operations and supply chain management is concerned with the design and management of the entire system that has what function?

   *Produces a product or delivers a service*

3. Match the following OSCM job titles with the appropriate duties and responsibilities.

| | | | |
|---|---|---|---|
| *C* | Plant manager | A: | Plans and coordinates staff activities such as new product development and new facility location |
| *D* | Supply chain manager | B: | Oversees the movement of goods throughout the supply chain |
| *A* | Project manager | C: | Oversees the workforce and resources required to produce the firm's products |
| *E* | Business process improvement analyst | D: | Negotiates contracts with vendors and coordinates the flow of material inputs to the production process |
| *B* | Logistics manager | E: | Applies the tools of lean production to reduce cycle time and eliminate waste in a process |

4. What high-level position manager is responsible for working with the CEO and company president to determine the company's competitive strategy?

   *Chief Operating Officer*

5. Order the following major concepts that have helped define the OSCM field on a time line. Use 1 for the earliest to be introduced, and 5 for the most recent.

   *3* Supply chain management
   *1* Manufacturing strategy developed
   *5* Business analytics
   *2* Total quality management
   *4* Electronic commerce



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6. Which major OSCM concept can be described as an integrated set of activities designed to achieve high-volume production using minimal inventories of parts that arrive at workstations exactly when they are needed?

   *Just-in-time (JIT) production*

7. Operations and supply chain _____ leverages the vast amount of data in enterprise resource planning systems to make decisions related to managing resources.

   *analytics*

8. A process is _____ if it operates at the lowest possible cost.

   *Efficient*

9. A customer picks a product over a similar product due to the _____ value of the product.

   *Value*



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**Analytics Exercise: Comparing Companies Using Wall Street Efficiency Measures**

Each student is asked to pick an industry and compare three companies within that industry based on Efficiency Ratios The following is typical of what you might obtain:

| | BP | Shell | ExxonMobil |
|---|---|---|---|
| **Management Efficiency** | | | |
| Days sales outstanding | 29.47 | 42.70 | 34.40 |
| Days inventory | 28.85 | 26.51 | 31.51 |
| Payables period | 61.31 | 53.23 | 68.69 |
| Cash conversion cycle | -2.99 | 15.98 | -2.87 |
| Receivables turnover | 12.39 | 8.55 | 10.64 |
| Inventory turnover | 12.65 | 13.77 | 11.58 |
| Asset turnover | 1.04 | 0.93 | 0.78 |

Students are then asked to identify which company appears to have the most productive employees.

With this data we see that ExxonMobil does very well in that its cash conversion cycle is -2.87 days. This is amazing! The Inventory Turnover is highest for Shell indicating that the company is the most efficient from an operations and supply chain processes view. BP has the highest Asset Turnover, which relates to the use of its facility and equipment assets.

Overall, these are all three very strong companies relative to there operations and supply chain processes.

Of course, the data generated by each student will be different and an interesting interchange can be developed with students each presenting what they found from their research. It is very interesting to do comparisons across industries; retailers versus oil companies, and computer makes versus software companies, for example.



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