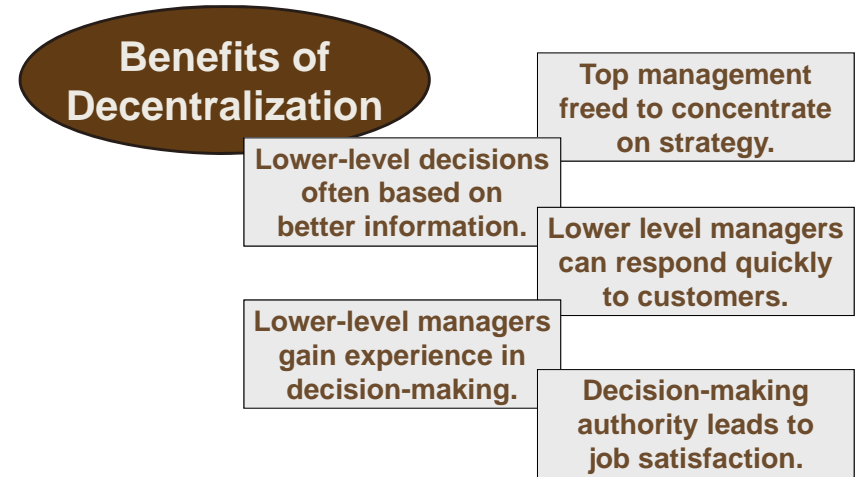


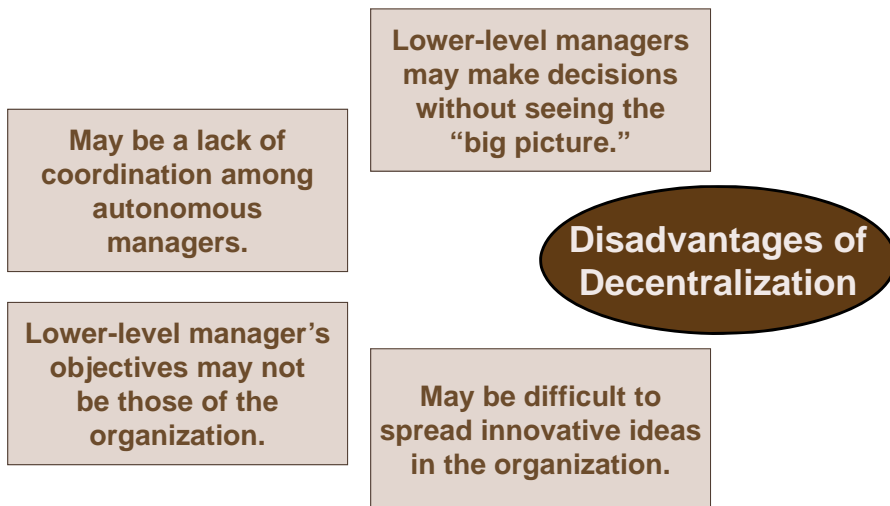
Performance Measurement in Decentralized Organizations

Chapter 11

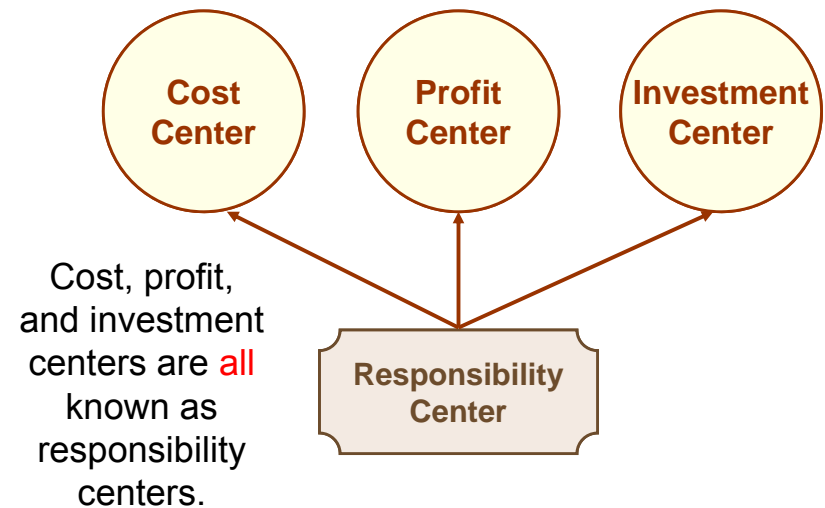
Decentralization in Organizations



Decentralization in Organizations



Cost, Profit, and Investments Centers



Cost Center

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



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	•

Investment Center

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

Corporate Headquarters



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.



Net Book Value versus Gross Cost

Most companies use the net book value of depreciable assets to calculate average operating assets.

Acquisition cost
Less: Accumulated depreciation
Net book value



Understanding ROI

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

$$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$$

$$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

Increasing ROI - An Example

Regal Company reports the following:

Net operating income	\$ 30,000
Average operating assets	\$ 200,000
Sales	\$ 500,000
Operating expenses	\$ 470,000

What is Regal Company's ROI?

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

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

Increasing ROI - An Example

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

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

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

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

Investing in Operating Assets to Increase Sales

Assume that Regal's manager invests in a \$30,000 piece of equipment that increases sales by \$35,000, while increasing operating expenses by \$15,000.

Regal Company reports the following:

Net operating income	\$ 50,000
Average operating assets	\$ 230,000
Sales	\$ 535,000
Operating expenses	\$ 485,000

Let's calculate the new ROI.

Investing in Operating Assets to Increase Sales

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

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

$$\text{ROI} = \frac{\$50,000}{\$535,000} \times \frac{\$535,000}{\$230,000}$$

$$\text{ROI} = 9.35\% \times 2.33 = 21.8\%$$

ROI increased from 15% to 21.8%.

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.



Residual Income - Another Measure of Performance



Calculating Residual Income

$$\text{Residual income} = \text{Net operating income} - \left(\text{Average operating assets} \times \text{Minimum required rate of return} \right)$$

This computation differs from ROI.

ROI measures net operating income earned relative to the investment in average operating assets.

Residual income measures net operating income earned less the minimum required return on average operating assets.

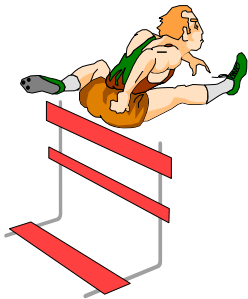
Residual Income - An Example

- The Retail Division of Zephyr, 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.

Residual Income - An Example

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



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

Motivation and Residual Income

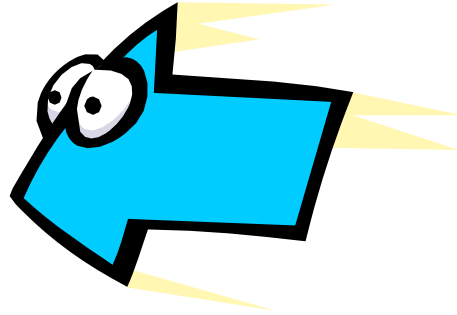
Residual income encourages managers to make profitable investments that would be rejected by managers using ROI.



Divisional Comparisons and Residual Income

The residual income approach has one major disadvantage.

It cannot be used to compare the performance of divisions of different sizes.



Zephyr, Inc. - Continued

Recall the following information for the Retail Division of Zephyr, Inc.

Assume the following information for the Wholesale Division of Zephyr, Inc.

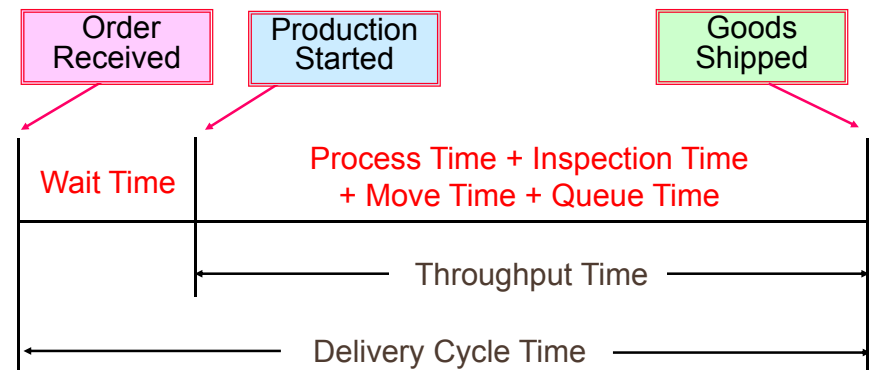
	Retail	Wholesale
Operating assets	\$ 100,000	\$ 1,000,000
Required rate of return ×	20%	20%
Minimum required return	\$ 20,000	\$ 200,000
Actual income	\$ 30,000	\$ 220,000
Minimum required return	(20,000)	(200,000)
Residual income	\$ 10,000	\$ 20,000

Zephyr, Inc. - Continued

The residual income numbers suggest that the Wholesale Division outperformed the Retail Division because its residual income is \$10,000 higher. However, the Retail Division earned an ROI of 30% compared to an ROI of 22% for the Wholesale Division. The Wholesale Division's residual income is larger than the Retail Division **simply because it is a bigger division.**

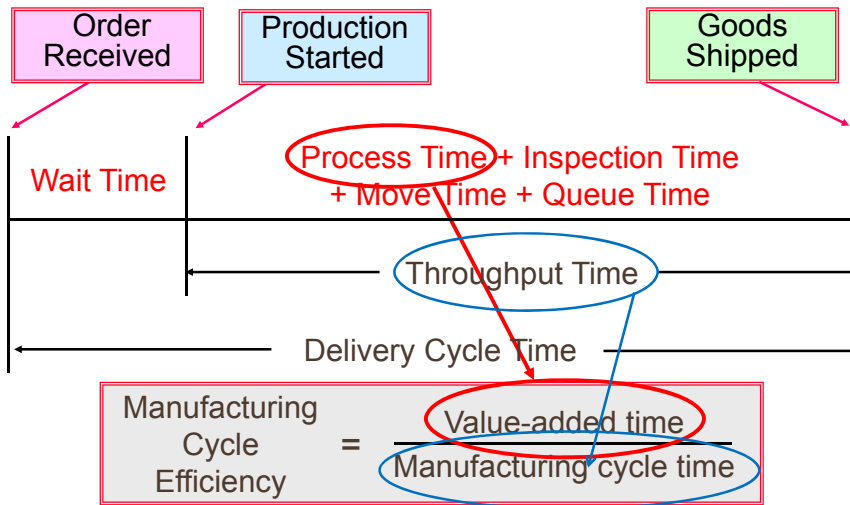
	Retail	Wholesale
Operating assets	\$ 100,000	\$ 1,000,000
Required rate of return ×	20%	20%
Minimum required return	\$ 20,000	\$ 200,000
Actual income	\$ 30,000	\$ 220,000
Minimum required return	(20,000)	(200,000)
Residual income	\$ 10,000	\$ 20,000

Delivery Performance Measures

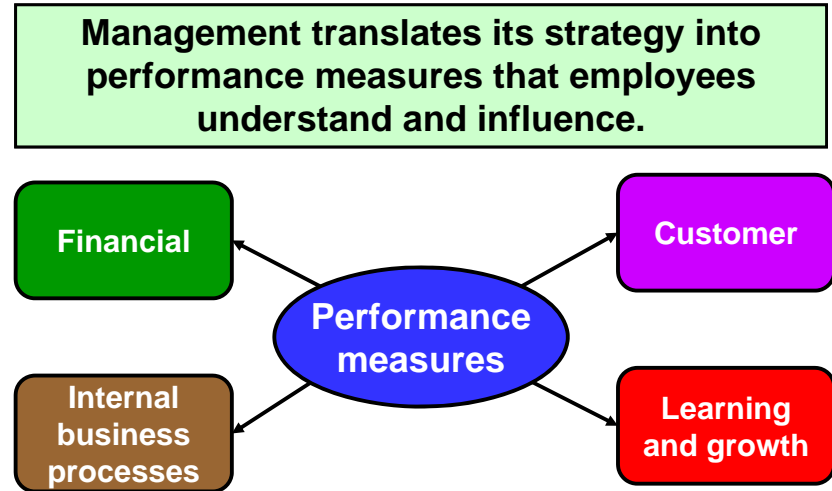


Process time is the only value-added time.

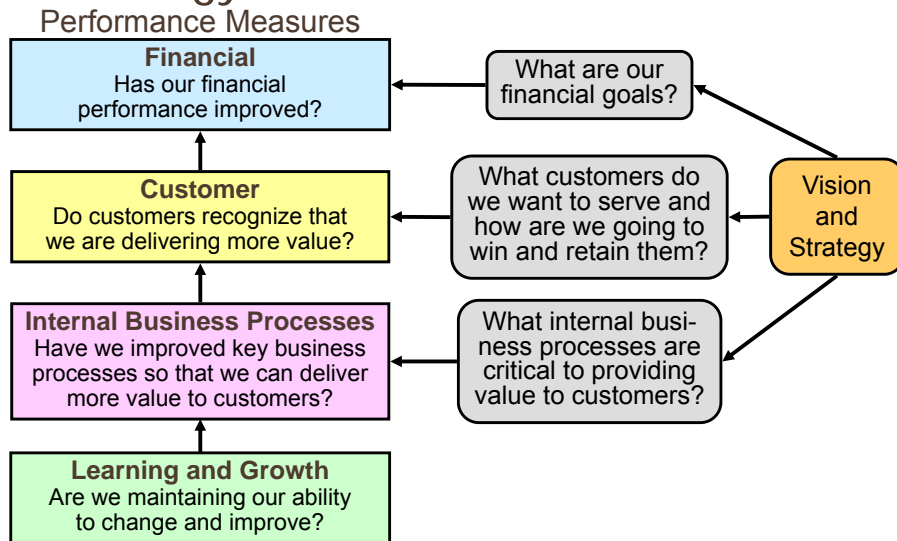
Delivery Performance Measures



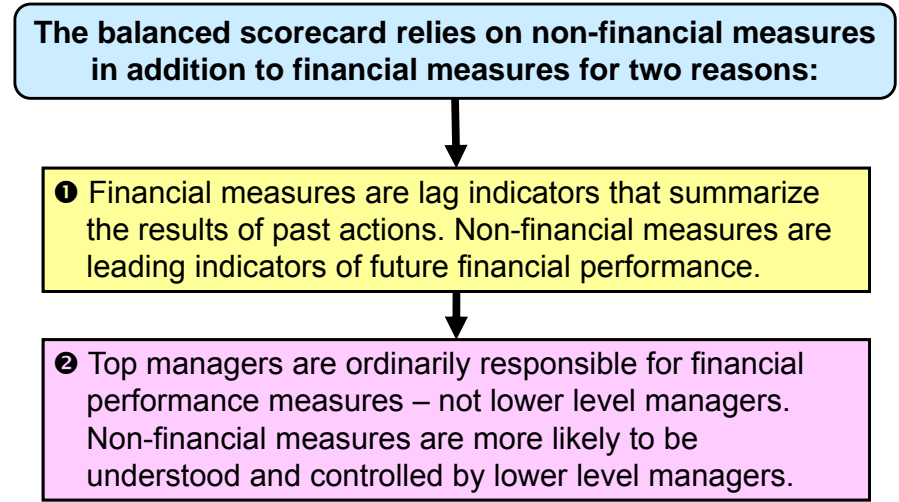
The Balanced Scorecard



The Balanced Scorecard: From Strategy to Performance Measures



The Balanced Scorecard: Non-financial Measures



The Balanced Scorecard for Individuals

The entire organization should have an overall balanced scorecard.

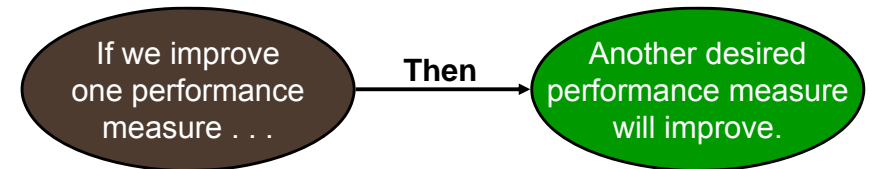
Each individual should have a personal balanced scorecard.



A personal scorecard should contain measures that can be influenced by the individual being evaluated and that support the measures in the overall balanced scorecard.

The Balanced Scorecard

A balanced scorecard should have measures that are linked together on a cause-and-effect basis.



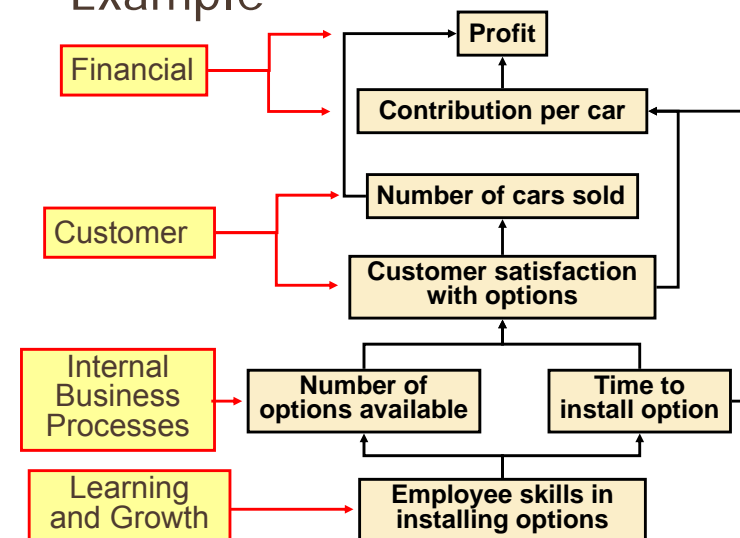
The balanced scorecard lays out concrete actions to attain desired outcomes.

The Balanced Scorecard and Compensation

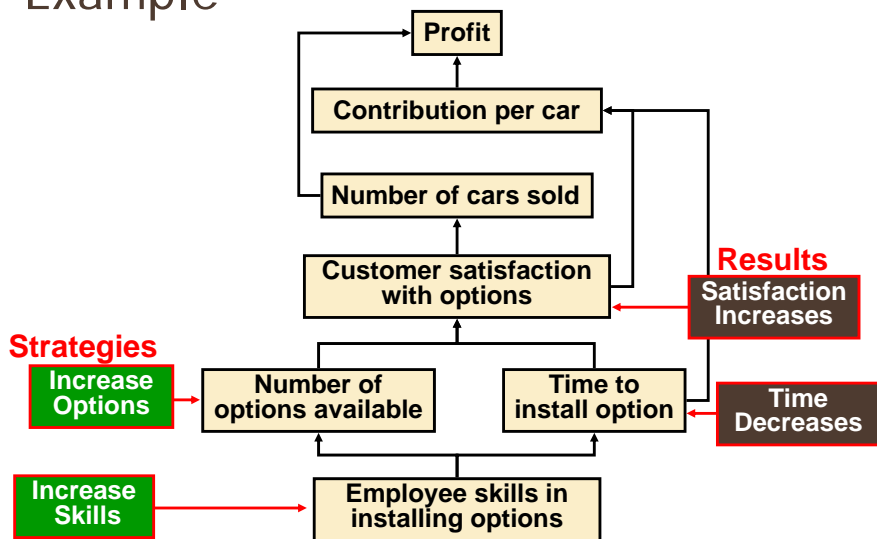
Incentive compensation should be linked to balanced scorecard performance measures.



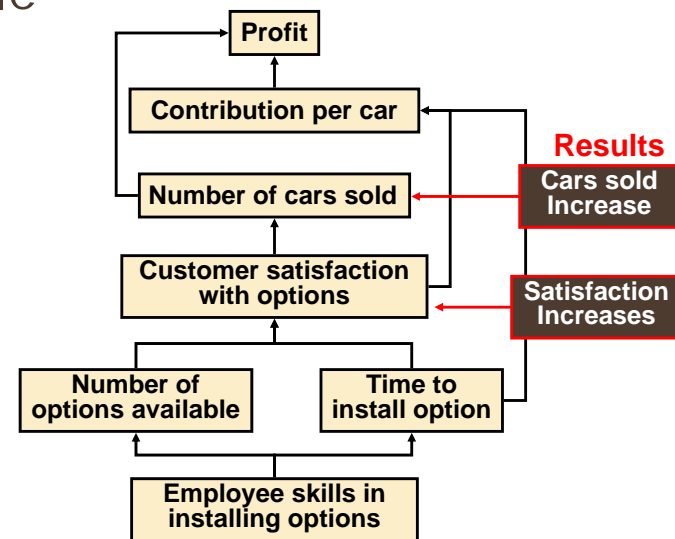
The Balanced Scorecard – Jaguar Example



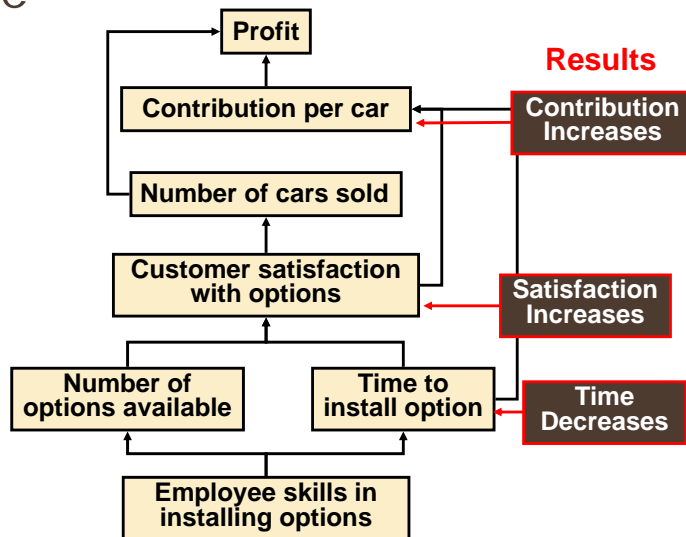
The Balanced Scorecard – Jaguar Example



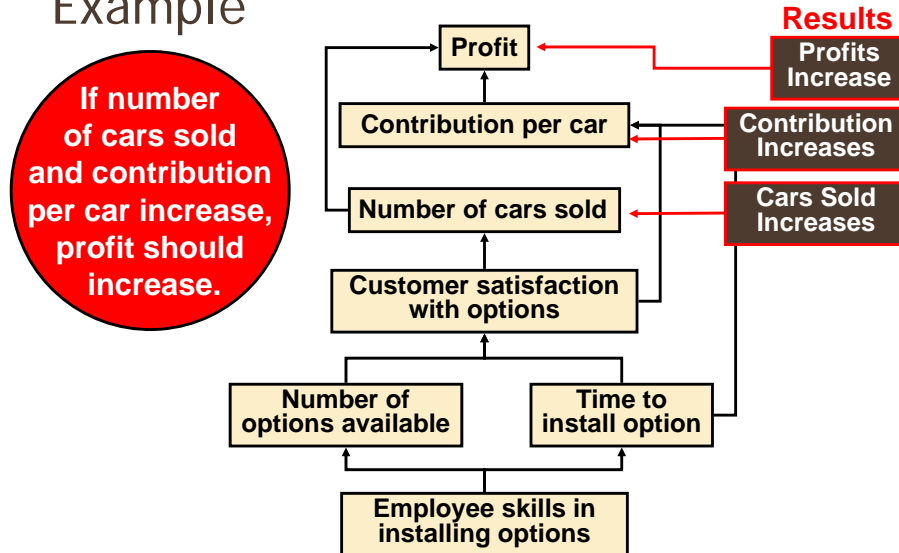
The Balanced Scorecard – Jaguar Example



The Balanced Scorecard – Jaguar Example



The Balanced Scorecard – Jaguar Example



End of Chapter 11

