

COMPILED FOR INTERNATIONAL SALES AND MARKETING MANAGEMENT

JENS JØRGEN NIELSEN
ALBERT GARLAND ELAM
ASSOCIATE PROFESSOR

FINANCIAL MANAGEMENT



SALES REVENUE
- COST OF GOODS

= GROSS PROFIT
- FIXED COST

= PROFIT (EBIT)

Financial Management

Required

with DVD and Blu-ray playback offered by competitor Nomad Manufacturing. Furthermore, the Orlicon has experienced production problems that have resulted in significant rework costs. Nomad's model has an excellent reputation for quality.

1. Draw a simple customer preference map for Scott and Nomad using the attributes of price, quality, and playback features. Use the format of Exhibit 4-1.
2. Is Scott's current strategy that of product differentiation or cost leadership?
3. Scott would like to improve quality and decrease costs by improving processes and training workers to reduce rework. Scott's managers believe the increased quality will increase sales. Draw a strategy map as in Exhibit 4-2 describing the cause-and-effect relationships among the strategic objectives you would expect to see. Present at least two strategic objectives you would expect to see under each balanced scorecard perspective. Identify what you believe are any (a) strong ties, (b) focal points, (c) trigger points, and (d) distinctive objectives. Comment on your structural analysis of the strategy map.
4. For each strategic objective, suggest a measure you would recommend in Scott's balanced scorecard.

4-34 Strategic analysis of operating income (continuation of 4-33). Refer to Problem 4-33. As a result of the actions taken, quality has significantly improved in 2017 while rework and unit costs of the Orlicon have decreased. Scott has reduced manufacturing capacity because capacity is no longer needed to support rework. Scott has also lowered the Orlicon's selling price to gain market share and unit sales have increased. Information about the current period (2017) and last period (2016) follows.

	2016	2017
1. Units of Orlicon produced and sold	16,000	22,000
2. Selling price	\$95	\$80
3. Direct materials used (kits*)	20,000	22,000
4. Direct material cost per kit*	\$32	\$32
5. Manufacturing capacity in kits processed	28,000	26,000
6. Total conversion costs	\$560,000	\$520,000
7. Conversion cost per unit of capacity (row 6 ÷ row 5)	\$20	\$20
8. Selling and customer-service capacity	180 customers	180 customers
9. Total selling and customer-service costs	\$27,000	\$32,400
10. Selling and customer-service capacity cost per customer (row 9 ÷ row 8)	\$150	\$180

* A kit is composed of all the major components needed to produce a DVD player.

Conversion costs in each year depend on production capacity defined in terms of kits that can be processed, not the actual kits started. Selling and customer-service costs depend on the number of customers that Scott can support, not the actual number of customers it serves. Scott has 140 customers in 2016 and 160 customers in 2017.

Required

1. Calculate operating income of Scott Company for 2016 and 2017.
2. Calculate the growth, price-recovery, and productivity components that explain the change in operating income from 2016 to 2017.
3. Comment on your answer in requirement 2. What do these components indicate?

4-35 Analysis of growth, price-recovery, and productivity components (continuation of 4-34). Suppose that during 2017, the market for DVD players grew 10%. All increases in market share (that is, sales increases greater than 10%) and decreases in the selling price of the Orlicon are the result of Scott's strategic actions.

Required

Calculate how much of the change in operating income from 2016 to 2017 is due to the industry-market-size factor, product differentiation, and cost leadership. How does this relate to Scott's strategy and its success in implementation? Explain.

4-36 Identifying and managing unused capacity (continuation of 4-34). Refer to the information for Scott Company in Problem 4-34.

Required

1. Calculate the amount and cost of (a) unused manufacturing capacity and (b) unused selling and customer-service capacity at the beginning of 2017 based on actual production and actual number of customers served in 2017.
2. Suppose Scott can add or reduce its selling and customer-service capacity in increments of 10 customers. What is the maximum amount of costs that Scott could save in 2017 by downsizing selling and customer-service capacity?
3. Scott, in fact, does not eliminate any of its unused selling and customer-service capacity. Why might Scott not downsize?

4-37 Balanced scorecard. Following is a random-order listing of perspectives, strategic objectives, and performance measures for the balanced scorecard.

Perspectives	Performance Measures
Internal business process	Percentage of defective-product units
Customer	Return on assets
Learning and growth	Number of patents
Financial	Employee turnover rate
Strategic Objectives	Net income
Acquire new customers	Customer profitability
Increase shareholder value	Percentage of processes with real-time feedback
Retain customers	Return on sales
Improve manufacturing quality	Average job-related training-hours per employee
Develop profitable customers	Return on equity
Increase proprietary products	Percentage of on-time deliveries by suppliers
Increase information-system capabilities	Product cost per unit
Enhance employee skills	Profit per salesperson
On-time delivery by suppliers	Percentage of error-free invoices
Increase profit generated by each salesperson	Customer cost per unit
Introduce new products	Earnings per share
Minimize invoice-error rate	Number of new customers
	Percentage of customers retained

For each perspective, select those strategic objectives from the list that best relate to it. For each strategic objective, select the most appropriate performance measure(s) from the list.

Required

4-38 Balanced scorecard. (R. Kaplan, adapted) Petrocal, Inc., refines petrol and sells it through its own Petrocal gas stations. On the basis of market research, Petrocal determines that 60% of the overall petrol market consists of “service-oriented customers,” medium- to high-income individuals who are willing to pay a higher price for gas if the gas stations can provide excellent customer service, such as a clean facility, a convenience store, friendly employees, a quick turnaround, the ability to pay by credit card, and high-octane premium petrol. The remaining 40% of the overall market are “price shoppers” who look to buy the cheapest petrol available. Petrocal’s strategy is to focus on the 60% of service-oriented customers. Petrocal’s balanced scorecard for 2017 follows. For brevity, the initiatives taken under each objective are omitted.

Objectives	Measures	Target Performance	Actual Performance
Financial Perspective			
Increase shareholder value	Operating-income changes from price recovery	\$80,000,000	\$85,000,000
	Operating-income changes from growth	\$60,000,000	\$62,000,000
Customer Perspective			
Increase market share	Market share of overall gasoline market	4%	3.8%
Internal-Business-Process Perspective			
Improve gasoline quality	Quality index	92 points	93 points
Improve refinery performance	Refinery-reliability index (%)	91%	91%
Ensure gasoline availability	Product-availability index (%)	99%	99.5%
Learning-and-Growth Perspective			
Increase refinery process capability	Percentage of refinery processes with advanced controls	94%	95%

1. Was Petrocal successful in implementing its strategy in 2017? Explain your answer.
2. Would you have included some measure of employee satisfaction and employee training in the learning-and-growth perspective? Are these objectives critical to Petrocal for implementing its strategy? Why or why not? Explain briefly.

Required

3. Explain how Petrocal did not achieve its target market share in the total gasoline market but still exceeded its financial targets. Is “market share of overall gasoline market” the correct measure of market share? Explain briefly.
4. Is there a cause-and-effect linkage between improvements in the measures in the internal-business-process perspective and the measure in the customer perspective? That is, would you add other measures to the internal-business-process perspective or the customer perspective? Why or why not? Explain briefly.
5. Do you agree with Petrocal’s decision not to include measures of changes in operating income from productivity improvements under the financial perspective of the balanced scorecard? Explain briefly.

4-39 Balanced scorecard. Vic Corporation manufactures various types of color laser printers in a highly automated facility with high fixed costs. The market for laser printers is competitive. The various color laser printers on the market are comparable in terms of features and price. Vic believes that satisfying customers with products of high quality at low costs is important to achieving its target profitability. For 2017, Vic plans to achieve higher quality and lower costs by improving yields and reducing defects in its manufacturing operations. Vic will train workers and encourage and empower them to take the necessary actions. Currently, a significant amount of Vic’s capacity is used to produce products that are defective and cannot be sold. Vic expects that higher yields will reduce the capacity that Vic needs to manufacture products. Vic does not anticipate that improving manufacturing will automatically lead to lower costs because many costs are fixed costs. To reduce fixed costs per unit, Vic could lay off employees and sell equipment, or it could use the capacity to produce and sell more of its current products or improved models of its current products.

Vic’s balanced scorecard (initiatives omitted) for the just-completed fiscal year 2017 follows.

Objectives	Measures	Target Performance	Actual Performance
Financial Perspective			
Increase shareholder value	Operating-income changes from productivity improvements	\$2,000,000	\$1,200,000
	Operating-income changes from growth	\$2,500,000	\$1,100,000
Customer Perspective			
Increase market share	Market share in color laser printers	4%	3.6%
Internal-Business-Process Perspective			
Improve manufacturing quality	Yield	88%	90%
Reduce delivery time to customers	Order-delivery time	23 days	20 days
Learning-and-Growth Perspective			
Develop process skills	Percentage of employees trained in process and quality management	92%	93%
Enhance information-system capabilities	Percentage of manufacturing processes with real-time feedback	90%	92%

Required

1. Was Vic successful in implementing its strategy in 2017? Explain.
2. Is Vic’s balanced scorecard useful in helping the company understand why it did not reach its target market share in 2017? If it is, explain why. If it is not, explain what other measures you might want to add under the customer perspective and why.
3. Would you have included some measure of employee satisfaction in the learning-and-growth perspective and new-product development in the internal-business-process perspective? That is, do you think employee satisfaction and development of new products are critical for Vic to implement its strategy? Why or why not? Explain briefly.
4. What problems, if any, do you see in Vic improving quality and significantly downsizing to eliminate unused capacity?

4-40 Balanced scorecard, environmental, and social performance. CocoMint Chocolates makes custom-labeled, high-quality, specialty candy bars for special events and advertising purposes. The company employs several chocolatiers who were trained in Germany. The company offers many varieties of chocolate, including milk, semi-sweet, white, and dark chocolate. It also offers a variety of ingredients, such as coffee, berries, and fresh mint. The real appeal for the company's product, however, is its custom labeling. Customers can order labels for special occasions (for example, wedding invitation labels) or business purposes (for example, business card labels). The company's balanced scorecard for 2017 follows. For brevity, the initiatives taken under each objective are omitted.

Objectives	Measures	Target Performance	Actual Performance
Financial Perspective			
Increase shareholder value	Operating-income changes from price recovery	\$500,000	\$750,000
	Operating-income changes from growth	\$100,000	\$125,000
	Cost savings due to reduced packaging size	\$20,000	\$25,000
Customer Perspective			
Increase market share	Market share of overall candy bar market	8%	7.8%
Increase the number of new product offerings	Number of new product offerings	5	7
Increase customer acquisitions due to sustainability efforts	Percentage of new customers surveyed who required recycled paper options	35%	40%
Internal-Business-Process Perspective			
Reduce time to customer	Average design time	3 days	3 days
Increase quality	Internal quality rating (10-point scale)	7 points	8 points
Increase use of recycled materials	Recycled materials used as a percentage of total materials used	30%	32%
Learning-and-Growth Perspective			
Increase number of professional chocolatiers	Number of chocolatiers	5	6
Increase number of women and minorities in the workforce	Percentage of women and minorities in the workforce	40%	38%

1. Was CocoMint successful in implementing its strategy in 2017? Explain your answer.
2. Would you have included some measure of customer satisfaction in the customer perspective? Are these objectives critical to CocoMint for implementing its strategy? Why or why not? Explain briefly.
3. Explain why CocoMint did not achieve its target market share in the candy bar market but still exceeded its financial targets. Is "market share of overall candy bar market" a good measure of market share for CocoMint? Explain briefly.
4. Do you agree with CocoMint's decision not to include measures of changes in operating income from productivity improvements under the financial perspective of the balanced scorecard? Explain briefly.
5. Why did CocoMint include balanced scorecard standards relating to environmental and social performance? Is the company meeting its performance objectives in these areas?

Required

4-41 Balanced scorecard, social performance. Highland State Company provides cable and Internet services in Barcelona. There are many competitors that provide similar services. Highland State believes that the key to financial success is to offer a quality service at the lowest cost. Highland State currently spends a

significant amount of hours on installation and post-installation support. This is one area that the company has targeted for cost reduction. Highland State's balanced scorecard for 2017 follows.

Objectives	Measures	Target Performance	Actual Performance
Financial Perspective			
Increase shareholder value	Operating-income changes from productivity	\$1,200,000	\$400,000
	Operating-income changes from growth	\$260,000	\$125,000
	Increase in revenue from new customer acquisition	\$25,000	\$12,000
Customer Perspective			
Increase customer satisfaction	Positive customer survey responses	70%	65%
Increase customer acquisition	New customers acquired through company sponsored community events	475	350
Internal-Business-Process Perspective			
Develop innovative services	Research and development costs as a percentage of revenue	5%	6%
Increase installation efficiency	Installation time per customer	5 hours	4.5 hours
Increase community involvement	Number of new programs with community organizations	12	15
Decrease workplace injuries	Number of employees injured in the workplace	<3	7
Learning-and-Growth Perspective			
Increase employee competence	Number of annual training-hours per employee	10	11
Increase leadership skills	Number of leadership workshops offered	2	1
Increase employee safety awareness	Percent of employees who have completed safety certification training	100%	95%

Required

1. Was Highland State successful in implementing its strategy in 2017? Explain.
2. Do you agree with Highland State's decision to include measures of developing innovative services (research and development costs) in the internal-business-process perspective of the balanced scorecard? Explain briefly.
3. Is there a cause-and-effect linkage between the measures in the internal-business-process perspective and the customer perspective? That is, would you add other measures to the internal-business-process perspective or the customer perspective? Why or why not? Explain briefly.
4. Why do you think Highland State included balanced scorecard measures relating to employee safety and community engagement? How well is the company doing on these measures?

4-42 Balanced scorecard, environmental, and social performance. SmoothAir is a no-frills airline that services the Midwest. Its mission is to be the only short-haul, low-fare, high-frequency, point-to-point carrier in the Midwest. However, there are several large commercial carriers offering air transportation, and SmoothAir knows that it cannot compete with them based on the services those carriers provide. SmoothAir has chosen to reduce costs by not offering many inflight services, such as food and entertainment options. Instead, the company is dedicated to providing the highest quality transportation at the lowest fare. SmoothAir's balanced scorecard measures (and actual results) for 2017 follow:

Objectives	Measures	Target Performance	Actual Performance
Financial Perspective			
Increase shareholder value	Operating-income changes from productivity	\$1,200,000	\$1,400,000
	Operating-income changes from price recovery	\$450,000	\$600,000
	Operating-income changes from growth	\$500,000	\$660,000
	Cost savings due to reduction in jet fuel consumption	\$150,000	\$180,000
Customer Perspective			
Increase the number of on-time arrivals	FAA on-time arrival ranking	1 st in industry	2 nd in industry
Improve brand image	Percentage of customer survey respondents with greater than 90% approval rating on company's sustainability efforts	100%	96%
Internal-Business-Process Perspective			
Reduce turnaround time	On-ground time	<25 minutes	30 minutes
Reduce CO ₂ emissions	Number of engineering changes that decreased CO ₂ emissions	10	9
Learning-and-Growth Perspective			
Align ground crews	% of ground crew stockholders	70%	68%
Acquire new energy management tool and technology	Achieve ISO 50001 certification in energy management	Acquire certification by Dec. 31	Acquired certification by Dec. 31

1. What is SmoothAir's strategy? Was SmoothAir successful in implementing its strategy in 2017? Explain your answer.
2. Based on the strategy identified in requirement 1 above, what role does the price-recovery component play in explaining the success of SmoothAir?
3. Would you have included customer-service measures in the customer perspective? Why or why not? Explain briefly.
4. Would you have included some measure of employee satisfaction and employee training in the learning-and-growth perspective? Would you consider this objective critical to SmoothAir for implementing its strategy? Why or why not? Explain briefly.
5. Why do you think Smooth Air has introduced environmental measures in its balanced scorecard? Is the company meeting its performance objectives in this area?

Required

4-43 Partial-productivity measurement. Gable Company manufactures wallets from fabric. In 2016, Gable made 2,160,000 wallets using 1,600,000 yards of fabric. In 2016, Gable has capacity to make 2,448,000 wallets and incurs a cost of \$8,568,000 for this capacity. In 2017, Gable plans to make 2,203,200 wallets, make fabric use more efficient, and reduce capacity.

Suppose that in 2017 Gable makes 2,203,200 wallets, uses 1,440,000 yards of fabric, and reduces capacity to 2,295,000 wallets at a cost of \$7,803,000.

1. Calculate the partial-productivity ratios for materials and conversion (capacity costs) for 2017, and compare them to a benchmark for 2016 calculated based on 2017 output.
2. How can Gable Company use the information from the partial-productivity calculations?

Required

4-44 Total factor productivity (continuation of 4-43). Refer to the data for Problem 4-43. Assume the fabric costs \$4.00 per yard in 2017 and \$4.10 per yard in 2016.

1. Compute Gable Company's total factor productivity (TFP) for 2017.
2. Compare TFP for 2017 with a benchmark TFP for 2016 inputs based on 2017 prices and output.
3. What additional information does TFP provide that partial-productivity measures do not?

Required