Contemporary Logistics 12th edition Murphy Solutions Manual

SKU: 9780134519258-SOLUTIONS

PART II
ANSWERS TO END-OF-CHAPTER QUESTIONS

CHAPTER 2: LOGISTICS AND INFORMATION TECHNOLOGY

2-1. In what ways can information be helpful in logistics and supply chain management?

There are a number of ways in which information can be helpful in logistics and supply-chain management. These include, but are not limited to, greater knowledge and visibility across the supply chain, which makes it possible to replace inventory with information; greater awareness of customer demand via point-of-sale data, which can help improve planning and reduce variability in the supply chain; better coordination of manufacturing, marketing, and distribution through enterprise resource planning systems; and streamlined order processing and reduced lead times enabled by coordinated logistics information systems.

2-2. List the six general types of information systems, and give one logistics application for each one that you've named.

One general type is office automation systems, and a logistics application could be spreadsheets that calculate optimal order quantities. A second is communication systems; one logistics application involves global positioning systems. Transaction processing systems are a third general type, with point-of-sale systems being a logistics application. Management and executive information systems are a fourth general type of information systems; a logistics application involves logistics information systems. A fifth general type of information system is decision support systems, with warehouse management systems being a logistics-related application. The sixth, and final, general type of information system is the enterprise system, represented by logistics modules of enterprise resource planning systems.

2-3. Do you view the spreadsheet as the most relevant general software package for logisticians? Why or why not?

The text indicates that spreadsheets are indeed the most relevant general software package for logisticians. Today's spreadsheets have developed to the point that they are able to solve for basic logistics optimization models. These spreadsheet-based optimization models provide a method for logisticians to conduct a variety of what-if analysis in support of their decision making.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

2-4. How can communication systems facilitate logistics management in the aftermath of situations such as terrorist attacks and natural disasters?

One example involves the substitution of information for inventory. The total shutdown of the U.S. aviation system following the terrorist attacks of September 11, 2001 caused many air shipments to be diverted to trucks—thus adding to delivery times. Airfreight companies such as FedEx used their communication systems to inform customers that their shipments were being diverted and when the shipments would be arriving.

2-5. What are some of the advances in telecommunications technology that have occurred since this book was first published? How do these advances help logistics managers?

Advances in telecommunications technology since the first edition of this book include fax machines, personal computers / tablets, cell phones / smart phones, and wireless communication. One example of wireless communication involves global positioning systems (GPS), and GPS systems can help logisticians to increase productivity, reduce operating costs, and improve customer relations. Tablets, such as an iPad, can be used to improve the productivity of warehouse workers, improve pick accuracy, reduce paperwork, and increase asset utilization.

2-6. Discuss how global positioning systems have become quite valuable in transportation management.

Global positioning systems (GPS) have become quite valuable in transportation management because of high fuel costs and the relentless pressure to improve efficiency and productivity. Indeed, transportation companies that have implemented GPS have reported an increase in worker productivity, reduced operating costs, and improved customer relations. One study found that GPS implementation allows transportation companies to recapture nearly one hour per day of their drivers' time, which translates into labor savings of approximately $5,500 per employee.

2-7. Discuss the benefits and drawbacks of EDI.

Potential benefits to EDI include reductions in document preparation and processing time, inventory carrying costs, personnel costs, information float, shipping errors, returned goods, lead times, order cycle times, and ordering costs. In addition, EDI may lead to increases in cash flow, billing accuracy, productivity, and customer satisfaction. Potential drawbacks include a lack of awareness of its benefits, high setup costs, lack of standard formats, and incompatibility of computer hardware and software.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

2-8. Discuss the relationship between automatic identification technologies and point-of-sale systems.

Automatic identification systems are an essential component in point-of-sale (POS) systems; the idea behind POS systems is to provide data and enhance managerial decision making, and automatic identification technologies can be very helpful in so doing. Operationally, POS systems involve scanning Universal Product Code (UPC) labels, either by passing the product over an optical scanner or recording it with a handheld scanner.

2-9. Why are some companies hesitant to adopt RFID technology?

A major drawback to RFID adoption involves the costs of installing the related hardware and software, which can range from $100,000 for smaller companies to $20 million for larger companies. Another drawback to RFID adoption involves privacy concerns, such as the inappropriate use of the technology. Yet another drawback is that data accuracy can be lower items with high moisture content, such as fruits and vegetables.

2-10. Discuss the importance of timely and accurate information to a logistics information system.

Timely information can involve several dimensions. For example, “timely” can refer to the up-to-date status of information, which can be influenced by a company’s collection and analyses procedures. Although such information should ideally involve internal and external sources, internal sources of logistics information are not always as plentiful as would be desired. “Timely” can also refer to how quickly a manager receives the requested information; this is influenced by a company’s retrieval and dissemination procedures. Faster and more powerful technology has helped to reduce retrieval and dissemination times.

Accurate information may reflect the effectiveness and efficiency of a company’s logistics information system. This means that a logistics information system needs to consider the nature and quality of the relevant data. For example, although the Internet can be a very cheap source of external information, the validity of some Internet information is questionable.

2-11. What benefits are associated with transportation management and warehouse management systems?

Organizations that have implemented transportation management systems have reported decreased empty vehicle miles, reduced fuel consumption, and reduced transportation expenditures. Potential benefits to warehouse management systems include dramatic reductions in data entry errors as well as dramatic reductions in the travel distances for order picking. Other benefits to warehouse management systems include reduced operating expenses, fewer stockouts, increased inventory accuracy, and improved service to customers.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

2-12. What is data mining? How might it be used in logistics?

Data mining can be defined as the application of mathematical tools to large bodies of data in order to extract correlations and rules; it uses sophisticated quantitative techniques to find "hidden" patterns in large volumes of data. Data mining has allowed Walmart to discover that when hurricanes are projected to hit the state of Florida, there is a dramatic increase in demand for beer and Kellogg's Pop-Tarts®. As a result, Walmart makes sure that additional stocks of these products are available when hurricanes are projected to hit Florida.

2-13. Discuss advantages and disadvantages of enterprise resource planning systems.

ERP systems are attractive because they offer the potential for lower costs and both increased productivity and customer satisfaction. In theory, ERP systems provide an opportunity for all functional areas within a firm to access and analyze a common database. This should allow for enterprise-wide coordination of relevant business processes. One of the most frequently mentioned shortcomings involves the costs of installation, and companies often fail to consider relevant costs such as upgraded hardware and employee training. Moreover, ERP systems implementation can be quite time-consuming; actual implementation times may be two to four times longer than vendor estimates. A third shortcoming of ERP systems is that they initially lacked strong application-specific logistical capabilities such as transportation or warehouse management systems.

2-14. Refer back to the logistical activities listed in Chapter 1; pick two that you're interested in and research how they have been influenced by the Internet. Are you surprised by your findings? Why or why not?

Many acceptable answers are possible for this question.

2-15. From a logistical perspective, what are some of the differences between online and in-store retailing?

For one, the orders associated with online shopping tend to be more plentiful and in much smaller quantities that those associated with in-store retailing. As such, online retailing requires an order management system capable of handling high volumes of orders. Because of smaller order quantities, online shopping is characterized by open-case, rather than full-case picking; open-case picking is facilitated by materials handling equipment such as totes and push carts. In addition, the smaller order quantities occasioned by online retailing tend to favor transport companies with extensive delivery networks and expertise in parcel shipments.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

2-16. Why is a “one size fits all” logistics strategy not likely to facilitate effective or efficient online shopping?

Rather than “one size fits all,” a variety of logistics strategies might need to be applied to online shopping and it’s important to recognize the potential trade-offs with these strategies. For example, one way of addressing the last-mile issue of customer unavailability would be to install some type of receptacle for the product at the customer’s residence. However, these receptacles might not be feasible for large items (e.g., refrigerators), perishable items (e.g., certain types of food), or extremely valuable items (e.g., jewelry).

2-17. Discuss the advantages and disadvantages of cloud computing.

Its pay-per-use formula allows customers to avoid high capital costs and thus becomes a viable option for many companies that could not afford to purchase, install, and maintain application-specific software. Other advantages include faster and less costly installation, a smaller information technology staff, and regular upgrades and updates from the software provider. One drawback is that the regular upgrades and updates can be too frequent and numerous, and customers struggle to keep up with them. There are also limited opportunities for customization. Because the Internet is the primary transaction medium, security issues such as data protection can be a concern also.

2-18. Discuss the benefits and drawbacks to electronic procurement.

Four types of benefits—transactional, compliance, management information, and price—are associated with electronic procurement. As an example, transactional benefits measure the transactional benefits, such as a reduced invoice-to-payment time, that come from e-procurement. One concern with e-procurement involves the security of information that is being transmitted; there is a risk that sensitive or proprietary information could end up in the wrong hands. Another concern is that e-procurement can be impersonal in the sense that human interaction is replaced by computer transactions.

2-19. What is the Internet of things (IoT)? How can it potentially affect logistics management?

The Internet of things (IoT) refers to the sensors and data-communication technology that is built into physical objects that enables them to be tracked and controlled over the Internet. The IoT can provide valuable information and business insights that can be used by logistics managers to reduce costs and improve service. For example, an IoT-compatible forklift could alert a warehouse manager to potential mechanical or safety issues prior to them occurring. The forklift could also provide enhanced visibility about inventory in the warehouse.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

2-20. What are some of the macro-level information technology challenges that managers face?

The text identifies three macro-level information technology challenges, the first of which is that information technology is a tool that can help managers to address organizational problems and not a panacea for them. Security is a second macro-level concern, and it's important that websites be as secure as possible from computer viruses or computer hackers. A third information technology challenge involves human resource issues; employee resistance has been identified as a major cause of information technology implementation failure.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

PART IV
CASE SOLUTIONS

CASE 2-1 TO INVEST OR NOT INVEST? THAT IS THE QUESTION

Question 1: Should the team take into account any other costs or benefits from implementing the WMS? If so, what are they?

The team is currently focused on issues surrounding the costs of the WMS, the potential benefits of the WMS, and implementation risks. Beyond these issues, students should be able to identify a variety of additional considerations that could be helpful when examining WMS implementation. For example, it could be helpful to dig deeper into the functionality that would be provided by the system and how this functionality is an improvement over the existing situation. The long-term flexibility and expandability of the WMS is another area that could be considered. As the company grows, can the WMS adapt to a changing environment in terms of volume, locations using the system, or diversity of products? Another potential consideration would be an analysis of the track record of the potential WMS provider. For example, is the provider committed to focusing on logistics solutions? Looking beyond the initial purchase decision to consider long-term maintenance of the WMS could be beneficial. It might also be helpful to gain user insights related to the WMS. The voice of the warehouse employee should be brought into the discussion to ensure no issues are missed.

Question 2: Should the team take into account any other costs or benefits from implementing the TMS? If so, what are they?

Initial responses to the TMS question may be similar to the ones provided to the preceding WMS question. Instructors should push for additional insights into transportation-specific functionality as opposed to warehousing-specific functionality. For example, whether the TMS is flexible enough to provide access to multimodal transportation planning and execution could be considered. Can the system integrate with external trading partners? In addition, given the dynamic nature of regulatory rules related to product movement, the capability of the TMS to adapt to changes in in the global shipping environment might be considered. As was the case with the WMS, the voice of the transportation planners and providers using the system should be brought into consideration.

Question 3: What are the advantages and disadvantages of implementing both technologies simultaneously?

Although these two technologies have traditionally been implemented separately by different groups, the potential integration could lead to improved coordination and planning across these two critical logistics activities. Because each technology supports a part of the order cycle, coordinating implementation could offer advantages in terms of enhanced delivery performance, reduced coordination costs, and consistency of data.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual

Potential disadvantages include increased complexity of implementation, difficulties in finding solutions that integrate well across the two areas and, ensuring both sets of users are happy with a combined solution.

Question 4: If both technologies are adopted, what changes, if any, should occur in the relationships between Pallotta's firm and his suppliers of components? His transportation providers? Discuss.

It is important for students to understand that the decision to implement a WMS or a TMS should involve clear communication with other members of one's supply chain. As the company undertakes these implementations, it will be critical to clearly set expectations with affected suppliers and transportation providers. How will the ways the companies interact be affected by the projects? What is the plan for implementation, and how might suppliers and transportation providers support any issues during implementation that could hurt customer relationships? In addition, providing regular updates on the status of the implementation can reduce any potential negative effects on their relationships with these parties as the implementation occurs.

Question 5: What would you recommend the team decide to do? Why?

Instructors may want to start with a general vote as to what the students would suggest the firm does in this situation. Students typically have varying opinions on what is best to do. Some will focus on the idea of starting where the firm is currently feeling the pressure (WMS) and then move on to the TMS implementation. Others will focus on the simplicity of implementing separately and focus on financial benefit by suggesting the firm start with the TMS and then proceed with WMS implementation. Another set of students will focus on the advantages of coordinating the implementations and point out that while the risks and benefits aren't as clear, the intangible benefits of coordinating would be the best solution. These students will refer back to the discussion of Question 3. Instructors should push the students to provide clarity around their decision-making process. The discussion provides an opportunity for instructors to discuss the need for both financial and nonfinancial considerations of these types of decisions.

Copyright © 2018 Pearson Education, Inc.

Contemporary Logistics 12th edition Murphy Solutions Manual