

- c. ROI ranks the Powertrain Division first, Lexus second, and Toyota third. Residual income ranks Lexus first, the Powertrain Division second, and Toyota third. Because the investments for each division are different, it is somewhat misleading to rank the divisions according to residual income. Lexus had the highest residual income, but it also had the largest investment. The Powertrain Division's residual income was 56% of Lexus's residual income, but it had only 40% of the investment of Lexus. This fact, along with the best ROI ranking, probably justifies the Powertrain Division being evaluated as the best division of Toyota.
- d. Return on investment:

$$\begin{aligned}\text{Investment} &= \$9,000 \div \$50,000 \\ &= 0.18 \text{ or } 18\%\end{aligned}$$

$$\begin{aligned}\text{Toyota} &= (\$30,000 + \$9,000) \div (\$200,000 + \$50,000) \\ &= 0.156 \text{ or } 15.6\%\end{aligned}$$

$$\begin{aligned}\text{Lexus} &= (\$50,000 + \$9,000) \div (\$250,000 + \$50,000) \\ &= 0.1967 \text{ or } 19.67\%\end{aligned}$$

$$\begin{aligned}\text{Powertrain} &= (\$22,000 + \$9,000) \div (\$100,000 + \$50,000) \\ &= 0.2067 \text{ or } 20.67\%\end{aligned}$$

ROI will increase for Toyota but decrease for Lexus and the Powertrain division, even though the project's ROI of 18% exceeds the company's minimum return of 15%.

Residual income:

$$\begin{aligned}\text{Toyota} &= (\$30,000 + \$9,000) - [0.15 \times (\$200,000 + \$50,000)] \\ &= \$1,500\end{aligned}$$

$$\begin{aligned}\text{Lexus} &= (\$50,000 + \$9,000) - [0.15 \times (\$250,000 + \$50,000)] \\ &= \$14,000\end{aligned}$$

$$\begin{aligned}\text{Powertrain} &= (\$22,000 + \$9,000) - [0.15 \times (\$100,000 + \$50,000)] \\ &= \$8,500\end{aligned}$$

Because the project's ROI exceeds the company's minimum return, the residual income of all divisions will increase.

Review 11-4—Solution

- a. Financial Success

- Expense as a % of revenue
- Expense variance %
- New product ROI
- Net profit
- Net profit margin
- Year-over-year revenue growth
- New product revenue

Customer Satisfaction and Brand Improvement

- Number of complaints
- Market share
- Average customer survey rating
- New customer count
- New customer sales value
- Unique repeat customer count

Business Process Improvement

- Average call wait
- Service error rate
- Fulfillment %
- Industry quality rating
- New product acceptance rate
- Number of defects reported
- Time to market on new products