



Chapter 12

Segment Reporting and Decentralization

Decentralization in Organizations

Benefits of Decentralization

Lower-level managers
gain experience in
decision-making.

Lower-level decision
often based on
better information.

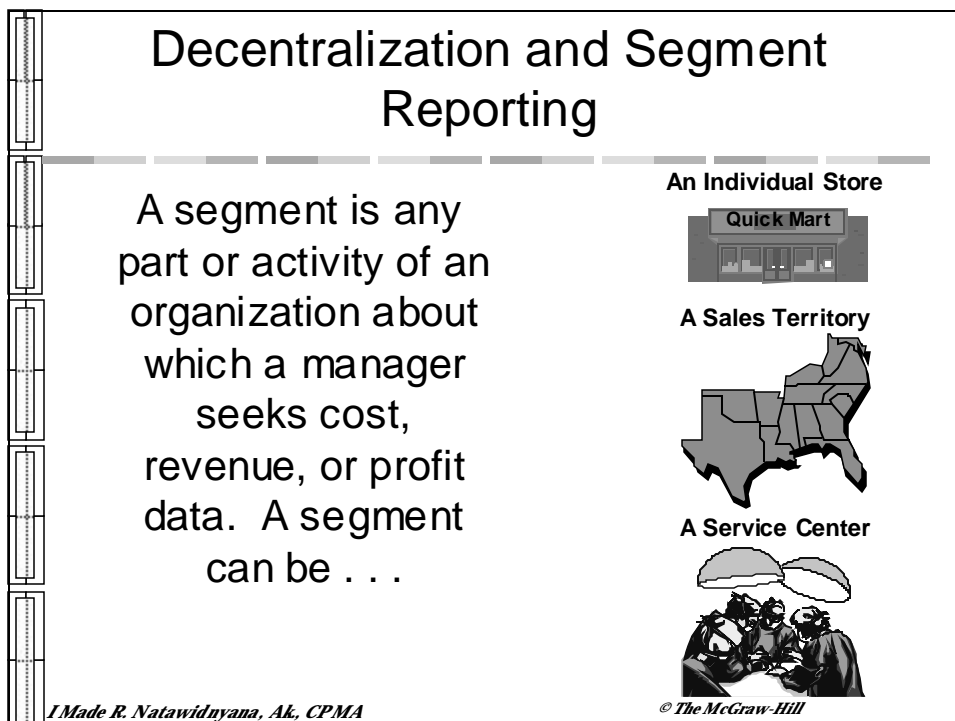
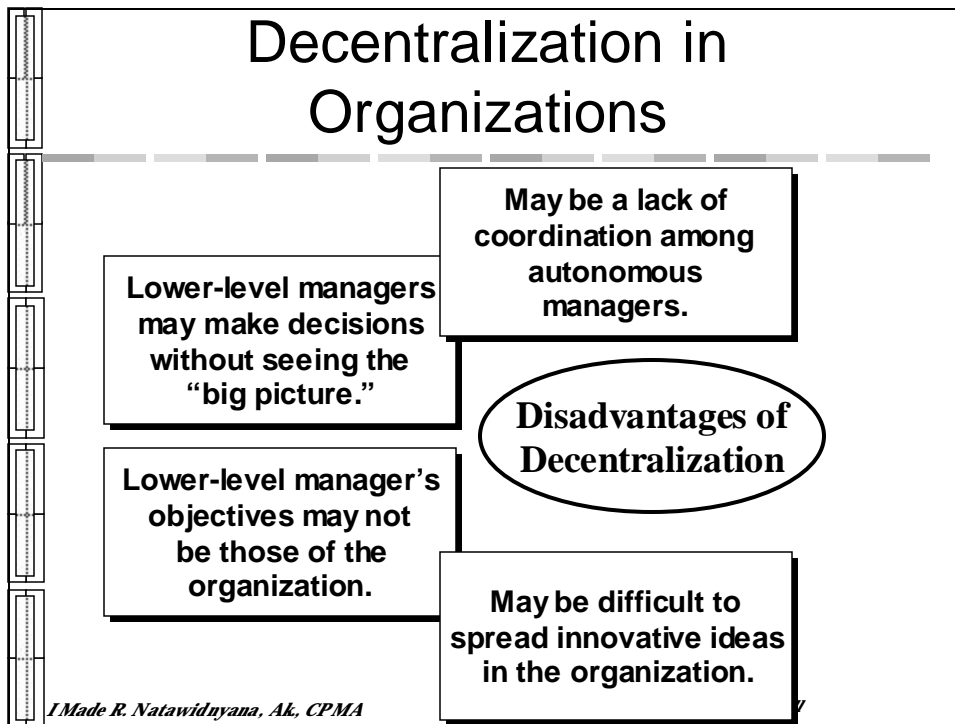
Top management
freed to concentrate
on strategy.

Decision-making
authority leads to
job satisfaction.

Improves ability to
evaluate managers.

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Cost, Profit, and Investments Centers

Cost Center

A segment whose manager has control over costs, but not over revenues or investment funds.



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Cost, Profit, and Investments Centers

Profit Center

A segment whose manager has control over **both** costs and revenues, but no control over investment funds.

•	•
• Revenues	•
• Sales	•
• Interest	•
• Other	•
•	•
• Costs	•
• Mfg. costs	•
• Commissions	•
• Salaries	•
• Other	•

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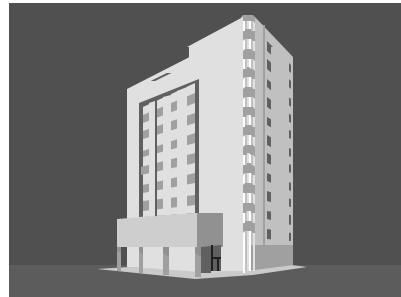
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Cost, Profit, and Investments Centers

Investment Center

A segment whose manager has control over costs, revenues, and investments in operating assets.

Corporate Headquarters



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Cost, Profit, and Investments Centers

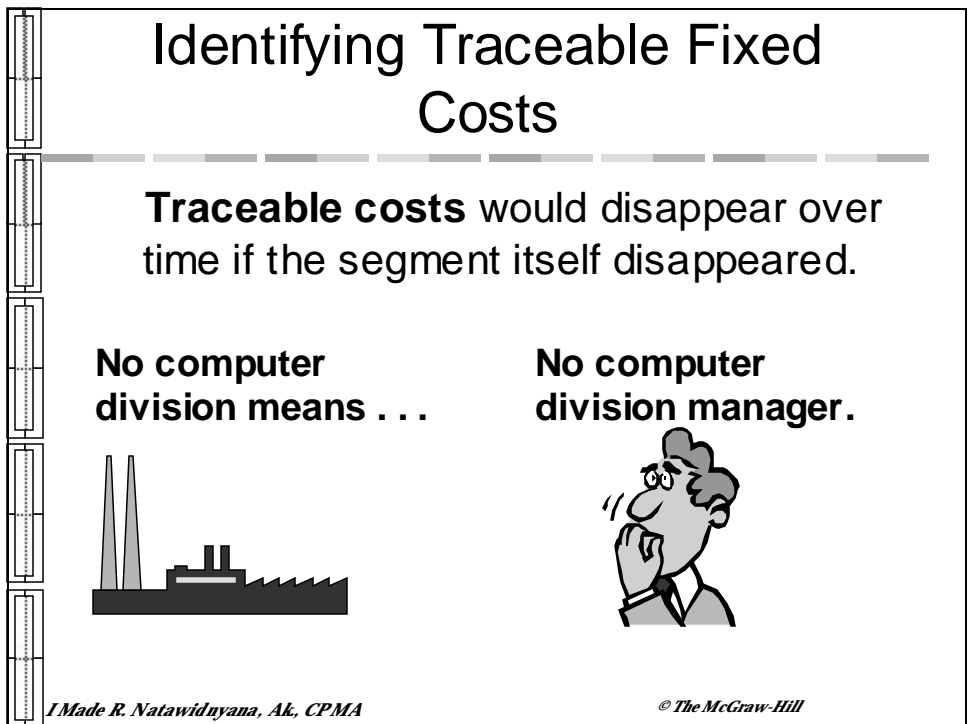
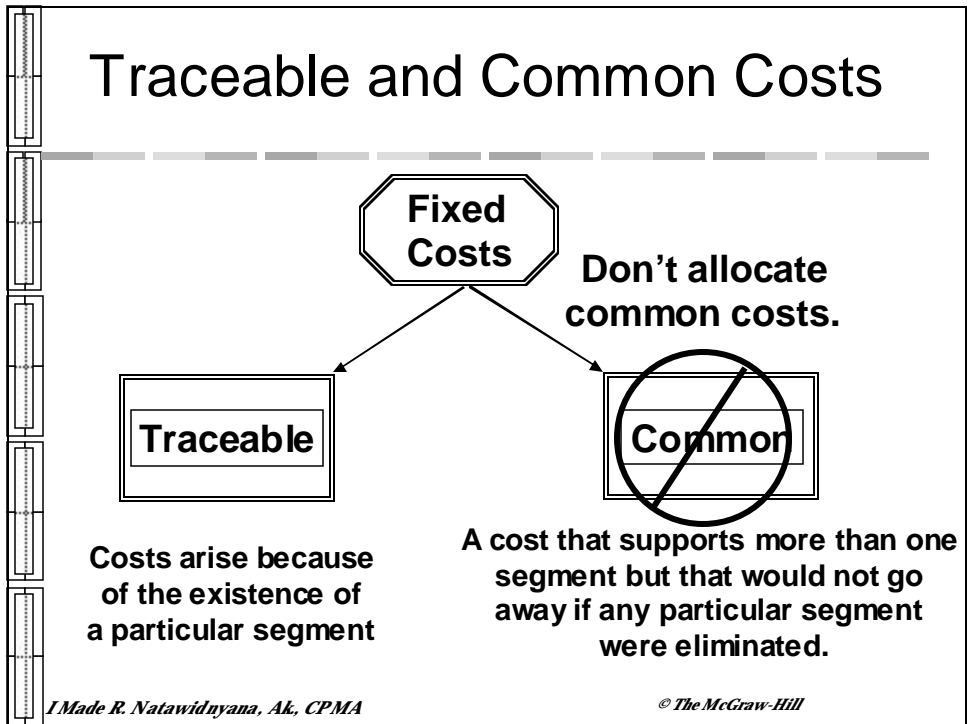


Cost, profit, and investment centers are all known as responsibility centers.

Responsibility Center

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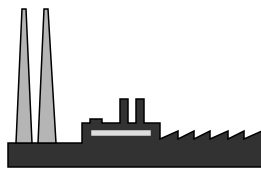
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Identifying Common Fixed Costs

Common costs arise because of overall operation of the company and are not due to the existence of a particular segment.

No computer division but . . .



We still have a company president.

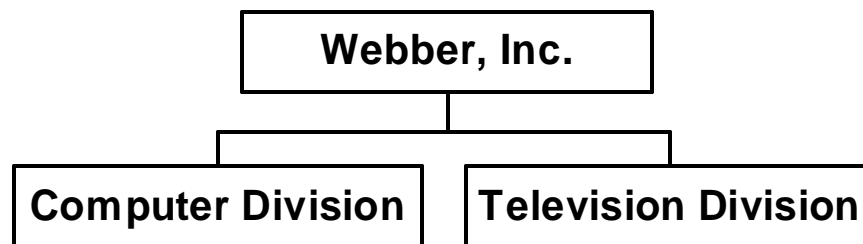


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Levels of Segmented Statements

Webber, Inc. has two divisions.



Let's look more closely at the Television Division's income statement.



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Levels of Segmented Statements

Our approach to segment reporting uses the contribution format.

Income Statement Contribution Margin Format Television Division	
Sales	\$ 300,000
Variable COGS	120,000
Other variable costs	30,000
Total variable costs	150,000
Contribution margin	150,000
Traceable fixed costs	90,000
Division margin	\$ 60,000

Cost of goods sold consists of variable manufacturing costs.

Fixed and variable costs are listed in separate sections.

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Levels of Segmented Statements

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Division margin	\$ 60,000

Segment margin is Television's contribution to profits.


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Levels of Segmented Statements



Let's see how the Television Division fits into Webber, Inc.



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Levels of Segmented Statements

Income Statement			
	<u>Company</u>	<u>Television</u>	<u>Computer</u>
Sales	\$ 500,000	\$ 300,000	\$ 200,000
Variable costs	230,000	150,000	80,000
CM	270,000	150,000	120,000
Traceable FC	170,000	90,000	80,000
Division margin	100,000	<u>\$ 60,000</u>	<u>\$ 40,000</u>
Common costs	_____		
Net operating income	<u>_____</u>		

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Levels of Segmented Statements

Income Statement			
	Company	Television	Computer
Sales	\$ 500,000	\$ 300,000	\$ 200,000
Variable costs	230,000	150,000	80,000
CM	270,000	150,000	120,000
Traceable FC	170,000	90,000	80,000
Division margin	100,000	\$ 60,000	\$ 40,000
Common costs	25,000		
Net operating income	\$ 75,000		

Common costs should not be allocated to the divisions. These costs would remain even if one of the divisions were eliminated.

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Traceable Costs Can Become Common Costs

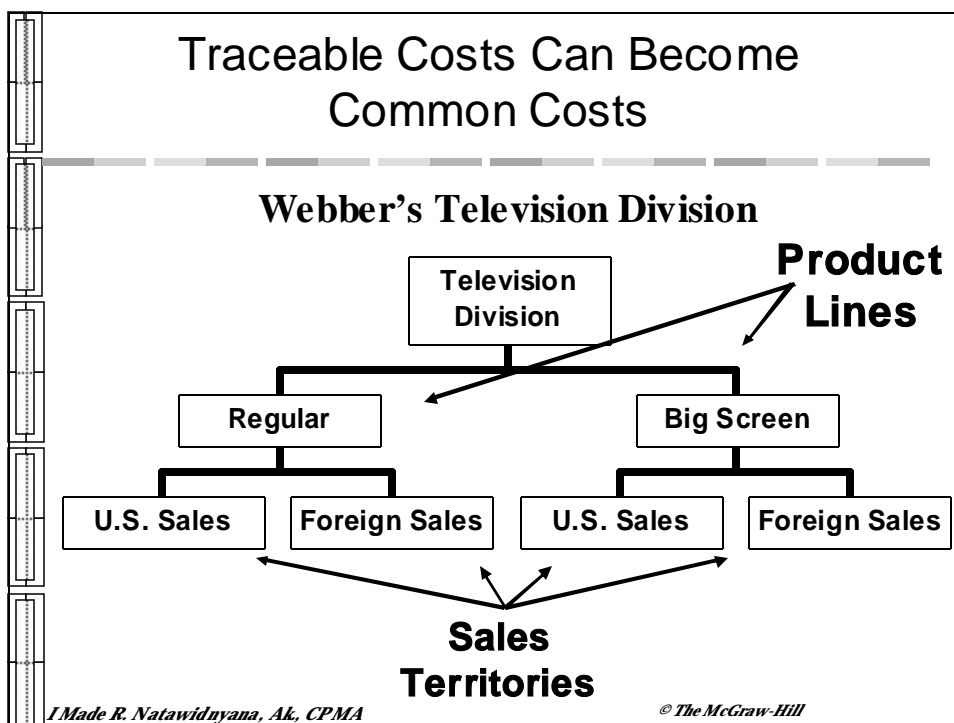
Fixed costs that are traceable on one segmented statement can become common if the company is divided into smaller segments.

Let's see how this works!



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**Traceable Costs Can Become
Common Costs**

Income Statement			
	Television Division	Regular	Big Screen
Sales		\$ 200,000	\$ 100,000
Variable costs		95,000	55,000
CM		105,000	45,000
Traceable FC		45,000	35,000
Product line margin		<u>\$ 60,000</u>	<u>\$ 10,000</u>
Common costs			
Divisional margin			

**We obtained the following information from
the Regular and Big Screen segments.**

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Traceable Costs Can Become Common Costs

Income Statement			
	Television		
	Division	Regular	Big Screen
Sales	\$ 300,000	\$ 200,000	\$ 100,000
Variable costs	150,000	95,000	55,000
CM	150,000	105,000	45,000
Traceable FC	80,000	45,000	35,000
Product line margin	70,000	\$ 60,000	\$ 10,000
Common costs	10,000		
Divisional margin	\$ 60,000		

Fixed costs directly traced to the Television Division
\$80,000 + \$10,000 = \$90,000

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Traceable Costs Can Become Common Costs

Income Statement			
	Television		
	Division	Regular	Big Screen
Sales	\$ 300,000	\$ 200,000	\$ 100,000
Variable costs	150,000	95,000	55,000
CM	150,000	105,000	45,000
Traceable FC	80,000	45,000	35,000
Product line margin	70,000	\$ 60,000	\$ 10,000
Common costs	10,000		
Divisional margin	\$ 60,000		

Of the \$90,000 cost directly traced to the Television Division, \$45,000 is traceable to Regular and \$35,000 traceable to Big Screen product lines.

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Traceable Costs Can Become Common Costs

Income Statement			
	Television Division		
	Division	Regular	Big Screen
Sales	\$ 300,000	\$ 200,000	\$ 100,000
Variable costs	150,000	95,000	55,000
CM	150,000	105,000	45,000
Traceable FC	80,000	45,000	35,000
Product line margin	70,000	\$ 60,000	\$ 10,000
Common costs	10,000		
Divisional margin	\$ 60,000		

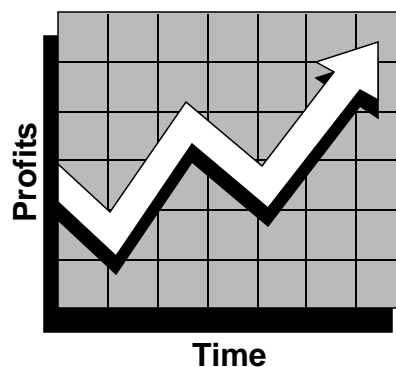
The remaining \$10,000 cannot be traced to either the Regular or Big Screen product lines.

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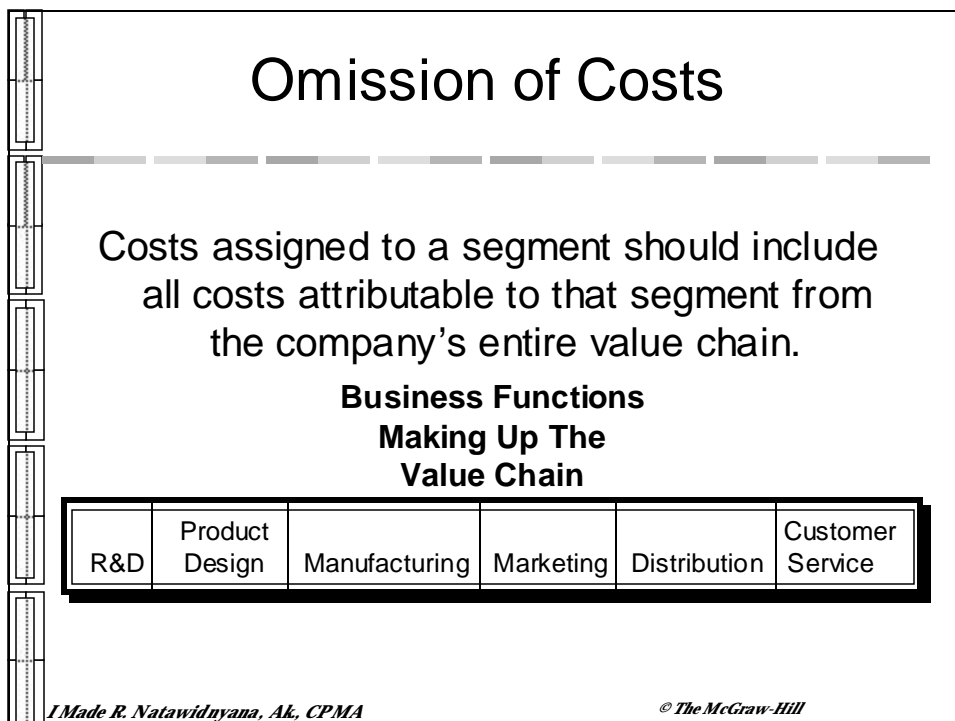
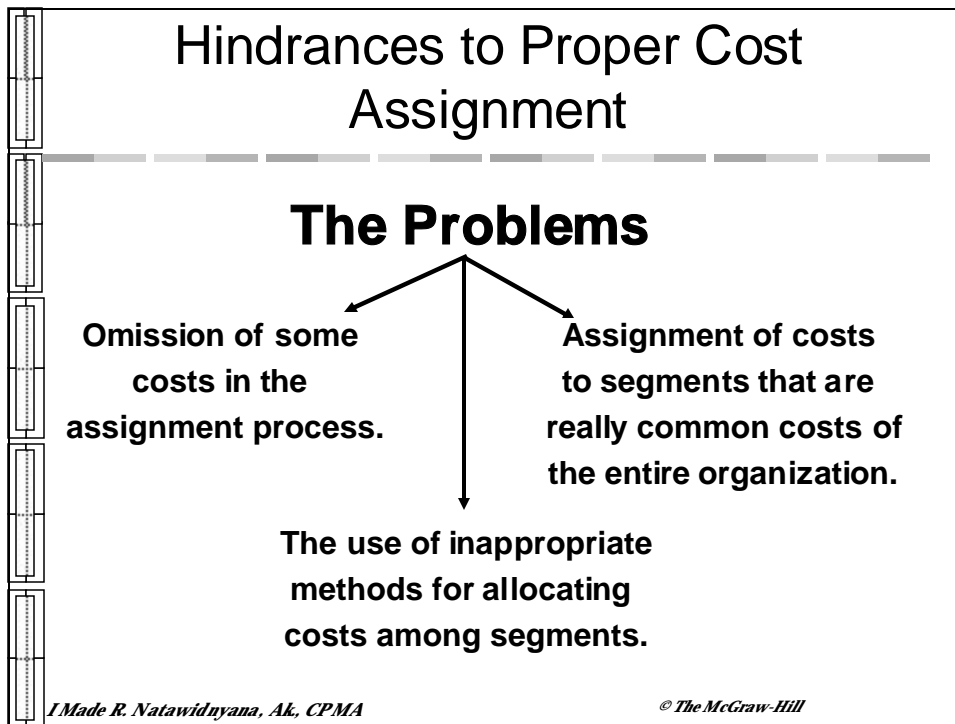
Segment Margin

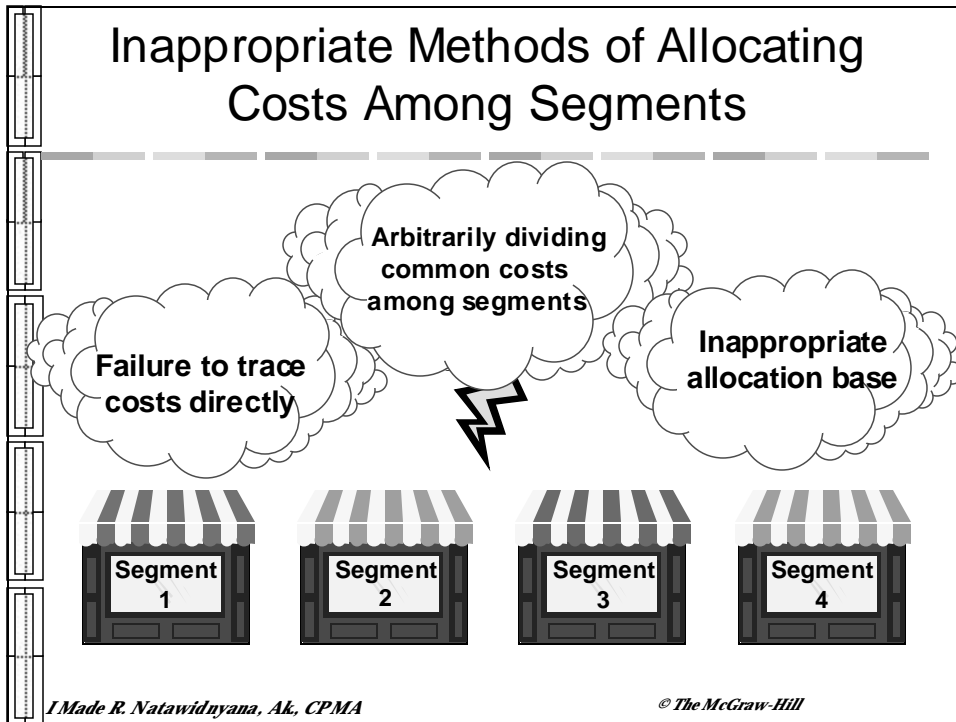
The segment margin is the best gauge of the long-run profitability of a segment.



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Allocations of Common Costs

Income Statement			
	Haglund's Lakeshore	Bar	Restaurant
Sales	\$ 800,000	\$ 100,000	\$ 700,000
Variable costs	310,000	60,000	250,000
CM	490,000	40,000	450,000
Traceable FC	246,000	26,000	220,000
Segment margin	244,000	<u>\$ 14,000</u>	<u>\$ 230,000</u>
Common costs	200,000		
Profit	<u>\$ 44,000</u>		

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Allocations of Common Costs

Income Statement			
	Haglund's Lakeshore	Bar	Restaurant
Sales	\$ 800,000	\$ 100,000	\$ 700,000
Variable costs	310,000	60,000	250,000
CM	490,000	40,000	450,000
Traceable FC	246,000	26,000	220,000
Segment margin	244,000	14,000	230,000
Common costs	200,000	25,000	175,000
Profit	\$ 44,000	\$ (11,000)	\$ 55,000

Allocated on the basis of sales.

Hurray, now everything adds up!!!

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Allocations of Common Costs

Income Statement			
	Haglund's Lakeshore	Bar	Restaurant
Sales	\$ 800,000	\$ 100,000	\$ 700,000
Variable costs	310,000	60,000	250,000
CM	490,000	40,000	450,000
Traceable FC	246,000	26,000	220,000
Segment margin	244,000	14,000	230,000
Common costs	200,000	25,000	175,000
Profit	\$ 44,000	\$ (11,000)	\$ 55,000

Whoops, what about the bar???

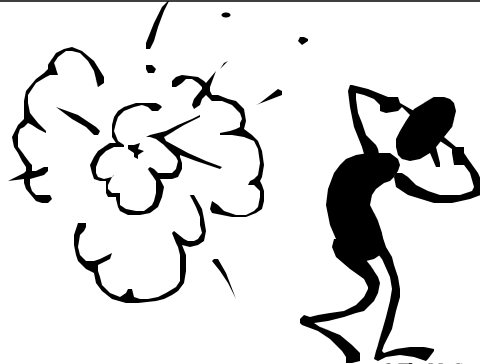
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Teaching Note



Allocating common fixed costs to the segments those fixed costs support is a recipe for disaster



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Return on Investment (ROI) Formula

**Income before interest
and taxes (EBIT)**

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Average operating assets}}$$

**Cash, accounts receivable, inventory,
plant and equipment, and other
productive assets.**



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Return on Investment (ROI) Formula	
Regal Company reports the following:	
Net operating income	\$ 30,000
Average operating assets	\$ 200,000
Sales	\$ 500,000
$\text{ROI} = \frac{\$30,000}{\$200,000} = 15\%$	
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Return on Investment (ROI) Formula	
$\text{ROI} = \frac{\text{Net operating income}}{\text{Average operating assets}}$	
$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$	
$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$	
$\text{ROI} = \text{Margin} \times \text{Turnover}$	

Return on Investment (ROI) Formula

ROI = Margin × Turnover

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \frac{\$30,000}{\$500,000} \times \frac{\$500,000}{\$200,000}$$

$$\text{ROI} = 6\% \times 2.5 = 15\%$$

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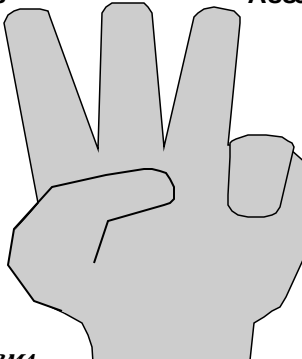
Controlling the Rate of Return

Three ways to improve ROI . . .

- Reduce Expenses

⊞ Increase
Sales

⊚ Reduce
Assets



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Controlling the Rate of Return

- Regal's manager was able to increase sales to \$600,000 which increased net operating income to \$42,000.
- There was no change in the average operating assets of the segment.

Let's calculate the new ROI.

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Return on Investment (ROI) Formula

ROI = Margin × Turnover

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \frac{\$42,000}{\$600,000} \times \frac{\$600,000}{\$200,000}$$

$$\text{ROI} = 7\% \times 3.0 = 21\%$$

ROI increased from 15% to 21%

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Criticisms of ROI

- ▼ In the absence of the balanced scorecard, management may not know how to increase ROI.
- ▼ Managers often inherit many committed costs over which they have no control.
- ▼ Managers evaluated on ROI may reject profitable investment opportunities.



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Criticisms of ROI

- As division manager at Winston, Inc., your compensation package includes a salary plus bonus based on your division's ROI -- the higher your ROI, the bigger your bonus.
- The company requires an ROI of 15% on all new investments -- your division has been producing an ROI of 30%.
- You have an opportunity to invest in a new project that will produce an ROI of 25%.

As division manager would you invest in this project?

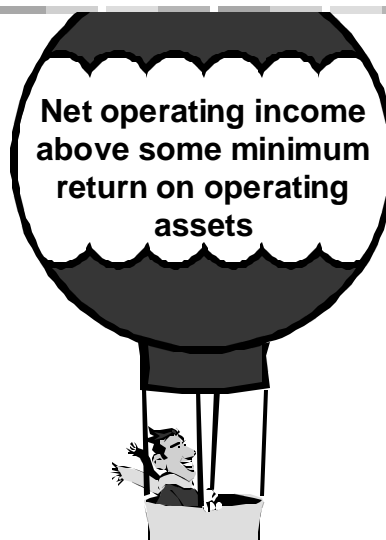
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Criticisms of ROI



Residual Income - Another Measure of Performance



Residual Income

- A division of Zepher, Inc. has average operating assets of \$100,000 and is required to earn a return of 20% on these assets.
- In the current period the division earns \$30,000.

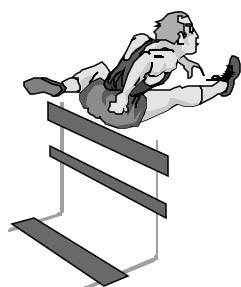
Let's calculate residual income.

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Residual Income

Operating assets	\$ 100,000
Required rate of return	× 20%
Required income	<u>\$ 20,000</u>



Actual income	\$ 30,000
Required income	<u>(20,000)</u>
Residual income	<u>\$ 10,000</u>

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Motivation and Residual Income

Residual income encourages managers to make profitable investments that would be rejected by managers using ROI.



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End of Chapter 12



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