



Competitiveness Of The National Economies

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Lecture № 6

Competitiveness, strategy, productivity

A Cold Hard Fact

BETTER QUALITY, HIGHER PRODUCTIVITY, LOWER COSTS, AND THE ABILITY TO RESPOND QUICKLY TO CUSTOMER NEEDS ARE MORE IMPORTANT THAN EVER AND...

the bar is getting higher

Outline

- 1. The role of Mission and strategies in enhancing the competitiveness**
- 2. The types of the Strategies**
- 3. The role of productivity in defining the competitiveness**

Goal of this lecture:

- Defining the factors and functions that can affect competitiveness
- Analyzing the types of the strategies
- Analyzing the role of productivity and its approaches
- Showing examples of calculation the productivity

What functions can affect competitiveness?

Marketing:

- Identifying consumer wants/needs
 - Pricing
 - Advertising and promotions
-

Operations

- Product and service design
- Cost
- Location
- Quality
- Quick response
- Flexibility
- Inventory management
- Supply chain management
- Service

Mission and strategies



Mission

- The reason for existence for an organization

Mission Statement

- Answers the question “What business are we in?”

Strategies

- Plans for achieving organizational goals

Goals

- Provide detail and scope of mission

Tactics

- The methods and actions taken to accomplish strategies



Sample Strategies

Organizational Strategy	Operations Strategy	Examples of Companies or Services
Low Price	Low Cost	U.S. first-class postage Wal-Mart
High Quality	High performance design and/or high quality processing Consistent Quality	Sony TV Lexus Coca-Cola; electric power
Short Time	Quick Response On-time delivery	McDonald's Restaurants Express mail FedEx; One-hour photo
Newness	Innovation	3M Express mail
Variety	Flexibility Volume	Burger King ("Have it your way") McDonald's ("Buses Welcome")
Service	Superior customer service	Disneyland IBM
Location	Convenience	Supermarkets Mall Stores

Operations Strategy

Operations strategy – The approach, consistent with organization strategy, that is used to guide the operations function.

Porter's Generic Strategies

<i>Target Scope</i>	<i>Advantage</i>	
	Low Cost	Product Uniqueness
Broad (Industry Wide)	Cost Leadership Strategy	Differentiation Strategy
Narrow (Market Segment)	Focus Strategy	Focus Strategy

Strategy & core competences

Core competences (strengthes) are the natural basis for choosing a strategy

- Price
- Quality
- Time
- Flexibility
- Service
- Location
- ...

Generic Strategies and Industry Forces

<i>Industry Force</i>	<i>Generic Strategies</i>		
	Cost Leadership	Differentiation	Focus
Entry Barriers	Ability to cut price in retaliation deters potential entrants.	Customer loyalty can discourage potential entrants.	Focusing develops core competencies that can act as an entry barrier.
Buyer Power	Ability to offer lower price to powerful buyers.	Large buyers have less power to negotiate because of few close alternatives.	Large buyers have less power to negotiate because of few alternatives.
Supplier Power	Better insulated from powerful suppliers.	Better able to pass on supplier price increases to customers.	Suppliers have power because of low volumes, but a differentiation-focused firm is better able to pass on supplier price increases.
Threat of Substitutes	Can use low price to defend against substitutes.	Customer's become attached to differentiating attributes, reducing threat of substitutes.	Specialized products & core competency protect against substitutes.
Rivalry	Better able to compete on price.	Brand loyalty to keep customers from rivals.	Rivals cannot meet differentiation-focused customer needs.

Strategy Formulation

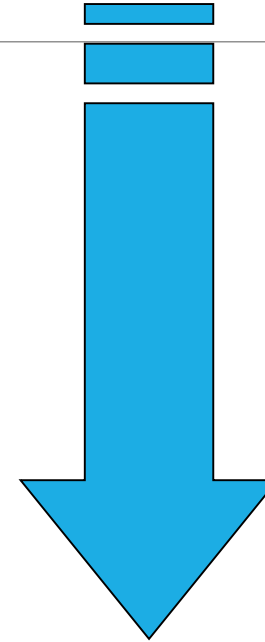
Distinctive competencies

Environmental scanning

SWOT

Order qualifiers

Order winners



Operations strategy
tactics and
operational plans

Environmental scanning

Considering of events and trends that presents threats or opportunities for a company

Key External Factors

Economic conditions

Political conditions

Legal environment

Technology

Competition (competitors, the basis of competition, ease of entry)

Markets

Key Internal Factors

Human resources

Facilities and equipment

Customers (loyalty, understanding)

Products and services (existing & potential)

Technology

Suppliers

Other (patents, labor relations etc.)

SWOT ANALYSIS

	Helpful to achieving the objective	Harmful to achieving the objective
Internal origin (attributes of the organization)	S Strengths	W Weaknesses
External origin (attributes of the environment)	O Opportunities	T Threats

Order qualifiers and order winner

Order qualifiers:

- Characteristics of a company's product or service that customers perceive as minimum standards of acceptability to be considered as a standard

Order winners:

- Characteristics of a company's product or service that cause it to be perceived as better than the competition

Comparison of organizational goals

		Management Level	Time Horizon	Scope	Level of Detail	Relates to
The overall organization	Mission	Top	Long	Broad	Low	Survival, profitability
	Strategy	Senior	Long	Broad	Low	Growth rate, market share
Operations	Strategic	Senior	Moderate to long	Broad	Low	Product design, choice of location, choice of technology, new facilities
	Tactical	Middle	Moderate	Moderate	Moderate	Employment levels, output levels, equipment selection, facility layout
	Operational	Low	Short	Narrow	High	Scheduling personnel, adjusting output rates, inventory management, purchasing

Quality and Time Strategies

Quality-based strategies

- Focuses on maintaining or improving the quality of an organization's products or services
- Quality at the source

Time-based strategies

- Focuses on reduction of time needed to accomplish tasks

Decision areas of strategic operations management

Decision Area	What the Decisions Affect
1. Product and service design	Costs, quality, liability and environmental issues
2. Capacity	Cost structure, flexibility
3. Process selection and layout	Costs, flexibility, skill level needed, capacity
4. Work design	Quality of work life, employee safety, productivity
5. Location	Costs, visibility
6. Quality	Ability to meet or exceed customer expectations
7. Inventory	Costs, shortages
8. Maintenance	Costs, equipment reliability, productivity
9. Scheduling	Flexibility, efficiency
10. Supply chains	Costs, quality, agility, shortages, vendor relations
11. Projects	Costs, new products, services, or operating systems

Productivity

Productivity

- **A measure of the effective use of resources,** usually expressed as the ratio of output to input

Productivity ratios are used for

- Planning workforce requirements
- Scheduling equipment
- Financial analysis
- ...

$$\text{Productivity} = \frac{\text{Outputs}}{\text{Inputs}}$$

Why Productivity Matters

High productivity is linked to higher standards of living

- As an economy replaces manufacturing jobs with lower productivity service jobs, it is more difficult to maintain high standards of living

Higher productivity relative to the competition leads to competitive advantage in the marketplace

- Pricing and profit effects

For an industry, high relative productivity makes it less likely it will be supplanted by foreign industry

Productivity

Partial measures

- $\text{output}/(\text{single input})$

Multi-factor measures

- $\text{output}/(\text{multiple inputs})$

Total measure

- $\text{output}/(\text{total inputs})$

Levels of measuring productivity

Single operation

Organizational unit

The entire organization

Country

...

Productivity Growth

Productivity Growth =

$$\frac{\text{Current Period Productivity} - \text{Previous Period Productivity}}{\text{Previous Period Productivity}}$$

Measures of Productivity

Partial measures	$\frac{\text{Output}}{\text{Labor}}$	$\frac{\text{Output}}{\text{Machine}}$	$\frac{\text{Output}}{\text{Capital}}$	$\frac{\text{Output}}{\text{Energy}}$
Multifactor measures	$\frac{\text{Output}}{\text{Labor} + \text{Machine}}$		$\frac{\text{Output}}{\text{Labor} + \text{Capital} + \text{Energy}}$	
Total measure	$\frac{\text{Goods or Services Produced}}{\text{All inputs used to produce them}}$			

Examples of Partial Productivity Measures

Labor Productivity	Units of output per worker Units of output per labor hour Units of output per shift
Machine Productivity	Units of output per machine hour
Capital Productivity	Units of output per money input Money value of output per money input
Energy Productivity	Units of output per kilowatt-hour Money value of output per kilowatt-hour

Example

7040 Units Produced

Sold for €1.10/unit

**Cost of labor €1,000 total
(labor hrs used = 10)**

**Cost of machines: €520 total
(machine hrs used = 8)**

**Overhead expenses: €2000
total**

What is the

***- multifactor
productivity?***

- labour

productivity?

***- machine
productivity***

Solutions:

2.20

704 units/hr; 7.74

880 units/hr; 14.89

Solution MFP

$$\text{MFP} = \frac{\text{Output}}{\text{Labor} + \text{Materials} + \text{Overhead}}$$

$$\text{MFP} = \frac{(7040 \text{ units}) \cdot (\text{€}1.10)}{\text{€}1000 + \text{€}520 + \text{€}2000}$$

$$\text{MFP} = 2.20$$

Service Sector Productivity

- Service sector productivity is difficult to measure and manage because

 - It involves intellectual activities
 - It has a high degree of variability
- A useful measure related to productivity is *process yield*
 - Where products are involved
 - ratio of output of good product to the quantity of raw material input.
 - Where services are involved, process yield measurement is often dependent on the particular process:
 - ratio of cars rented to cars available for a given day
 - ratio of student acceptances to the total number of students approved for admission.

Factors Affecting Productivity

Capital / Labour

Quality

- quality aim
- quality of production

Technology

- labor/capital
- processes

Management

Other Factors Affecting Productivity

Standardization

Information technology

Design of the workspace; searching for lost or misplaced items

Scrap rates

Labor turnover, new workers, shortage of workers

Safety

Incentives



Improving Productivity

1. Develop productivity measures for all operations
2. Determine critical (bottleneck) operations
3. Develop methods for productivity improvements
4. Establish reasonable goals
5. Make it clear that management supports and encourages productivity improvement
6. Measure and publicize improvements

Don't confuse *productivity* with *efficiency*

Exercise 1.

A group of four workers installed 720 square yards of carpeting in 8 hours. What is the labour productivity ratio?

$$\begin{aligned} & 720 \text{ hrs} / (4 \text{ workers} * 8 \text{ hrs}) \\ & = 22.5 \text{ yards per hour} \end{aligned}$$

- A new worker joins the group. The next job (900 yards) is done in 9.5 hour. What is the new productivity, and what is the productivity change?

$$\begin{aligned} & 900 \text{ hrs} / (5 \text{ workers} * 9,5 \text{ hrs}) \\ & = 18.9 \text{ yards per hour} \end{aligned}$$

$$18.9 - 22.5 = -3.6 \text{ yards/hr}$$

Productivity Calculation Example

Units produced: 5,000

Standard price: \$35/unit

Labor input: 500 hours

Cost of labor of \$25/hour

Cost of materials: \$5,000

Cost of overhead: 2x labor cost

***What is the
multifactor
productivity?***

Solution

$$\begin{aligned}\text{Multifactor Productivity} &= \frac{\text{Output}}{\text{Labor} + \text{Material} + \text{Overhead}} \\ &= \frac{5,000 \text{ units} \times \$35/\text{unit}}{(500 \text{ hours} \times \$25/\text{hour}) + \$5,000 + (2(500 \text{ hours} \times \$25/\text{hour}))} \\ &= 4.12\end{aligned}$$

What is the implication of a unitless measure of productivity?

Productivity Growth

$$\text{Productivity Growth} = \frac{\text{Current productivity} - \text{Previous productivity}}{\text{Previous productivity}} \times 100\%$$

Example: Labor productivity on the ABC assembly line was 25 units per hour in 2006. In 2007, labor productivity was 23 units per hour. What was the productivity growth from 2006 to 2007?

$$\text{Productivity Growth} = \frac{23 - 25}{25} \times 100\% = -8\%$$

Thank
you

