**penjelasan Seminar Akademis dan Presentasi**

1. Form tersedia di blog
2. Laporan seminar diunggah di web pada satu daftar
3. Presentasi mandiri, hanya seorang, dimulai di Semester II, III, dan IV
4. Presentasi bisa bersumber dari Topik Bidang Manajemen dan Konsentrasi

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**Outline**

- Global Company Profile: Hard Rock Cafe
- What Is Operations Management?
- Organizing to Produce Goods and Services
- Why Study OM?
- What Operations Managers Do
  - How This Book Is Organized

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**Operations Management**

*Chapter 1 – Operations and Productivity*

*PowerPoint presentation to accompany Heizer/Render Principles of Operations Management, 7e Operations Management, 9e*
Learning Objectives

When you complete this chapter you should be able to:

1. Define operations management
2. Explain the distinction between goods and services
3. Explain the difference between production and productivity
Learning Objectives

When you complete this chapter you should be able to:

4. Compute single-factor productivity
5. Compute multifactor productivity
6. Identify the critical variables in enhancing productivity

The Hard Rock Cafe

- First opened in 1971
- Now – 121 restaurants in over 40 countries
- Rock music memorabilia
- Creates value in the form of good food and entertainment
- 3,500+ custom meals per day in Orlando
- How does an item get on the menu?

What Is Operations Management?

Production penciptaan barang dan jasa

Operations management (OM) rangkatian tindakan yang menciptakan nilai dalam bentuk barang dan jasa dengan mentransformasi input menjadi output.
Organizing to Produce Goods and Services

- Essential functions:
  - Marketing – menciptakan permintaan
  - Production/operations – menciptakan barang dan jasa
  - Finance/accounting – seberapa baik perusahaan melakukan pembayaran dan mengumpul uang.

Bagan organisasi

Operations
- Teller
- Scheduling
- Check Clearing
- Collection
- Transaction processing
- Facilities design/layout
- Vault operations
- Maintenance
- Security

Finance
- Investments
- Security
- Real estate

Marketing
- Loans
- Commercial
- Industrial
- Financial
- Personal
- Mortgage

Audit
- Trust Department

Bank Komersil

Figure 1.1(A)

Bagan Organisasi

Operations
- Ground support equipment
- Maintenance
- Ground Operations
- Facility maintenance
- Catering
- Flight Operations
- Crew scheduling
- Flying
- Communications
- Dispatching
- Management science

Finance/Accounting
- Payables
- Receivables
- General Ledger
- Finance
- Cash control
- International exchange

Marketing
- Traffic administration
- Reservations
- Schedules
- Tariffs (pricing)
- Sales
- Advertising

Figure 1.1(B)
Kenapa Mempelajari OM?

- Fungsi utama organisasi selain (marketing, finance, and operations)
- Bagaimana menghasilkan barang dan jasa sebagaimana diinginkan atau dibutuhkan pelanggan.
- Mengetahui apa yang dikerjakan oleh manajer operasi.
- Bagian yang mahal dalam organisasi.

Opsi Menambah Kontribusi

<table>
<thead>
<tr>
<th></th>
<th>Marketing Option</th>
<th>Finance/ Accounting Option</th>
<th>OM Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Sales</td>
<td>$100,000</td>
<td>$150,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Revenue 50%</td>
<td>$50,000</td>
<td>$75,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Cost of Goods</td>
<td>– $80,000</td>
<td>– $120,000</td>
<td>– $80,000</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>$20,000</td>
<td>$30,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>Finance Costs</td>
<td>– $6,000</td>
<td>– $6,000</td>
<td>– $3,000</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$14,000</td>
<td>$24,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>Taxes at 25%</td>
<td>– $3,500</td>
<td>– $6,000</td>
<td>– $4,250</td>
</tr>
<tr>
<td>Contribution</td>
<td>$10,500</td>
<td>$18,000</td>
<td>$12,750</td>
</tr>
</tbody>
</table>

Finance/ Accounting
- Disbursements and credits
- Receivables
- Payables
- General ledger
- Funds Management
- Money market
- International exchange
- Capital requirements
- Stock issue
- Bond issue
- and recall
Apa yang dikerjakan Manajer Operasi

Basic Management Functions

- Planning
- Organizing
- Staffing
- Leading
- Controlling

10 Keputusan Kritis

Table 1.2

Keputusan Kritis

- Design of goods and services
  - What good or service should we offer?
  - How should we design these products and services?
- Managing quality
  - Bagaimana Mendefinisikan kualitas?
  - Siapa yang bertanggungjawab terhadap kualitas?
Keputusan Kritis

- **Process and capacity design**
  - Proses dan kapasitas apa yang dibutuhkan oleh barang dan jasa yang akan dihasilkan?
  - Peralatan dan teknologi apa yang dibutuhkan pada proses itu?

- **Location strategy**
  - Where should we put the facility?
  - Apa kriteria keputusan penentuan lokasi?

Keputusan Strategis

- **Layout strategy**
  - How should we arrange the facility?
  - How large must the facility be to meet our plan?

- **Human resources and job design**
  - How do we provide a reasonable work environment?
  - How much can we expect our employees to produce?

Keputusan Strategis

- **Supply chain management**
  - Apakah kita membuat atau membelinya?
  - Siapa pemasok dan bagaimana mengintegrasikannya ke program e-commerce?

- **Inventory, material requirements planning, and JIT**
  - Berapa banyak persediaan yang dapat dimiliki?
  - Kapan melakukan pesanan ulang?
Keputusan Strategis

- Intermediate and short-term scheduling
  - Are we better off keeping people on the payroll during slowdowns?
  - Which jobs do we perform next?

- Maintenance
  - Who is responsible for maintenance?
  - When do we do maintenance?

Table 1.2 (cont.)

Dimana MO bekerja?

<table>
<thead>
<tr>
<th>PLANT MANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madeira Company, 2000 – present</td>
</tr>
<tr>
<td>■ Formed and managed a small company that handled data acquisition, analysis, and reporting with equipment and software</td>
</tr>
<tr>
<td>■ Assisted in plant management and general plant performance</td>
</tr>
<tr>
<td>■ Formed and managed the maintenance and repair of plant equipment and machinery</td>
</tr>
<tr>
<td>■ Conducted maintenance and repair work on plant equipment and machinery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operations Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madeira Company, 2000 – present</td>
</tr>
<tr>
<td>■ Assisted in plant management and general plant performance</td>
</tr>
<tr>
<td>■ Conducted maintenance and repair work on plant equipment and machinery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supply Chain Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madeira Company, 2000 – present</td>
</tr>
<tr>
<td>■ Assisted in plant management and general plant performance</td>
</tr>
<tr>
<td>■ Conducted maintenance and repair work on plant equipment and machinery</td>
</tr>
</tbody>
</table>

Where are the OM Jobs?

- Technology/methods
- Facilities/space utilization
- Strategic issues
- Response time
- People/team development
- Customer service
- Quality
- Cost reduction
- Inventory reduction
- Productivity improvement
Warisan MO

- Division of labor (Adam Smith 1776; Charles Babbage 1852)
- Standardized parts (Whitney 1800)
- Scientific Management (Taylor 1881)
- Coordinated assembly line (Ford/Sorenson 1913)
- Gantt charts (Gantt 1916)
- Motion study (Frank and Lillian Gilbreth 1922)
- Quality control (Shewhart 1924; Deming 1950)

Warisan MO

- Computer (Atanasoff 1938)
- CPM/PERT (DuPont 1957)
- Material requirements planning (Orlicky 1960)
- Computer aided design (CAD 1970)
- Flexible manufacturing system (FMS 1975)
- Baldrige Quality Awards (1980)
- Computer integrated manufacturing (1990)
- Globalization (1992)
- Internet (1995)
Eli Whitney
- Born 1765; died 1825
- In 1798, received government contract to make 10,000 muskets
- Showed that machine tools could make standardized parts to exact specifications
  - Musket parts could be used in any musket

Frederick W. Taylor
- Born 1856; died 1915
- Known as ‘father of scientific management’
- In 1881, as chief engineer for Midvale Steel, studied how tasks were done
  - Began first motion and time studies
  - Created efficiency principles

Taylor’s Principles
- Management Should Take More Responsibility for:
  - Matching employees to right job
  - Providing the proper training
  - Providing proper work methods and tools
  - Establishing legitimate incentives for work to be accomplished
Frank & Lillian Gilbreth

- Frank (1868-1924); Lillian (1878-1972)
- Husband-and-wife engineering team
- Further developed work measurement methods
- Applied efficiency methods to their home and 12 children!

Henry Ford

- Born 1863; died 1947
- In 1903, created Ford Motor Company
- In 1913, first used moving assembly line to make Model T
  - Unfinished product moved by conveyor past work station
- Paid workers very well for 1911 ($5/day!)

W. Edwards Deming

- Born 1900; died 1993
- Engineer and physicist
- Credited with teaching Japan quality control methods in post-WW2
- Used statistics to analyze process
- His methods involve workers in decisions
**Bentuk Kontribusi**

- Human factors
- Industrial engineering
- Management science
- Biological science
- Physical sciences
- Information technology

**Tantangan Baru MO**

**From**
- Local or national focus
- Batch shipments
- Low bid purchasing
- Lengthy product development
- Standard products
- Job specialization

**To**
- Global focus
- Just-in-time
- Supply chain partnering
- Rapid product development, alliances
- Mass customization
- Empowered employees, teams

**Characteristics of Goods**

- Tangible product
- Consistent product definition
- Production usually separate from consumption
- Can be inventoried
- Low customer interaction
Characteristics of Service

- Intangible product
- Produced and consumed at the same time
- Often unique
- High customer interaction
- Inconsistent product definition
- Often knowledge-based
- Frequently dispersed

Industry and Services as Percentage of GDP

Goods Versus Services

<table>
<thead>
<tr>
<th>Attributes of Goods (Tangible Product)</th>
<th>Attributes of Services (Intangible Product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be resold</td>
<td>Reselling unusual</td>
</tr>
<tr>
<td>Can be inventoried</td>
<td>Difficult to inventory</td>
</tr>
<tr>
<td>Some aspects of quality measurable</td>
<td>Quality difficult to measure</td>
</tr>
<tr>
<td>Selling is distinct from production</td>
<td>Selling is part of service</td>
</tr>
<tr>
<td>Product is transportable</td>
<td>Provider, not product, is often transportable</td>
</tr>
<tr>
<td>Site of facility important for cost</td>
<td>Site of facility important for customer contact</td>
</tr>
<tr>
<td>Often easy to automate</td>
<td>Often difficult to automate</td>
</tr>
<tr>
<td>Revenue generated primarily from tangible product</td>
<td>Revenue generated primarily from the intangible service</td>
</tr>
</tbody>
</table>
### Goods and Services

<table>
<thead>
<tr>
<th>Percent of Product that is a Good</th>
<th>Percent of Product that is a Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1.4**

### Manufacturing and Service Employment

- **Manufacturing Employment**
- **Service Employment**

**Figure 1.5 (A)**

### Manufacturing Employment and Production

- **Industrial production** (right scale)
- **Manufacturing employment** (left scale)

**Figure 1.5 (B)**
Development of the Service Economy

United States
Canada
France
Britain
Japan
W. Germany

1970
2008 (est)

Percent

Figure 1.5 (C)

Organizations in Each Sector

<table>
<thead>
<tr>
<th>Service Sector</th>
<th>Example</th>
<th>% of all Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education, Legal, Medical, and</td>
<td>Notre Dame University, San Diego Zoo, Arnold Palmer Hospital</td>
<td>25.5</td>
</tr>
<tr>
<td>other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade (retail, wholesale)</td>
<td>Walgreen's, Wal-Mart, Nordstrom's</td>
<td>15.1</td>
</tr>
<tr>
<td>Utilities, Transportation</td>
<td>Pacific Gas &amp; Electric, American Airlines, Santa Fe R.R., Roadway Express</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Table 1.4

Organizations in Each Sector

<table>
<thead>
<tr>
<th>Service Sector</th>
<th>Example</th>
<th>% of all Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional and Business Services</td>
<td>Snelling and Snelling, Waste Management, Pitney-Bowes</td>
<td>10.1</td>
</tr>
<tr>
<td>Finance, Information, Real Estate</td>
<td>Citicorp, American Express, Prudential, Aetna, Trammel Crow, EDS, IBM</td>
<td>9.6</td>
</tr>
<tr>
<td>Food, Lodging, Entertainment</td>
<td>Olive Garden, Hard Rock Cafe, Motel 6, Hilton Hotels, Walt Disney, Paramount Pictures</td>
<td>8.5</td>
</tr>
<tr>
<td>Public Administration</td>
<td>U.S., State of Alabama, Cook County</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 1.4
### Organizations in Each Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Example</th>
<th>% of all Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>General Electric, Ford, U.S. Steel, Intel</td>
<td>11.5</td>
</tr>
<tr>
<td>Construction</td>
<td>Bechtel, McDermott</td>
<td>7.9</td>
</tr>
<tr>
<td>Agriculture</td>
<td>King Ranch</td>
<td>1.6</td>
</tr>
<tr>
<td>Mining</td>
<td>Homestake Mining</td>
<td>0.4</td>
</tr>
<tr>
<td>Service</td>
<td></td>
<td>78.6%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td>21.4%</td>
</tr>
</tbody>
</table>

Table 1.4

### New Trends in OM

<table>
<thead>
<tr>
<th>Past</th>
<th>Causes</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lengthy product development</td>
<td>Shorter life cycles, Internet, rapid international communication, computer-aided design, and international collaboration</td>
<td>Rapid product development, alliances, collaborative designs</td>
</tr>
<tr>
<td>Standardized products</td>
<td>Affluence and worldwide markets; increasingly flexible production processes</td>
<td>Mass customization with added emphasis on quality</td>
</tr>
<tr>
<td>Job specialization</td>
<td>Changing socioculture milieu; increasingly a knowledge and information society</td>
<td>Empowered employees, teams, and lean production</td>
</tr>
</tbody>
</table>

Figure 1.6
New Trends in OM

Past Causes Future

Low-cost focus Environmental issues, ISO 14000, increasing disposal costs Environmentally sensitive production, green manufacturing, recycled materials, remanufacturing

Ethics not at forefront Businesses operate more openly; public and global review of ethics; opposition to child labor, bribery, pollution High ethical standards and social responsibility expected

Figure 1.6

Global focus
Just-in-time performance
Supply chain partnering
Rapid product development
Mass customization
Empowered employees
Environmentally sensitive production
Ethics

Productivity Challenge

Productivity is the ratio of outputs (goods and services) divided by the inputs (resources such as labor and capital)

The objective is to improve productivity!

Important Note!
Production is a measure of output only and not a measure of efficiency
Feedback loop

The U.S. economic system transforms inputs to outputs at about an annual 2.5% increase in productivity per year. The productivity increase is the result of a mix of capital (38% of 2.5%), labor (10% of 2.5%), and management (52% of 2.5%).

Figure 1.7

Improving Productivity at Starbucks

A team of 10 analysts continually look for ways to shave time. Some improvements:

- Stop requiring signatures on credit card purchases under $25 Saved 8 seconds per transaction
- Change the size of the ice scoop Saved 14 seconds per drink
- New espresso machines Saved 12 seconds per shot

Operations improvements have helped Starbucks increase yearly revenue per outlet by $200,000 to $940,000 in six years. Productivity has improved by 27%, or about 4.5% per year.
**Productivity**

Productivity = \( \frac{\text{Units produced}}{\text{Input used}} \)

- **Measure of process improvement**
- **Represents output relative to input**
- **Only through productivity increases can our standard of living improve**

**Productivity Calculations**

**Labor Productivity**

Productivity = \( \frac{\text{Units produced}}{\text{Labor-hours used}} \)

\[
\begin{align*}
\text{Productivity} & = \frac{1,000}{250} = 4 \text{ units/labor-hour} \\
\end{align*}
\]

**One resource input \( \Rightarrow \) single-factor productivity**

**Multi-Factor Productivity**

Productivity = \( \frac{\text{Output}}{\text{Labor} + \text{Material} + \text{Energy} + \text{Capital} + \text{Miscellaneous}} \)

- **Also known as total factor productivity**
- **Output and inputs are often expressed in dollars**

**Multiple resource inputs \( \Rightarrow \) multi-factor productivity**
Collins Title Productivity

**Old System:**
- Staff of 4 works 8 hrs/day
- Payroll cost = $640/day
- Overhead = $400/day
- Old labor productivity = \( \frac{8 \text{ titles/day}}{32 \text{ labor-hrs}} = 0.25 \text{ titles/labor-hr} \)

**New System:**
- 14 titles/day
- Overhead = $800/day
- New labor productivity = \( \frac{14 \text{ titles/day}}{32 \text{ labor-hrs}} = 0.44 \text{ titles/labor-hr} \)
Collins Title Productivity

Old System:
- Staff of 4 works 8 hrs/day
- Payroll cost = $640/day
- Overhead = $400/day
- 8 titles/day

New System:
- 14 titles/day
- Overhead = $800/day
- Old labor productivity = \( \frac{8 \text{ titles/day}}{32 \text{ labor-hrs}} = 0.25 \text{ titles/labor-hr} \)
- New labor productivity = \( \frac{14 \text{ titles/day}}{32 \text{ labor-hrs}} = 0.4375 \text{ titles/labor-hr} \)

Old System:
- 14 titles/day
- Overhead = $800/day

New System:
- 8 titles/day
- Payroll cost = $640/day
- Overhead = $400/day
- Old multifactor productivity = \( \frac{8 \text{ titles/day}}{640 + 400} = 0.0077 \text{ titles/dollar} \)
**Collins Title Productivity**

**Old System:**
- Staff of 4 works 8 hrs/day
- Payroll cost = $640/day
- Overhead = $400/day
- 8 titles/day

**New System:**
- 14 titles/day
- Overhead = $800/day

Old multifactor productivity = \( \frac{8 \text{ titles/day}}{640 + 400} = 0.0077 \text{ titles/dollar} \)

New multifactor productivity = \( \frac{14 \text{ titles/day}}{640 + 800} = 0.0097 \text{ titles/dollar} \)

**Persoalan Pengukuran**

- **Quality** may change while the quantity of inputs and outputs remains constant
- **External elements** may cause an increase or decrease in productivity
- **Precise units** of measure may be lacking
Variabel Produktivitas

- Labor - contributes about 10% of the annual increase
- Capital - contributes about 38% of the annual increase
- Management - contributes about 52% of the annual increase

Key Variables for Improved Labor Productivity

- Basic education appropriate for the labor force
- Diet of the labor force
- Social overhead that makes labor available
- Maintaining and enhancing skills in the midst of rapidly changing technology and knowledge

Labor Skills

About half of the 17-year-olds in the US cannot correctly answer questions of this type

Figure 1.8
Investment and Productivity

Service Productivity

- Typically labor intensive
- Frequently focused on unique individual attributes or desires
- Often an intellectual task performed by professionals
- Often difficult to mechanize
- Often difficult to evaluate for quality

Productivity at Taco Bell

Improvements:
- Revised the menu
- Designed meals for easy preparation
- Shifted some preparation to suppliers
- Efficient layout and automation
- Training and employee empowerment
**Productivity at Taco Bell**

**Improvements:**
- Revised the menu
- Designed meals for easy preparation
- Shifted some preparation to suppliers
- Efficient layout and automation
- Training and employee empowerment

**Results:**
- Preparation time cut to 8 seconds
- Management span of control increased from 5 to 30
- In-store labor cut by 15 hours/day
- Stores handle twice the volume with half the labor
- Fast-food low-cost leader

**Ethics and Social Responsibility**

**Challenges facing operations managers:**
- Developing and producing safe, quality products
- Maintaining a clean environment
- Providing a safe workplace
- Honoring community commitments