

5.10: Evaluate and Determine Whether to Keep or Discontinue a Segment or Product

Companies tend to divide their organization along product lines, geographic locations, or other management needs for decision-making and reporting. A **segment** is a portion of the business that management believes has sufficient similarities in product lines, geographic locations, or customers to warrant reporting that portion of the company as a distinct part of the entire company. For example, General Electric, Inc., has eight segments and the Walt Disney Company has four segments. Table 5.10.1 shows these segments.

Table 5.10.1: Examples of Company Segments¹

General Electric Segments	Disney Segments
<ul style="list-style-type: none"> • Additive • Aviation • Capital • Digital • Healthcare • Lighting • Power • Renewable Energy • Transportation 	<ul style="list-style-type: none"> • Media Networks • Parks, Experiences, and Consumer Products • Studio Entertainment • Direct to Consumer and International

As part of the normal operations of a business, managers make decisions such as whether to keep producing a product, whether to continue operating in certain areas, or whether to close entire segments of their operations. These are historically some of the most difficult decisions that managers make. Examples of these types of decisions include Macy's decision to close 100 stores in 2016 due to increased competition from online retailers such as Amazon.com² and Delta Airline's decision to eliminate 16 routes to save costs.³ What information does management use in making these types of decisions?

As with other decisions, management must consider both the quantitative and qualitative aspects. In choosing between alternatives—that is, in choosing between keeping and eliminating the product, segment, or service—the relevant revenues and costs should be analyzed. Remember that relevant revenues and costs are those that differ between alternatives. Often, the keep-versus-eliminate decision arises because the product or segment appears to be generating less of a profit than in prior periods or is unprofitable. In these situations, the product or segment may produce a positive contribution margin but may appear to have a lower or negative profit because of the allocation of common fixed costs.

Fundamentals of the Decision to Keep or Discontinue a Segment or Product

Two basic approaches can be used to analyze data in this type of decision. One approach is to compare contribution margins and fixed costs. In this method, the contribution margins with and without the segment (or division or product line) are determined. The two contribution margins are compared and the alternative with the greatest contribution margin would be the chosen alternative because it provides the biggest contribution toward meeting fixed costs.

The second approach involves calculating the total net income for retaining the segment and comparing it to the total net income for dropping the segment. The company would then proceed with the alternative that has the highest net income. In order to perform these net income calculations, the company would need more information than they would need in order to follow the contribution margin approach, which does not consider the costs and revenues that are the same between the alternatives.

Think it Through: Allocating Common Fixed Costs

Acme, Co., has three retail divisions: Small, Medium, and Large. Sales, variable costs, and fixed costs for each of the divisions are:

	Sales	Variable Costs	Fixed Costs
Small	\$ 5,000,000	\$ 2,875,000	\$2,450,000
Medium	10,000,000	7,235,000	5,125,000
Large	25,000,000	18,960,000	8,230,000

Figure 5.10.1: Various costs associated with the three divisions

Included in the fixed costs are \$5,400,000 in allocated common costs, which are split evenly among the three divisions. Is an even split the best way to allocate those costs? Why or why not? What other ways might Acme consider using to allocate the common fixed costs?

Sample Data

Suppose SnowBucks, Inc., has three product lines: snow boots, snow sporting equipment, and a clothing line for winter sports. It has been brought to senior management's attention that the snow boot product line is unprofitable. Figure 5.10.2 shows the data presented to senior management:

	Snow Boots	Snow Sporting Equipment	Clothing Line	Total
Sales	\$1,150,000	\$1,540,000	\$1,354,000	\$4,044,000
Cost of goods sold				
Variable manufacturing expenses	423,000	507,000	378,000	1,308,000
Fixed manufacturing expenses	392,000	413,000	353,000	1,158,000
Gross margin	335,000	620,000	623,000	1,578,000
Selling and administrative expenses				
Variable selling and administrative expenses	195,000	130,000	147,000	472,000
Fixed selling and administrative expenses	216,000	216,000	216,000	648,000
Operating income	\$ (76,000)	\$ 274,000	\$ 260,000	\$ 458,000

Figure 5.10.2: Operating Income Report for SnowBucks, by Segment. (attribution: Copyright Rice University, OpenStax, under CC BY-NC-SA 4.0 license)

Upon initial review, it appears that the snow boot product line is unprofitable. Should this product line be eliminated? To adequately analyze this situation, a proper analysis of the relevant revenues and costs must be made. The functional income statement in Figure 5.10.2 does not separate relevant from non-relevant costs.

In conducting the analysis, the accounting team discovers that each product line is allocated certain costs over which the product line managers have no control. These **allocated costs** are typically associated with areas of the company that do not generate revenue but are necessary for the running of the organization, such as salaries for executives, human resources, and accounting at headquarters.

The cost of these parts of the organization must somehow be shared with the revenue-generating portions of the business. Companies often allocate these costs to other parts of the organization based on some formula, such as dividing the total costs by the number of divisions or segments, as a percentage of total revenue, or as a percentage of total square footage.

SnowBucks currently allocates these costs equally to the three product lines, and all the fixed selling and administrative expenses are considered allocated costs. In addition, the fixed manufacturing expenses represent factory rent, depreciation, and insurance, and all these costs will continue to exist regardless of whether the snow boot division continues. However, included in the fixed manufacturing expenses is the \$75,000 salary of a sales supervisor for each division. This is an avoidable fixed cost as this cost would no longer exist if any division ceased operating.

Calculations Using Sample Data

Based on the new information, a new analysis using a product line margin indicates the following:

	Snow Boots	Snow Sporting Equipment	Clothing Line	Total
Sales	\$1,150,000	\$1,540,000	\$1,354,000	\$4,044,000
Variable expenses				
Variable manufacturing expenses	423,000	507,000	378,000	1,308,000
Variable selling and administrative expenses	195,000	130,000	147,000	472,000
Contribution margin	532,000	903,000	829,000	2,264,000
Direct fixed manufacturing expenses	75,000	75,000	75,000	225,000
Product margin	457,000	828,000	754,000	2,039,000
Allocated fixed expenses				
Fixed selling and administrative expenses				648,000
Fixed manufacturing expenses				933,000
Operating income				\$ 458,000

Figure 5.10.3: A new analysis using a product line margin

Final Analysis of the Decision

This new analysis shows that when the relevant costs and revenues are considered, it is apparent the snow boot product line is contributing toward meeting the fixed costs of the organization and therefore to overall corporate profitability. The reason the snow boot product line was showing an operating loss was due to the allocation of common costs. Consideration should be given to the way allocated costs are assigned to the various products to determine if the allocation is logical or if another allocation method, such as one based on each product line's percentage of the total corporate sales, would provide a better matching of costs and services provided by corporate headquarters. Management should also consider qualitative factors, such as the impact of removing one product line on the overall sales of the other products. If customers commonly buy snow boots and skis together, then discontinuing the snow boot line could impact the sales of snow skis.

✓ Example 5.10.1: Disney's Segments

View [Walt Disney Company's 2018 full year earnings report](#) on their website. Scroll to the section on Segment Results and answer these questions:

- How many segments does Disney have?
- Which segment had the highest revenue in 2018?
- Which segment had the highest operating income in 2018?
- Which segment has shown the most revenue growth between 2017 and 2018?
- How many segments showed growth in operating income between 2017 and 2018 and how many segments showed a decline in operating income between 2017 and 2018?
- Which segment has shown the least operating income growth between 2017 and 2018?

Solution

- Four: Media Networks, Parks & Resorts, Studio Entertainment, and Consumer Products & Interactive Media
- Media Networks
- Media Networks
- Studio Entertainment
- Two segments (Parks & Resorts and Studio Entertainment) showed operating income growth, while two segments (Media Networks and Consumer Products & Interactive Media) showed a decline in operating income between 2017 and 2018.
- Consumer Products & Interactive Media

Footnotes

1. GE Businesses. n.d. <https://www.ge.com/>; Disney. “Our Businesses.” n.d. <https://www.thewaltdisneycompany.com...our-businesses>
2. Hayley Peterson. “Macy’s May Shut Down Even More Stores.” *Business Insider*. May 12, 2017. <http://www.businessinsider.com/macys...-stores-2017-5>
3. Jason Williams. “Delta Downsizing Flights to 14 More Cities.” Cincinnati.com. Mar. 11, 2015. <http://www.cincinnati.com/story/news...ucky/24701445/>

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