



مجموعة جامعة
الجميع الذكية
للتعليم القابضة

MIDOCEAN
UNIVERSITY

Accounting for Managers

Prepared by Dr. Sara Ahmed

MGM 341

Lecture 10



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Chapter 10: Performance Evaluation

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Chapter
10

Learning Objectives

- Understand decentralization and describe different types of responsibility centers
- Calculate ROI and Residual income
- Describe the balance scorecard and identify KPIs for each perspective

Decentralization in Organizations: Benefits

Benefits of Decentralization

Lower-level decisions
often based on
better operational
decisions.

Lower-level managers
gain experience in
decision-making.

Top management
freed to concentrate
on overall strategy.

Lower-level managers
can respond quickly to
customers.

Increases motivation
resulting in increased
job satisfaction.

Decentralization in Organizations: Disadvantages

May be a lack of
coordination among
autonomous
managers.

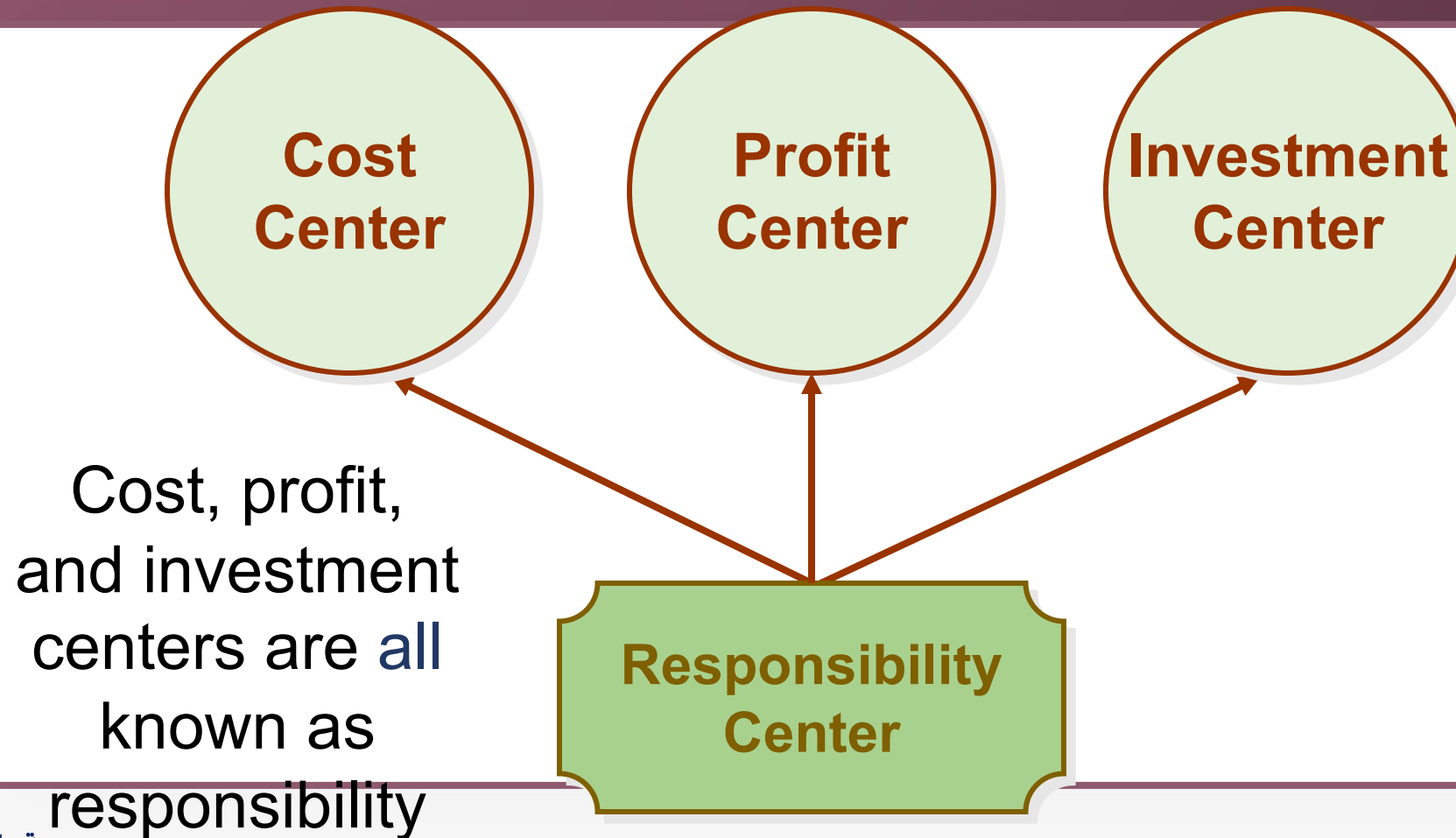
Lower-level managers
may make decisions
without seeing the
“big picture.”

Disadvantages of Decentralization

Lower-level managers’
objectives may not
be those of the
organization.

May be difficult to
spread innovative ideas
in the organization.

Responsibility Accounting



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

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

Compute return on investment (ROI) and show how changes in sales, expenses, and assets affect ROI.

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.

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?

ROI = Margin × Turnover

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

ROI = Margin × Turnover

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

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

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

Investing in Operating Assets to Increase Sales: An Example

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: An Example - Solution

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

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

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

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

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.

Compute residual income
and understand its strengths
and weaknesses.

Residual Income - Another Measure of Performance

Residual income is the net operating income above some minimum return on operating assets.

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: Solution

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

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

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

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. The required rate of return for the company is 15%. What is the division's ROI?

- a. 25%
- b. 5%
- c. 15%
- d. 20%

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. The required rate of return for the company is 15%. What is the division's ROI?

- a. 25%
- b. 5%
- c. 15%
- d. 20%

$$\begin{aligned}\text{ROI} &= \text{NOI} / \text{Average operating assets} \\ &= \$60,000 / \$300,000 = 20\%\end{aligned}$$

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. If the manager of the division is evaluated based on ROI, will she want to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

- a. Yes
- b. No

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. If the manager of the division is evaluated based on ROI, will she want to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

- a. Yes
- b. No

$$\text{ROI} = \$78,000 / \$400,000 = 19.5\%$$

This lowers the division's ROI from 20.0% down to 19.5%.

Concept Check

The company's required rate of return is 15%. Would the company want the manager of the Redmond Awnings division to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

- a. Yes
- b. No

Concept Check

The company's required rate of return is 15%. Would the company want the manager of the Redmond Awnings division to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

- a. Yes
- b. No

$$\text{ROI} = \$18,000 / \$100,000 = 18\%$$

The return on the investment exceeds the minimum required rate of return.

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. The required rate of return for the company is 15%. What is the division's residual income?

- a. \$240,000
- b. \$ 45,000
- c. \$ 15,000
- d. \$ 51,000

Concept Check

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of \$60,000 and average operating assets of \$300,000. The required rate of return for the company is 15%. What is the division's residual income?

- a. \$240,000
- b. \$ 45,000
- c. \$ 15,000
- d. \$ 51,000

Net operating income	\$60,000
Required return (15% of \$300,000)	<u>(45,000)</u>
Residual income	<u>\$15,000</u>

Concept Check

If the manager of the Redmond Awnings division is evaluated based on residual income, will she want to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

- a. Yes
- b. No

Concept Check

If the manager of the Redmond Awnings division is evaluated based on residual income, will she want to make an investment of \$100,000 that would generate additional net operating income of \$18,000 per year?

a. Yes

b. No

Net operating income	\$78,000
Required return (15% of \$400,000)	(60,000)
Residual income	<u>\$18,000</u>

Yields an increase of \$3,000 in the residual income.

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. – Part 1

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

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

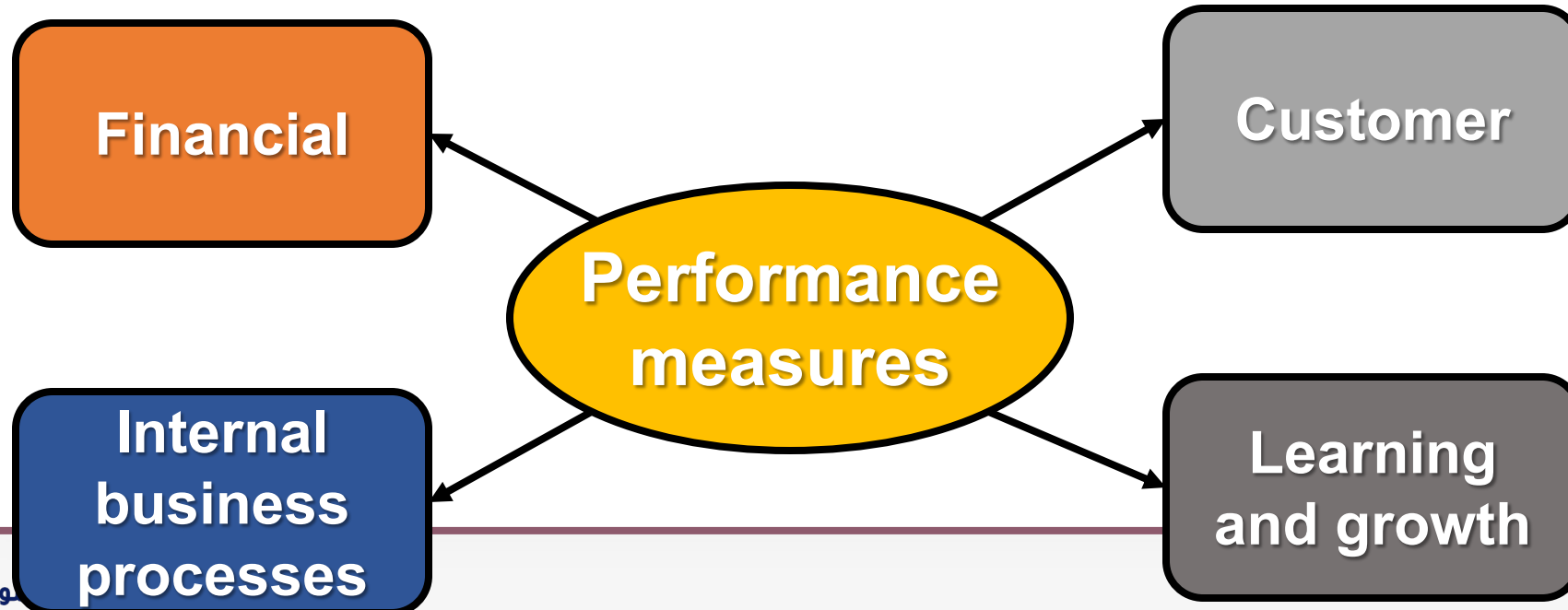
	Retail	Wholesale
Operating assets	\$ 100,000	\$ 1,000,000
Required rate of return ×	20%	20%
Minimum required return	\$ 20,000	\$ 200,000
Actual income	\$ 30,000	\$ 220,000
Minimum required return	(20,000)	(200,000)
Residual income	\$ 10,000	\$ 20,000

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.

Understand how to construct
and use a balanced
scorecard.

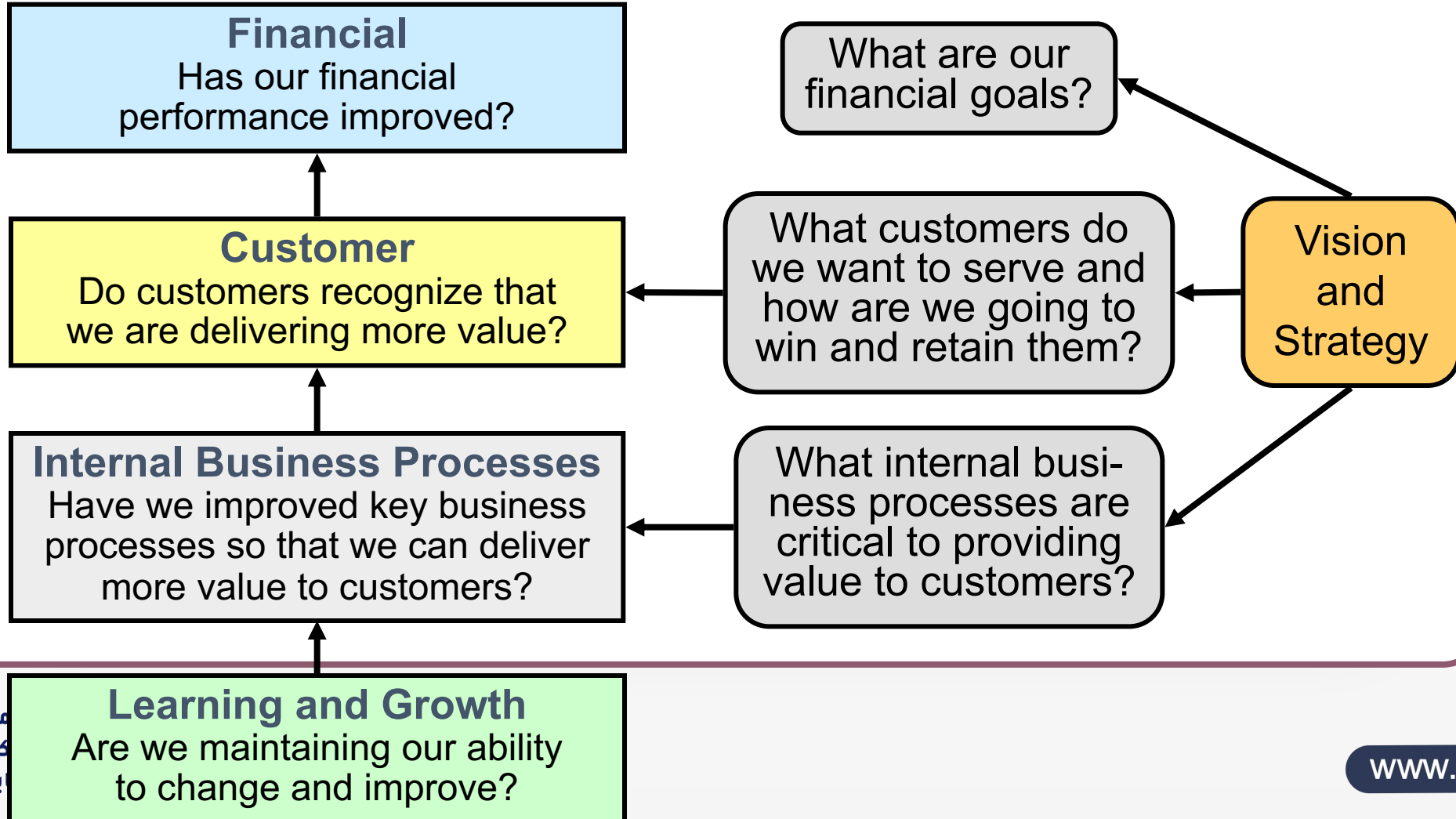
The Balanced Scorecard

Management translates its strategy into performance measures that employees understand and influence.



The Balanced Scorecard - From Strategy to Performance Measures

Performance Measures



The Balanced Scorecard – Non-financial Measures

The balanced scorecard relies on non-financial measures in addition to financial measures for two reasons:

① Financial measures are lag indicators that summarize the results of past actions. Non-financial measures are leading indicators of future financial performance.

② Top managers are ordinarily responsible for financial performance measures – not lower level managers. Non-financial measures are more likely to be understood and controlled by lower level managers.

The Balanced Scorecard for Individuals – Personal Scorecard

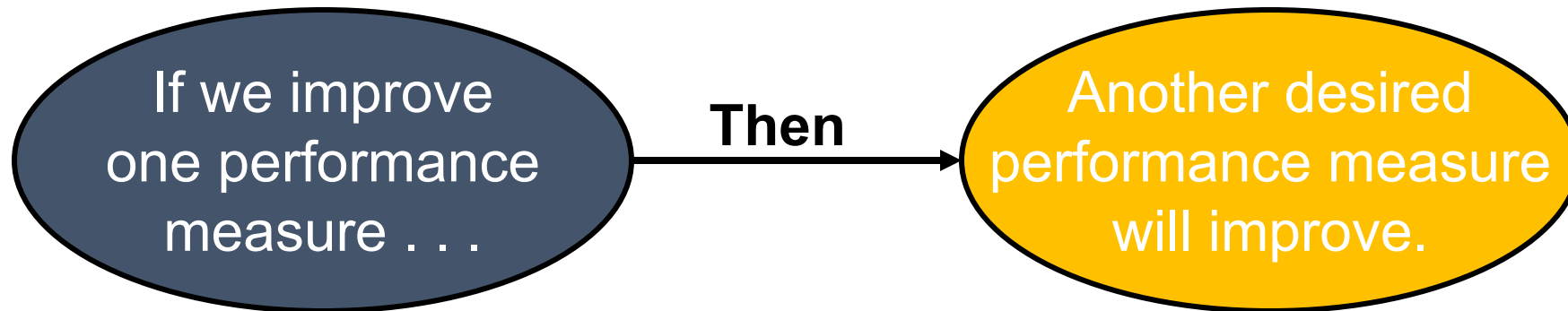
**The entire organization
should have an overall
balanced scorecard.**

**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 – Important Links

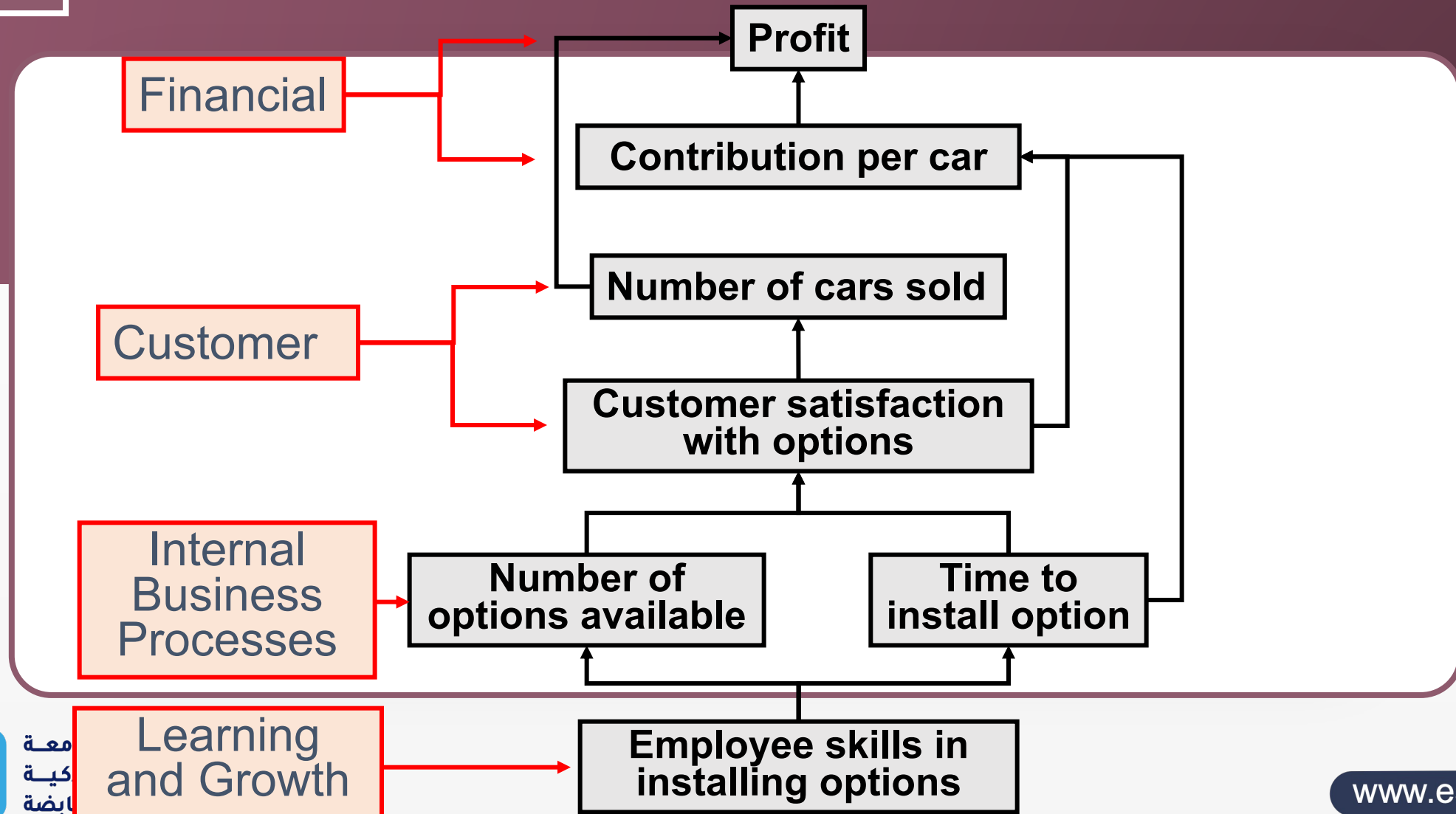
A balanced scorecard should have measures that are linked together on a cause-and-effect basis.



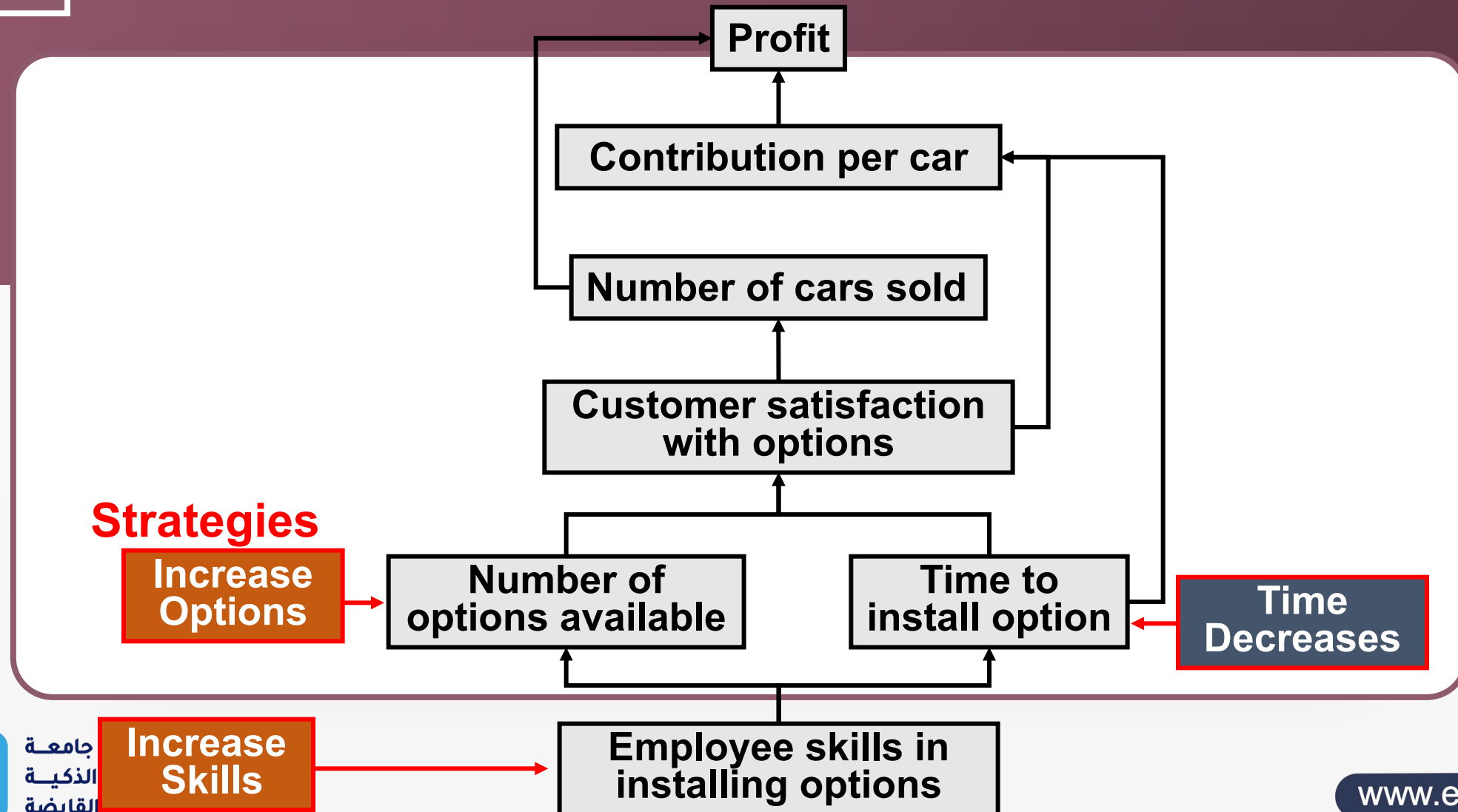
The balanced scorecard lays out concrete actions to attain desired outcomes.

Incentive compensation should be linked to balanced scorecard performance measures.

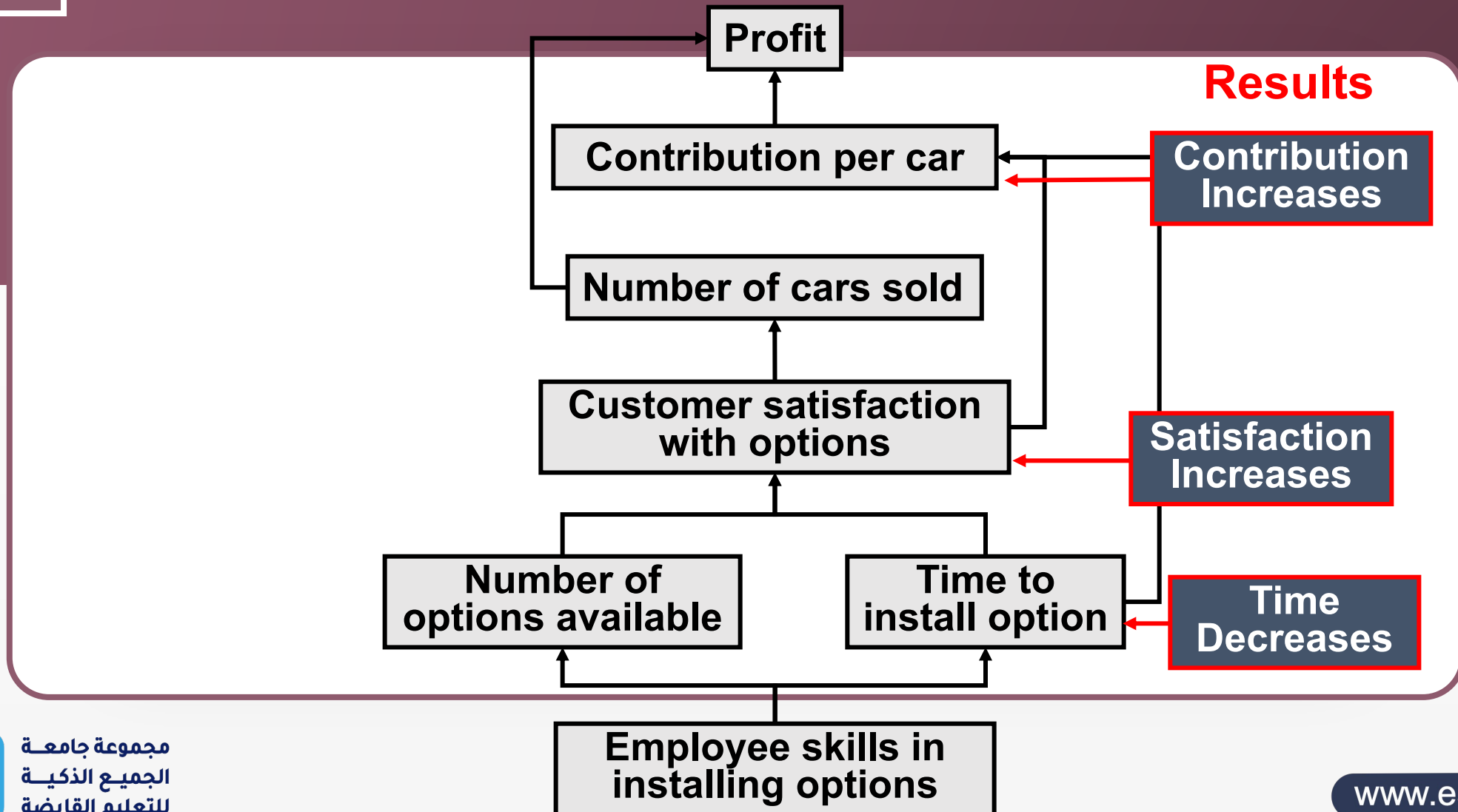
The Balanced Scorecard – Jaguar Example – Part 1



The Balanced Scorecard – Jaguar Example – Part 2

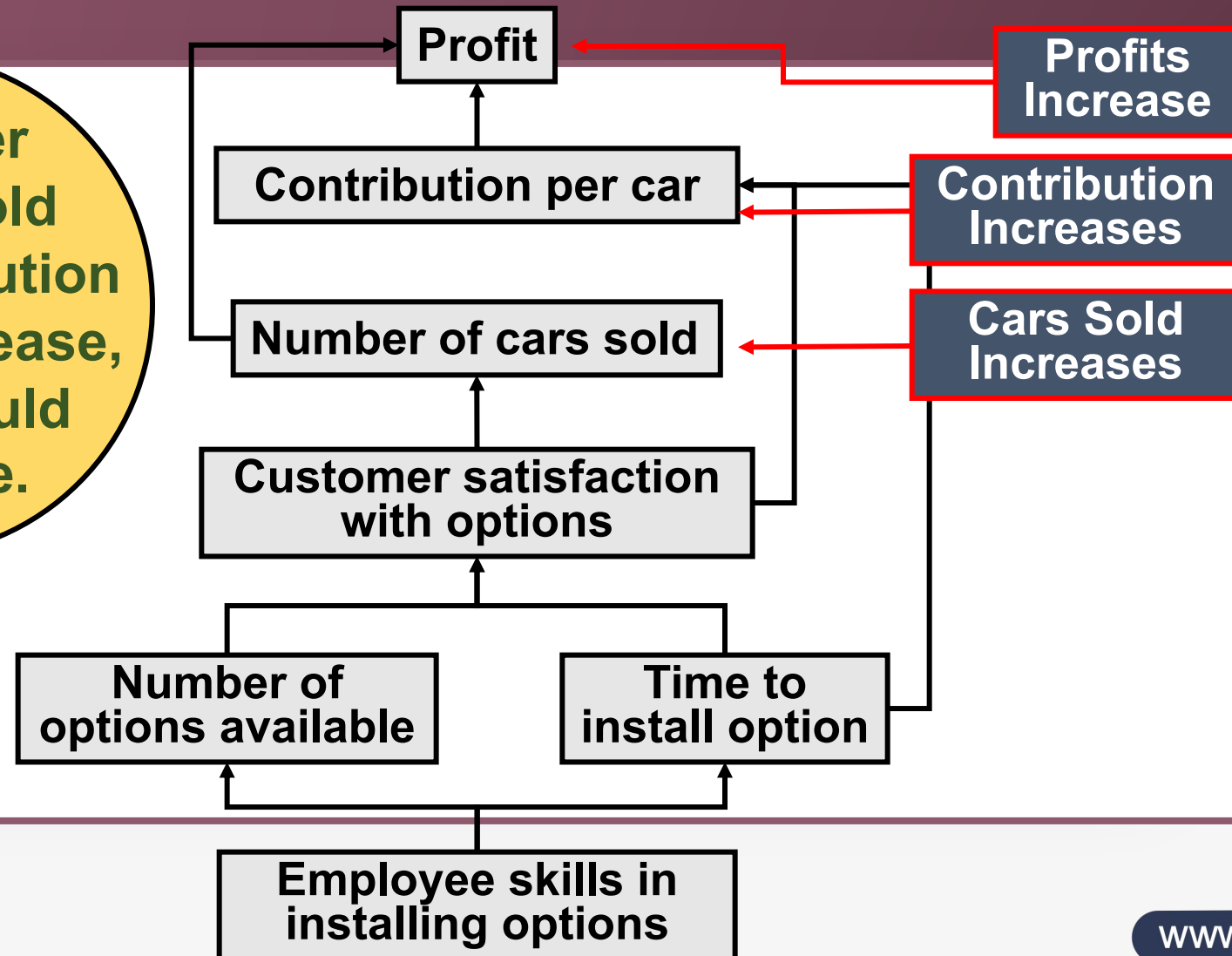


The Balanced Scorecard – Jaguar Example – Part 4



The Balanced Scorecard – Jaguar Example – Part 5

If number of cars sold and contribution per car increase, profit should increase.





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Thank You

