

2. Consider two products with the same margin earned by a retail store. Any leftover units of one product are worthless. Leftover units of the other product can be sold to outlet stores. Which product should have a higher level of availability? Why?
3. A firm improves its forecast accuracy using better market intelligence. What impact will this have on supply chain inventories and profitability? Why?
4. can tailored postponement help in such situations?
5. Zara has used local production in Europe to replenish lead times. How does this response help the company improve profitability in the trendy apparel marketplace?
6. When can tailored sourcing be used to improve profits? What are some challenges with implementing tailored sourcing?

Exercises

1. Green Thumb, a manufacturer of lawn care equipment, has introduced a new product. Each unit costs \$250 to manufacture, and the introductory price is \$300. At this price, the anticipated demand is normally distributed, with a mean of $\mu = 100$ and a standard deviation of $\sigma = 40$. Any unsold units at the end of the season are unlikely to be valuable and will be disposed of in a post-season sale for \$50 each. It costs \$20 to hold a unit in inventory for the entire season. How many units should Green Thumb manufacture for sale? What is the expected profit from this policy? On average, how many customers does Green Thumb expect to turn away because of stocking out?
2. The general manager at Green Thumb decides to conduct extensive market research for its new product. At the end of the market research, the manager estimates demand to be normally distributed, with a mean of $\mu = 100$ and a standard deviation of $\sigma = 15$. How should Green Thumb alter its production plans in Exercise 1 as a result of the market research? How much increase in profit is it likely to observe? How does the improved forecast affect the demand lost by Green Thumb because of understocking? Use cost and price information from Exercise 1.
3. The manager at Goodstone Tires, a distributor of tires in Illinois, uses a continuous review policy to manage inventory. The manager currently orders 10,000 tires when the inventory of tires drops to 6,000. Weekly demand for tires is normally distributed, with a mean of 2,000 and a standard deviation of 500. The replenishment lead time for tires is two weeks. Each tire costs Goodstone \$40, and the company sells each tire for \$80. Goodstone incurs a holding cost of 25 percent. How much safety inventory does Goodstone currently carry? At what cost of understocking is the manager's current inventory policy justified? How much safety inventory should Goodstone carry if the cost of understocking is \$80 per tire in lost current and future margin?
4. Champion manufactures winter fleece jackets for sale in the United States. Demand for jackets during the season is normally distributed, with a mean of 20,000 and a standard deviation of 10,000. Each jacket sells for \$100 and costs \$75 to produce. Any leftover jackets at the end of the season are sold for \$25 at the year-end clearance sale. How much profit does Champion expect until the year-end sale adds another \$5 to the profit? A distributor in South America has suggested shipping leftover jackets to South America for sale in the winter there rather than a year-end clearance. Each jacket will fetch a price of \$100 in South America, and all jackets sent there are shipped. Shipping costs add \$5 to the cost of any jacket so the cost of a jacket in South America is \$80. Would you recommend the South American distribution? How will this decision affect production decisions? How will it affect profitability? On average, how many jackets will Champion ship to South America?
5. Snoblo, a manufacturer of snowblowers, has three models. The base model, Reguplo, has demand that is normally distributed, with a mean of 10,000 and a standard deviation of 1,000. The three other models have additional demand that is normally distributed, with a mean of 1,000 and a standard deviation of 700. All snowblowers are manufactured on the same line. The Reguplo sells for \$200, whereas each of the other three models sells for \$220. Any unsold snowblowers are sold at the end of the season for \$80. Snoblo is considering tailored sourcing by setting up two separate lines, one for the Reguplo and one for the other three. Given that the demand for the Reguplo line is expected to decline to \$90. The production of the other three products, however, will now increase. Would you recommend tailored sourcing for Snoblo? How will tailored sourcing affect production and profitability for the snowblowers?
6. AnyLogo supplies firms with apparel for promotional purposes. A customer's demand for apparel is normally distributed, with a mean of 1,000 and a standard deviation of 200. The cost of apparel is \$10, and the selling price is \$20. Demand from each firm for apparel varies seasonally. In the summer season, the logos are adorned with the company's logo. In the winter season, the logos are adorned with the company's logo. Demand from each firm for apparel varies seasonally. In the summer season, the logos are adorned with the company's logo. In the winter season, the logos are adorned with the company's logo. Demand from each firm for apparel varies seasonally. In the summer season, the logos are adorned with the company's logo. In the winter season, the logos are adorned with the company's logo.